

Martin Weidenbörner

Mycotoxins in Foodstuffs

Second Edition



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My Parents

Introduction

All animals, including humans, require food. But food supplies can be attacked, including by microorganisms. Under suitable conditions, microorganisms can proliferate and spoil food. Among microorganisms, filamentous fungi are of special concern. In the worst case, these fungi produce secondary metabolites, the so-called mycotoxins. They can be very harmful to humans and animals. At high levels, mycotoxins may cause death shortly after exposure. At lower levels, they can cause disorders in various organs or impair immunity. For example, in 1960, turkey X disease, which was caused by a toxin (aflatoxin) produced by molds of the *Aspergillus flavus* group, resulted in the death of 100,000 turkeys in the UK. This event launched the search for mycotoxins. Today, there are approximately 470 known mycotoxins that have various negative effects on one or several organs in humans or animals. Ultimately, mycotoxins are a risk to both human and animal health.

In contrast to the bacterial contamination of food, the enhanced contamination by fungi is more visual. Consumers can see moldy food with their own eyes, and public awareness of the health hazards of microorganisms in food is great. Furthermore, consumers demand high-quality food. As a prerequisite for producing such food, the entire food industry must know about fungi and their related mycotoxins. This book, *Mycotoxins in Foodstuffs*, provides solid and reliable information about the main mycotoxins in food.

Mycotoxin contamination of food occurs as a result of crop invasion by field fungi such as *Fusarium* spp. and *Alternaria* spp. Drought, close planting, competition from weeds, reduced fertilization, and other factors cause stress to plants, which enhances the growth of these fungi. Mycotoxin contamination is also caused by the growth of storage fungi such as *Aspergillus* spp. and *Penicillium* spp. in improperly stored crops, after processing plants into food products and during food preservation, including refrigeration.

In order to produce high quality, uncontaminated food, the entire food industry must be knowledgeable about these fungi and their related mycotoxins.

This second edition of *Mycotoxins in Foodstuffs* provides updated, dependable information about the main mycotoxins in food. Where useful, entries are described in greater detail from the first edition. The book lists the degree of contamination, concentration, and country of detection/origin for each case of

mycotoxin contamination. The simultaneous contamination of a foodstuff by different mycotoxins is presented to the extent possible. In addition, the book shows whether a foodstuff is predisposed to mycotoxin contamination (by the number of different mycotoxins and the number of citations for a food item). Making this possible are the more than 1,660 works cited.

The foodstuffs are listed in alphabetical order. Terms in brackets come next, followed by terms separated by a comma. To the extent possible, all types of cheeses, flakes, flours, fruits, grits, juices, kidneys, livers, meals, milks, nuts, oils, spices, and other food categories are grouped together to provide a more concise and revealing overview of the mycotoxins involved in the corresponding foodstuffs.

In some cases, the country of detection of a sample is not necessarily the country of the sample's origin, but information was not available about the country of origin of these samples in the original literature. This ambiguity is indicated by the term "imported" after the country of investigation. The corresponding years for entries are added to show the date when the samples were taken.

Although some substances are not true mycotoxins, for example, deoxynivalenol-3-glucoside, zearalenone-4-glucoside, zearalenone-4-sulfate, they are still listed. Also, conversion products used during food processing, for example hydrolyzed fumonisin B₁ (HFB₁), are identified.

In part, the results of mycotoxin contamination, for example, in kidney, liver, milk, and various kinds of milk products also appear in the book *Mycotoxins and their Metabolites in Humans and Animals*.

The chief publications considered are in English. Articles in other languages were chosen only if comprehensive summaries or tables listing detailed results were given in English. In addition, with a few exceptions, only articles that unequivocally describe the mycotoxin contamination of foodstuffs. Finally, only the most cited publications that satisfied the aforementioned requirements were considered for the book.

Publications containing data about mycotoxins due to artificial contamination (infected not naturally but through direct inoculation with molds) were not considered.

Overall, the second edition of *Mycotoxins in Foodstuffs*, contributes much needed information and transparency about human food sources. This fundamental book is written for scientists and researchers interested in the contamination of food and is especially suitable for those working in food microbiology, food technology, and the food industry (e.g., food producers, food traders), as well as ministries, offices, and departments of farming and environmental regulation at national and international levels, bureaus, associations, agricultural bodies, mycologists, mycotoxicologists, biologists, chemists, supervisors in food quality control, lawyers and experts in food law, students of the respective fields, and other interested groups.

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Abbreviations

3-AcDON	3-Acetyldeoxynivalenol
15-AcDON	15-Acetyldeoxynivalenol
3,15-DiAcDON	3,15-Diacetyldeoxynivalenol
ACUMI	Acuminatopyrone
ADONS	3-Acetyldeoxynivalenol + 15-acetyldeoxynivalenol
AFB ₁	Aflatoxin B ₁
AFB ₂	Aflatoxin B ₂
AFG ₁	Aflatoxin G ₁
AFG ₂	Aflatoxin G ₂
AFL	Aflatoxicol
AF/AFS	Aflatoxin/Aflatoxins
ALT	Altenuene
AME	Alternariol methyl ether
AOH	Alternariol
AURO	Aurofusarin
BEA	Beauvericin
BEN	Balkan endemic nephropathy
BGY	Bright greenish yellow
CHAE	Chaetoglobosin A
CHLAM	Chlamydosporols
CIT	Citrinin
con	Control
conc	Concentration
CPA	Cyclopiazonic acid
CS ₂	Carbon disulfide
CTV	Citreoviridin
DAS	Diacetoxyscirpenol
DL	Detection limit
DON	Deoxynivalenol
DON3G	Deoxynivalenol-3-glucoside
DPDON	Deepoxydeoxynivalenol

EC	Esophageal cancer
EN	Endemic nephropathy
ENS	Enniatins
ENA	Enniatin A
ENA ₁	Enniatin A ₁
ENB	Enniatin B
ENB ₁	Enniatin B ₁
ERC	Ergocornine
ERCR	Ergocristine
α-ERC	α-Ergocryptine
ERM	Ergometrine
ERS	Ergosine
ERT	Ergotamine
FB ₁	Fumonisin B ₁
FB ₂	Fumonisin B ₂
FB ₃	Fumonisin B ₃
<i>epi</i> -FB ₃	<i>3-epi</i> -Fumonisin B ₃
FB ₄	Fumonisin B ₄
FB ₅	Fumonisin B ₅
FBS	Fumonisinis
FP	Fusaproliferin
FUS-C	Fusarin C
FUS-X	Fusarenon-X
GLI	Glitoxin
HBF ₁	Hydrolyzed fumonisin B ₁
HEC	Human esophageal cancer
HT-2	HT-2 toxin
KA	Kojic acid
LOD	Limit of detection
LOQ	Limit of quantification
MA	Mycophenolic acid
MAS	Monoacetoxyscirpenol
MON	Moniliformin
nc	No comment
ncac	No comment about consumption
nd	Not detected
NEO	Neosolaniol
NIV	Nivalenol
nq	Not quantified
nsi	Not sieved

OTA	Ochratoxin A
OTB	Ochratoxin B
PA	Patulin
PEA	Penitrem A
PHFB ₁	Partially hydrolyzed fumonisin B ₁
PHFB ₂	Partially hydrolyzed fumonisin B ₂
po	Positive
pr	Present
sa	Samples
STG	Sterigmatocystin
TA	Tenuazonic acid
tr	Traces
T-2	T-2 toxin
T-2TET	T-2 tetraol
T-2TRI	T-2 triol
VER	Verruculogen
ZEA	Zearalenone
ZEAA	Zearalanone
ZEAOL	Zearalenol
ZEA4G	Zearalenone-4-glucoside
ZEA4S	Zearalenone-4-sulfate
α-ZEAOL	α-Zearalanol
α-ZEL	α-Zearalenol
α-ZEL4G	α-Zearalenol-4-glucoside
β-ZEAOL	β-Zearalanol
β-ZEL	β-Zearalenol
β-ZEL4G	β-Zearalenol-4-glucoside

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Acha see Millet

Alcoholic drink see Drink (alcoholic)

Almond paste see Marzipan
(almond paste)

Almonds see Nut (almonds)

Amaranth may contain the following mycotoxins:

Fusarium Toxins

ZEAREALENONE

incidence: 2/2, conc. range: 420–1,980 µg/kg, Ø conc.: 1,200 µg/kg, sample year: 1990, country: Argentina⁴³⁴

Ammi see Spices (ammi)

Angkak (red mold rice) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 4/4, conc. range: 42–86 µg/kg, sample year: unknown, country: Germany⁷¹⁵

Apple see Fruit (apple)

Apple and fruit vinegar see Vinegar

Apple cider may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/2, conc.: <LOQ, sample year: unknown, country: Portugal²⁵

incidence: 2/8*, conc. range: 5–10 µg/l, Ø conc.: 7.5 µg/kg, sample year: 1996–1998, country: South Africa²²², *alcoholic apple ciders

incidence: 2/5, conc. range: tr (1 sa), LOQ–25 µg/l (1 sa), sample year: 2001, country: Belgium⁶⁷⁷

incidence: 1/2, conc.: 6.1 µg/l, sample year: 2001, country: Belgium⁶⁷⁷, sa from France, Germany, and Switzerland

incidence: 5/5*, conc. range: 244–3,993 µg/kg, Ø conc.: 1,902 µg/kg, sample year: unknown, country: USA⁷¹¹, *pasteurized apple cider

incidence: 9*/100, conc. range: ≤45,000 µg/l, sample year: unknown, country: USA⁸⁴⁴, *5 organic apple ciders contained ≤45,000 µg/l, 4 conventional ones contained ≤25,000 µg/l

incidence: 55/324*, conc. range: 4.8–329.8 µg/l, sample year: 2002–2004, country: USA¹¹³⁰, *food safety control measures: none

incidence: 27/95*, conc. range: 4.6–467.4 µg/l, sample year: 2002–2004, country: USA¹¹³⁰, *food safety control measures: thermal pasteurization

incidence: 10/74*, conc. range: 5.5–59.1 µg/l, sample year: 2002–2004, country: USA¹¹³⁰, *food safety control measures: UV light radiation

Apple flavor may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 3/14, conc.: 6–1,770 µg/kg, Ø conc.: 607 µg/kg, sample year: 1976, country: Finland⁷⁰⁰, sa imported

Apple jam see Jam (apple)

Apple juice see Juice (apple)

Apple juice concentrate see Juice (apple, concentrate)

Apple products see Product (apple products)

Apple pulp see Pulp (apple pulp)

Apple puree see Puree

Apple rings may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 2/8* **, conc. range: ~10 µg/kg, sample year: unknown, country: South Africa¹¹⁹⁶, *dried apple rings, **industry sa

Apple-acerola juice see Juice (apple-acerola juice)

Apricot see Fruit, dried

Areca nut see Betel nut

Arepas may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 2/6, conc. range: 44–61 µg/kg, Ø conc.: 53 µg/kg, sample year: 1998, country: Colombia⁶⁷²

FUMONISIN B₂

incidence: 3/6, conc. range: 39–93 µg/kg, Ø conc.: 60 µg/kg, sample year: 1998, country: Colombia⁶⁷²

Arepas are corn cakes made from pre-cooked corn flour, water, and salt and cooked on a griddle.

Aromatic herb see Medicinal plant

Asparagus may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 2/25, conc. range: 460 µg*/kg, 7,400 µg**/kg, sample year: unknown, country: Italy³⁷⁶, *stem, **crown (2/4 sa co-contaminated with FB₁ and FB₂)
incidence: 9*/20, conc. range: 0.5–5.6 µg/kg, Ø conc.: 2.83 µg/kg, sample year: 2002, country: Poland/Germany⁸⁵⁸, sa from

Poland, *base of asparagus spears (5 sa co-contaminated with FB₁ and MON, 4 sa contaminated solely with FB₁)

incidence: 4*/20, conc. range: tr–2.1 µg/kg, sample year: 2002, country: Poland/Germany⁸⁵⁸, sa from Poland, *centre of asparagus spears (4 sa co-contaminated with FB₁ and MON)

incidence: 3*/20, conc. range: 0.5–0.9 µg/kg, Ø conc.: 0.73 µg/kg, sample year: 2002, country: Poland/Germany⁸⁵⁸, sa from Poland, *top of asparagus spears (3 sa co-contaminated with FB₁ and MON)

incidence: 13*/19, conc. range: 0.6–3.8 µg/kg, Ø conc.: 1.57 µg/kg, sample year: 2003, country: Poland/Germany⁸⁵⁸, sa from Poland, *base of asparagus spears (8 sa co-contaminated with FB₁ and MON, 5 sa contaminated solely with FB₁)

incidence: 15*/19, conc. range: tr–4.9 µg/kg, sample year: 2003, country: Poland/Germany⁸⁵⁸, sa from Poland, *top of asparagus spears (12 sa co-contaminated with FB₁ and MON, 3 sa contaminated solely with FB₁)

incidence: 2/20, conc. range: 2.6–2.8 µg/kg, Ø conc.: 2.7 µg/kg, sample year: 2007, country: Japan⁹⁰⁰

incidence: 9/10*, conc. range: 36.4–366.5 µg/kg**, Ø conc.: 178.4 µg/kg**, sample year: 2000, country: Germany¹³⁹⁶, *asparagus spears damaged by rot and growth depression, **data of subsamples A

incidence: 9/10*, conc. range: 43.2–4,513.7 µg/kg**, Ø conc.: 1,223.0 µg/kg**, sample year: 2000, country: Germany¹³⁹⁶, *asparagus spears damaged by rot and growth depression, **data of subsamples B

incidence: 24/30*, conc. range: 24–670 µg/kg**, Ø conc.: 148.5 µg/kg**, sample year: 2004, country: China¹⁶¹¹, *healthy asparagus spears (24 sa co-contaminated with FB₁ and FB₂)

FUMONISIN B₂

incidence: 2/25, conc. range: 60 µg*/kg, 830 µg**/kg, sample year: unknown, country: Italy³⁷⁶, *stem, **crown (2/4 sa co-contaminated with FB₁ and FB₂)

incidence: 2/20, conc. range: 2.5 µg/kg, Ø conc.: 2.5 µg/kg, sample year: unknown, country: Japan⁹⁰⁰

incidence: 24/30*, conc. range: 17–138 µg/kg**, Ø conc.: 43.9 µg/kg**, sample year: 2004, country: China¹⁶¹¹, *healthy asparagus spears (24 sa co-contaminated with FB₁ and FB₂)

MONILIFORMIN

incidence: 12*/20, conc. range: tr–1,350 µg/kg, sample year: 2002, country: Poland/Germany⁸⁵⁸, sa from Poland, *base of asparagus spears (5 sa co-contaminated with FB₁ and MON, 7 sa contaminated solely with MON)

incidence: 8*/19, conc. range: 70–290 µg/kg, Ø conc.: 138.75 µg/kg, sample year: 2003, country: Poland/Germany⁸⁵⁸, sa from Poland, *base of asparagus spears (8 sa co-contaminated with FB₁ and MON)

incidence: 13*/19, conc. range: tr–360 µg/kg, sample year: 2003, country: Poland/Germany⁸⁵⁸, sa from Poland, *top of asparagus spears (12 sa co-contaminated with FB₁ and MON, 1 sa contaminated solely with MON)

Baby cereals see Food (baby food)

Baby food see Food (baby food) and Powder (milk powder)

Baguette see Bread

Bakery products see Product (bakery products)

Balsamico see Vinegar

Barley may contain the following mycotoxins:

Alternaria Toxins**ALTENUENE**

incidence: 1/10, conc.: 700 µg/kg, sample year: unknown, country: Egypt²⁹¹

ALTERNARIOL

incidence: 1/4*, conc.: 130 µg/kg, sample year: 2008, country: Estonia²⁷⁶, *ncac

ALTERNARIOL METHYL ETHER

incidence: 4/10, Ø conc.: 300 µg/kg, sample year: unknown, country: Egypt²⁹¹

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 20/20, conc. range: <LOQ (14 sa), >LOQ (5 sa), 0.185 µg/kg (1 sa), sample year: 2007, country: Spain²⁶

incidence: 10/64, conc. range: ≤8 µg/kg, sample year: unknown, country: USSR¹⁹¹, sa imported

incidence: 17/130, conc. range: ≤2.5 µg/kg, sample year: unknown, country: USSR¹⁹¹

incidence: 3/376*, conc. range: ≤2,000 µg/kg, sample year: unknown, country: UK⁷⁶¹, *ncac

incidence: 13/115, conc. range: tr (5 sa), 1 to <5 µg/kg (4 sa), 5 to <10 µg/kg (2 sa), 10 to ≤11.7 µg/kg (2 sa), Ø conc.: 3.8 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 13/105* **, conc. range: 0.017–0.61 µg/kg, Ø conc.: 0.10 µg/kg, sample year: 2008–2010, country: Spain⁹³⁵, *ncac, **stored barley (43 sa of winter and 62 of spring barley) (5 sa co-contaminated with AFB₁ and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA; no further information available)

incidence: 2/24, conc. range: 0.4–0.5 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 1/21*, conc.: 7.2 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 5/20*, conc. range: <LOQ, sample year: unknown, country: Belgium/Russia/Korea¹⁵¹¹, *ncac

incidence: 44/44*, conc. range: ≤0.33 µg/kg, Ø conc.: 0.11 µg/kg, sample year: 2007, country: Spain¹⁵¹⁷, *for food and feed

incidence: 68/68*, conc. range: ≤0.34 µg/kg, Ø conc.: 0.14 µg/kg, sample year: 2008, country: Spain¹⁵¹⁷, *for food and feed

incidence: 13/13* **, conc. range: 0.34 µg/kg, Ø conc.: 0.12 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **conventional

incidence: 11/11* **, conc. range: 0.22 µg/kg, Ø conc.: 0.13 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **organic

incidence: 1/15, conc.: 0.58 µg/kg, sample year: unknown, country: Malaysia¹⁶²⁵, sa from Thailand

AFLATOXIN B₂

incidence: ?/20, conc. range: ≤0.042 µg/kg, sample year: 2007, country: Spain²⁶

incidence: 3/105* **, conc. range: 0.017–0.06 µg/kg, Ø conc.: 0.031 µg/kg, sample year: 2008–2010, country: Spain⁹³⁵, *ncac, **stored barley (43 sa of winter and 62 of spring barley) (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA; no further information available)

incidence: 2/24, conc. range: 0.1–0.2 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 5/44* **, conc. range: ≤0.04 µg/kg, Ø conc.: 0.01 µg/kg, sample year: 2007, country: Spain¹⁵¹⁷, *for food and feed

incidence: 15/68*, conc. range: ≤0.02 µg/kg, sample year: 2008, country: Spain¹⁵¹⁷, *for food and feed

incidence: 3/13*, conc. range: pr, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **conventional

incidence: 1/11* **, conc.: 0.09 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **organic

AFLATOXIN G₁

incidence: 5/105* **, conc. range: 0.025–0.26 µg/kg, Ø conc.: 0.093 µg/kg, sample year: 2008–2010, country: Spain⁹³⁵, *ncac, **stored barley (43 sa of winter and 62 of spring barley) (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA; no further information available)

incidence: 2/24, conc. range: <LOQ–0.1 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 3/44*, conc. range: ≤0.06 µg/kg, Ø conc.: 0.05 µg/kg, sample year: 2007, country: Spain¹⁵¹⁷, *for food and feed

incidence: 3/68*, conc. range: ≤0.61 µg/kg, Ø conc.: 0.22 µg/kg, sample year: 2008, country: Spain¹⁵¹⁷, *for food and feed

incidence: 2/13* **, conc. range: 0.02–0.04 µg/kg, Ø conc.: 0.03 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **conventional

incidence: 0/11* **, conc. range: no contamination, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **organic

AFLATOXIN G₂

incidence: 3/105* **, conc. range: 0.025–0.05 µg/kg, Ø conc.: 0.022 µg/kg, sample year: 2008–2010, country: Spain⁹³⁵, *ncac, **stored barley (43 sa of winter and 62 of spring barley) (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA; no further information available)

incidence: 4/5, conc. range: 23.1–52.4 µg/kg, Ø conc.: 35.5 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia

incidence: 1/44*, conc.: 0.04 µg/kg, sample year: 2007, country: Spain¹⁵¹⁷, *for food and feed

incidence: 18/68*, conc. range: ≤ 0.10 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.02 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Spain¹⁵¹⁷, *for food and feed

incidence: 2/13* **, \emptyset conc.: 0.01 $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **conventional

incidence: 3/11* **, \emptyset conc.: 0.01 $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Spain¹⁵¹⁷, *for food and feed, **organic

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 4/11, conc. range: 0.1 – 2.86 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹¹⁵

incidence: 13/137*, conc. range: 2 – 20 $\mu\text{g}/\text{kg}$ (7 sa), >20 $\mu\text{g}/\text{kg}$ (3 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *barley and malt

incidence: 5/10, conc. range: 0.26 – 2.59 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

STERIGMATOCYSTIN

incidence: 2/10, conc. range: 0.5 – 25 $\mu\text{g}/\text{kg}$, sample year: 2006, country: Latvia⁸¹

incidence: 11/25, conc. range: 0.5 – 25 $\mu\text{g}/\text{kg}$ (2 sa), 25 – 200 $\mu\text{g}/\text{kg}$ (9 sa), sample year: 2007, country: Latvia⁸¹

incidence: 2/4* **, conc. range: tr, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 15/27, conc. range: 53.24 – 100.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 64.4 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁷²¹

incidence: 4/269*, conc. range: 30 – 480 $\mu\text{g}/\text{kg}$, \emptyset conc.: 183 $\mu\text{g}/\text{kg}$, sample year: 1976, country: Sweden⁷⁷¹, *ncac

incidence: 4/4* **, conc. range: tr– $1,600$ $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

incidence: 1/1*, conc.: 71 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁸⁰⁸, *ncac (1 sa co-contaminated with CIT and OTA)

incidence: 2/3*, conc.: 1.82 – 93.64 $\mu\text{g}/\text{kg}$, \emptyset conc.: 47.73 $\mu\text{g}/\text{kg}$, sample year: 2006, country: Czech Republic/France¹³⁴⁰, sa from Czech Republic, *malting barley (1 sa co-contaminated with CIT and OTA, 1 sa contaminated solely with CIT)

incidence: 1/1* **, conc.: <LOQ, sample year: 2008, country: Czech Republic/France¹³⁴⁰, sa from Czech Republic, *naked barley, **organic (1 sa co-contaminated with CIT and OTA)

OCHRATOXIN A

incidence: 10/20, conc. range: <LOQ (9 sa), 0.157 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 2007, country: Spain²⁶

incidence: 41/103, conc. range: 11 – 940 $\mu\text{g}/\text{kg}$, \emptyset conc.: 96 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Tunisia¹⁰²

incidence: 1/11, conc.: 0.03 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹¹⁵

incidence: 21/40*, conc. range: 3 – 934 $\mu\text{g}/\text{kg}$, \emptyset conc.: 119.3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sweden²³⁸, *ncac (19 sa co-contaminated with DON and OTA, 2 sa contaminated solely with OTA)

incidence: 5/5*, conc. range: 300 – $1,670$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 994 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Poland⁵⁸⁵, *ncac

incidence: 5/5* **, conc. range: 50 – 654 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Poland⁵⁸⁵, *ncac, **pearled barley

incidence: 1/26* **, conc.: 0.3 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Poland⁵⁸⁷, *ncac, **conventional

incidence: 3/40* **, conc. range: 6.7 – 57.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 25.7 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Poland⁵⁸⁷, *ncac, **organic

incidence: 2/36* **, conc. range: 1.20 – 9.70 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5.5 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Poland⁵⁸⁸, *ncac, **conventional

incidence: 2/17* **, conc. range: 1.43 – 35.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18.4 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Poland⁵⁸⁸, *ncac, **organic

- incidence: 17/32*, conc. range: 1–5 µg/kg (7 sa), 5–20 µg/kg (8 sa), >20 µg/kg (2 sa), sample year: unknown, country: Czechoslovakia⁵⁹⁵, *ncac
- incidence: 9/89* **, conc. range: 0.02–0.15 µg/kg, sample year: 1996, country: Germany⁵⁹⁶, *malting barley, **after harvest
- incidence: 7/99* **, conc. range: 0.02–0.91 µg/kg, sample year: 1996, country: Germany⁵⁹⁶, *malting barley, **after storage
- incidence: 5/22, conc. range: 0.6–0.9 µg/kg, Ø conc.: 0.8 µg/kg, sample year: 2003, country: Korea⁵⁹⁹
- incidence: 26/29, conc. range: 0.53–12 µg/kg, sample year: 2002, country: Turkey⁶⁰⁸
- incidence: 3/43* **, conc. range: 15.8–24.3 µg/kg, Ø conc.: 20.2 µg/kg, sample year: unknown, country: Denmark⁶²², *ncac, **barley and oats
- incidence: 11/41*, conc. range: 0.05–4.9 µg/kg (8 sa), 5–25 µg/kg (3 sa, maximum: 14 µg/kg), sample year: 1986–1992, country: Denmark⁶²⁵, *conventional
- incidence: 6/20*, conc. range: 0.05–4.9 µg/kg (4 sa), 5–25 µg/kg (2 sa, maximum: 13 µg/kg), sample year: 1986–1992, country: Denmark⁶²⁵, *ecological
- incidence: 1/9*, conc.: 5 µg/kg, sample year: 1971–1975, country: Denmark/Yugoslavia⁶²⁹, sa from Yugoslavia, *EN area
- incidence: 21/21*, conc. range: 0.1–8,652 µg/kg, sample year: unknown, country: Tunisia/France⁶³⁴, sa from Tunisia, *barley and derived food
- incidence: 9/52, conc. range: 1–5 µg/kg (7 sa), >10 µg/kg (2 sa, maximum: 45.0 µg/kg), sample year: 1990, country: UK⁶³⁶, sa from UK and different countries?
- incidence: 12/47*, conc. range: ≤9.2 µg/kg, Ø conc.: 1.7 µg/kg, sample year: 1997/1998, country: UK⁶³⁷, *barley used for malting
- incidence: 4/45*, conc. range: 0.9–21.8 µg/kg, Ø conc.: 11.68 µg/kg, sample year: unknown, country: Italy⁶⁶⁵, *ncac
- incidence: 11/103, conc. range: 0.03–0.2 µg/kg (4 sa), 0.3–0.8 µg/kg (3 sa), 1.5–3.5 µg/kg (3 sa), 17.0 µg/kg (1 sa), Ø conc.: 2.5 µg/kg, sample year: unknown, country: USA⁶⁸⁵
- incidence: 19/22, conc. range: ≤0.495 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰
- incidence: 4/27, conc. range: 19.4–27.0 µg/kg, sample year: unknown, country: Egypt⁷²¹
- incidence: 17/200* **, conc. range: 1–5 µg/kg (14 sa), 5–10 µg/kg (1 sa), >10 µg/kg (2 sa, maximum: 33 µg/kg), sample year: 1993/1994, country: UK⁷³³, *ncac, **at harvest and stored
- incidence: 51/376*, conc. range: ≤5,000 µg/kg, sample year: unknown, country: UK⁷⁶¹, *ncac
- incidence: 17/269*, conc. range: tr–20 µg/kg, sample year: 1976, country: Sweden⁷⁷¹, *ncac
- incidence: 4/30*, conc. range: 0.3–0.9 µg/kg (2 sa), 2.5–4.9 µg/kg (1 sa), 13.8 µg/kg** (1 sa), sample year: 2000, country: UK⁷⁷⁴, *malting-barley, **unacceptable quality for malting
- incidence: 4/4* **, conc. range: 75–11,000 µg/kg, Ø conc.: 3,038 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy
- incidence: 1/1*, conc.: 68 µg/kg, sample year: unknown, country: UK⁸⁰⁸, *ncac (1 sa co-contaminated with CIT and OTA)
- incidence: 11/20, conc. range: ≤0.80 µg/kg, Ø conc.: 0.17 µg/kg, sample year: unknown, country: Morocco⁸⁶⁶
- incidence: 1/8, conc.: 5.86 µg/kg, sample year: 2008/2009, country: Jordan⁹⁰⁸
- incidence: 27/103, conc. range: 1 to <5 µg/kg (11 sa), 5 to <50 µg/kg (14 sa), 50 to <100 µg/kg (1 sa), 164 µg/kg (1 sa), Ø conc.: 17.2 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia
- incidence: 21/105* **, conc. range: 0.05–1.6 µg/kg, Ø conc.: 0.47 µg/kg, sample

year: 2008–2010, country: Spain⁹³⁵, *ncac, **stored barley (43 sa of winter and 62 of spring barley), (5 sa co-contaminated with AFB₁ and OTA; no further information available)

incidence: 10/24*, conc. range: 0.19–1.5 µg/kg, sample year: 2005/2006, country: Tunisia⁹³⁹, *barley and derived products

incidence: 10/50*, conc. range: LOD/LOQ–4.9 µg/kg (8 sa), 5.0–9.9 µg/kg (1 sa), 13.7 µg/kg (1 sa), sample year: 1994, country: EU¹⁰³⁴, sa from UK, *stored barley

incidence: 8/150*, conc. range: LOD/LOQ–4.9 µg/kg (6 sa), >25–33.4 µg/kg (2 sa), sample year: 1994, country: EU¹⁰³⁴, sa from UK, *barley at harvest

incidence: 1/13*, conc.: 2 µg/kg, sample year: 1993, country: EU¹⁰³⁴, sa from France, *barley and wheat

incidence: 4/5*, conc. range: 0.42–0.91 µg/kg, Ø conc.: 0.575 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (4 sa co-contaminated with DON, NIV, and OTA)

incidence: 34/39, conc. range: 2.8–19.6 µg/kg, Ø conc.: 6.88 µg/kg, sample year: unknown, country: Korea¹²¹⁷, *ncac

incidence: 14/85*, conc. range: LOD–0.9 µg/kg (7 sa), 1.0–4.9 µg/kg (7 sa), maximum 3.9 µg/kg, sample year: unknown, country: Italy¹²⁹⁰, *ncac

incidence: 14/160, conc. range: 2–30 µg/kg (13 sa), 31–90 µg/kg (1 sa), sample year: 1972–1978, country: Yugoslavia/Sweden/USA¹³³⁹, sa from Yugoslavia

incidence: 1/1* **, conc.: 0.46 µg/kg, sample year: 2008, country: Czech Republic/France¹³⁴⁰, sa from Czech Republic, *naked barley, **organic (1 sa co-contaminated with CIT and OTA)

incidence: 1/3*, conc.: 44.74 µg/kg, sample year: 2006, country: Czech Republic/France¹³⁴⁰, sa from Czech Republic, *malting barley (1 sa co-contaminated with CIT and OTA)

incidence: 28/44*, conc. range: ≤0.06 µg/kg, Ø conc.: 0.04 µg/kg, sample year: 2007, country: Spain¹⁵¹⁷, *for food and feed

incidence: 36/68*, conc. range: ≤0.17 µg/kg, Ø conc.: 0.05 µg/kg, sample year: 2008, country: Spain¹⁵¹⁷, *for food and feed

incidence: 5/13* **, conc. range: ≤0.11 µg/kg, Ø conc.: 0.05 µg/kg, sample year: 2007, country: Spain¹⁵¹⁷, *for food and feed, **conventional

incidence: 7/11* **, conc. range: ≤3.53 µg/kg, Ø conc.: 0.57 µg/kg, sample year: 2008, country: Spain¹⁵¹⁷, *for food and feed, **organic

incidence: 1/10, conc.: 0.03 µg/kg, sample year: unknown, country: China¹⁵⁵⁴

incidence: 3/10, conc. range: 0.18–2.84 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

OCHRATOXIN B

incidence: 7/89* **, conc. range: 0.03–0.05 µg/kg, sample year: 1996, country: Germany⁵⁹⁶, *malting barley, **after harvest

incidence: 4/99* **, conc. range: 0.03–0.64 µg/kg, sample year: 1996, country: Germany⁵⁹⁶, *malting barley, **after storage

VIOMELLEIN

incidence: 3/4* **, conc. range: tr–600 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

VIOXANTHIN

incidence: 3/4* **, conc. range: 10–90 µg/kg, Ø conc.: 40 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

XANTHOMEGNIN

incidence: 3/4* **, conc. range: tr–450 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

Fusarium Toxins

BEAUVERICIN

incidence: 4/8*, conc. range: ≤5,000 µg/kg, Ø conc.: 3,000 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 14/14*, conc. range: tr–19 µg/kg, sample year: 2001, country: Finland⁴⁵⁹, *ncac (11 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁)

incidence: 8/8*, conc. range: tr–13 µg/kg, sample year: 2002, country: Finland⁴⁵⁹, *ncac (6 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 2/4, conc. range: ≤6,940 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

DEOXYNIVALENOL

incidence: 12/29*, conc. range: ≤163 µg/kg, Ø conc.: 49 µg/kg, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 5/7, conc. range: 5–100 µg/kg, sample year: 1998, country: Finland²¹⁹ (3 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with DON and ZEA; no further information available)

incidence: 28/40*, conc. range: 5–857 µg/kg, Ø conc.: 79.3 µg/kg, sample year: unknown, country: Sweden²³⁸, *ncac (19 sa co-contaminated with DON and OTA, 9 sa contaminated solely with DON)

incidence: 1/1, conc.: 56 µg/kg, sample year: 2004, country: Germany²⁴⁴

incidence: 4/25, conc. range: 50–380 µg/kg, sample year: 1989, country: Russia³¹²

incidence: 6/44, conc. range: 50–780 µg/kg, sample year: 1992, country: Russia³¹²

incidence: 5/73, conc. range: 170–910 µg/kg, sample year: 1993, country: Russia³¹²

incidence: 1/166, conc.: 200 µg/kg, sample year: 1994, country: Russia³¹²

incidence: 2/55, conc. range: 150–180 µg/kg, Ø conc.: 165 µg/kg, sample year: 1997, country: Russia³¹²

incidence: 1/56, conc.: 280 µg/kg, sample year: 1998, country: Russia³¹²

incidence: 1/57, conc.: 280 µg/kg, sample year: 2000, country: Russia³¹²

incidence: 8/93*, conc. range: 1,470–4,000 µg/kg, Ø conc.: 2,552.9 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 2/2, conc. range: 132–3,521 µg/kg, Ø conc.: 1,826.5 µg/kg, sample year: 1991, country: China³⁴² (1 sa co-contaminated with DON, NIV and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 77/77, conc. range: 100–15,100 µg/kg, sample year: 1993, country: Canada/Germany⁴²⁵, sa from Canada, *ncac

incidence: 40/40, conc. range: 30–15,790 µg/kg, sample year: 1994, country: Canada/Germany⁴²⁵, sa from Canada, *ncac

incidence: 27/30, conc. range: 10–202 µg/kg, Ø conc.: 78 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 3/3, conc. range: 27–46 µg/kg, Ø conc.: 38 µg/kg, sample year: 1987, country: Finland⁴⁵⁵, sa from Canada and Sweden

incidence: 19/25*, conc. range: tr–40,400 µg/kg, sample year: unknown, country: Japan⁴⁶¹, *ncac

incidence: 35/39, conc. range: 25–1,051 µg/kg, Ø conc.: 170 µg/kg, sample year: 1990, country: Korea/Japan⁴⁶², sa from Korea

incidence: 198/309*, conc. range: 30–11,740 µg/kg, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac

incidence: 4/4*, conc. range: 140–4,500 µg/kg, Ø conc.: 1,520 µg/kg, sample year: autumn 1993, country: Norway/Germany⁴⁶⁵, sa from Norway, *ncac

incidence: 3/7*, conc. range: 45–93 µg/kg, Ø conc.: 64.66 µg/kg, sample year: spring 1994, country: Norway/Germany⁴⁶⁵, sa from Norway, *ncac

incidence: 17/102*, conc. range: >20–1,440 µg/kg, Ø conc.: 155 µg/kg, sample

year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 26/28* **, conc. range: 4–508 µg/kg, Ø conc.: 126 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *ncac, **unpolished barley (19 sa co-contaminated with DON, NIV, and ZEA, 7 sa co-contaminated with DON and NIV)

incidence: 5/6* **, conc. range: 11–34 µg/kg, Ø conc.: 25.4 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *for food and feed, **polished barley (4 sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

incidence: 31/31* **, conc. range: 12–901 µg/kg, Ø conc.: 124 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **unhusked barley (2 sa co-contaminated with DON and NIV, 29 sa co-contaminated with DON, NIV, and ZEA)

incidence: 5/6* **, conc. range: 3–65 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **husked barley (3 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 12/20*, conc. range: tr–30 µg/kg, sample year: 1984 and unknown, country: Netherlands⁵⁰⁰, sa from Netherlands, Denmark, France, and unknown origin, *ncac

incidence: 5/5* **, conc. range: 26–223 µg/kg, Ø conc.: 108.8 µg/kg, sample year: 1987, country: Korea⁵⁰⁷, *ncac, **husked barley (1 sa co-contaminated with DON, NIV, and ZEA, 4 sa co-contaminated with DON and NIV)

incidence: 17/18* **, conc. range: 8–495 µg/kg, Ø conc.: 115.9 µg/kg, sample year: 1987, country: Korea⁵⁰⁷, *ncac, **naked barley (8 sa co-contaminated with DON, NIV, and ZEA, 9 sa co-contaminated with DON and NIV)

incidence: 4/14* **, conc. range: 25–85 µg/kg, Ø conc.: 59 µg/kg, sample year: 1989, country: Korea⁵⁰⁷, *ncac, **husked barley (1 sa co-contaminated with DON, NIV, and ZEA, 2

sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

incidence: 9/20* **, conc. range: 10–161 µg/kg, Ø conc.: 52.9 µg/kg, sample year: 1989, country: Korea⁵⁰⁷, *ncac, **naked barley (5 sa co-contaminated with DON, NIV, and ZEA, 3 sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

incidence: 9/10*, conc. range: 29–677 µg/kg, Ø conc.: 262.9 µg/kg, sample year: 1990, country: Korea⁵⁰⁸, *husked barley (4 sa co-contaminated with DON, NIV, and ZEA, 5 sa co-contaminated with DON and NIV)

incidence: 24/27*, conc. range: 38–645 µg/kg, Ø conc.: 212.5 µg/kg, sample year: 1990, country: Korea⁵⁰⁸, *naked barley (6 sa co-contaminated with DON, NIV, and ZEA, 18 sa co-contaminated with DON and NIV)

incidence: 3/11*, conc. range: 168–506 µg/kg, Ø conc.: 297 µg/kg, sample year: 1989, country: Korea⁵⁰⁹, *home-grown barley (1 sa co-contaminated with DON and NIV, 2 sa contaminated solely with DON)

incidence: 20/30*, conc. range: 5–361 µg/kg, Ø conc.: 106 µg/kg, sample year: 1992, country: Korea⁵¹⁴, *ncac (1 sa co-contaminated with DON, 3-AcDON, and NIV, 19 sa co-contaminated with DON and NIV)

incidence: 3/19, conc. range: 110–290 µg/kg, Ø conc.: 220 µg/kg, sample year: 1990, country: Canada⁵²¹

incidence: 1/10, conc.: 130 µg/kg, sample year: 1991, country: Canada⁵²¹

incidence: 2/10, conc. range: 200–320 µg/kg, Ø conc.: 260 µg/kg, sample year: 1992, country: Canada⁵²¹

incidence: 5/6, conc. range: 140–1,670 µg/kg, Ø conc.: 550 µg/kg, sample year: 1993, country: Canada⁵²¹

incidence: 1/5, conc.: 90 µg/kg, sample year: 1994, country: Canada⁵²¹

incidence: 34/49*, conc. range: 6–2,139 µg/kg, Ø conc.: 165.6 µg/kg, sample year:

1984, country: Norway/Japan⁵²⁹, sa from Norway, *ncac
 incidence: 104/139*, \emptyset conc.: 149 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁵³⁰, *ncac
 incidence: 10/14*, conc. range: 3–50 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18 $\mu\text{g}/\text{kg}$, sample year: 1982–1985, country: Japan⁵³¹, sa from Japan and unknown origin, *polished pressed barley (1 sa co-contaminated with DON, NIV, and ZEA, 9 sa co-contaminated with DON and NIV)
 incidence: 1/1*, conc.: 48 $\mu\text{g}/\text{kg}$, sample year: 1982–1985, country: Japan⁵³¹, sa from unknown origin, *pearled barley (1 sa co-contaminated with DON, NIV, and ZEA)
 incidence: 2/2*, conc. range: 310–350 $\mu\text{g}/\text{kg}$, \emptyset conc.: 330 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁵³², *ncac
 incidence: 9?/10* **, conc. range: 3–23 $\mu\text{g}/\text{kg}$, \emptyset conc.: 11 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁵³², *ncac, **pressed barley
 incidence: 2/2* **, conc. range: 180–330 $\mu\text{g}/\text{kg}$, \emptyset conc.: 255 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁵³², *ncac, **naked barley (2 sa co-contaminated with DON and NIV)
 incidence: 5/8*, conc. range: 10–81 $\mu\text{g}/\text{kg}$, \emptyset conc.: 26.1 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³³, sa from Scotland, *ncac (3 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and ZEA)
 incidence: 5/6*, conc. range: 4–152 $\mu\text{g}/\text{kg}$, \emptyset conc.: 58 $\mu\text{g}/\text{kg}$, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (4 sa co-contaminated with DON, NIV, and ZEA, 1 sa co-contaminated with DON and ZEA)
 incidence: 18/20*, \emptyset conc.: 237 $\mu\text{g}/\text{kg}$, sample year: 1983, country: Japan⁵³⁸, sa from Argentina, *ncac
 incidence: 2/13*, \emptyset conc.: 190 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 2/5*, \emptyset conc.: 195 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Italy, *ncac
 incidence: 2/3*, \emptyset conc.: 19 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac
 incidence: 79/118, conc. range: $\leq 14,000$ $\mu\text{g}/\text{kg}$, sample year: 1993, country: USA⁵⁴⁴
 incidence: 29/29*, conc. range: $\leq 25,800$ $\mu\text{g}/\text{kg}$, sample year: 1993, country: USA⁵⁴⁴, *malting barley
 incidence: 1/7*, conc.: 390 $\mu\text{g}/\text{kg}$, sample year: 1985, country: Poland⁵⁴⁸, *ncac
 incidence: 7/7*, conc. range: 260–24,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 13,800 $\mu\text{g}/\text{kg}$, sample year: 1994, country: Germany/Canada⁵⁵¹, sa from Canada, *ncac (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, 3,15-DiAcDON, and ZEA, 1 sa co-contaminated with DON and 3,15-DiAcDON, 1 sa contaminated solely with DON)
 incidence: 1/1*, conc.: 46 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *conventional
 incidence: 6/7*, conc. range: 34–440 $\mu\text{g}/\text{kg}$, \emptyset conc.: 137 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from Germany and unknown origin, *organic (2 sa co-contaminated with DON and ZEA, 4 sa contaminated solely with DON)
 incidence: 71/94*, conc. range: 5–3,780 $\mu\text{g}/\text{kg}$, sample year: 1984–1994, country: Japan⁵⁷¹, *ncac (69 sa co-contaminated with DON and NIV, 2 sa contaminated with solely DON)
 incidence: 1/1*, conc.: 1,320 $\mu\text{g}/\text{kg}$, sample year: 1976, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)
 incidence: 2/2*, conc. range: 3,100–14,400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8,750 $\mu\text{g}/\text{kg}$, sample year: 1977, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 1 sa co-contaminated with DON and NIV)

incidence: 3/3*, conc. range: 418–634 µg/kg, Ø conc.: 500 µg/kg, sample year: 1989, country: Japan⁵⁷³, *ncac (3 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV)

incidence: 7/7*, conc. range: 86–6,120 µg/kg, Ø conc.: 1,708.6 µg/kg, sample year: 1990, country: Japan⁵⁷³, *ncac (2 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, and NIV, 1 sa co-contaminated with DON, FUS-X, and NIV)

incidence: 4/4*, conc. range: 752–70,500 µg/kg, Ø conc.: 33,728 µg/kg, sample year: 1991, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 2 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)

incidence: 8/17*, conc. range: 20–230 µg/kg, Ø conc.: 112 µg/kg, sample year: 1991, country: Japan⁶¹⁰, *ncac (7 sa co-contaminated with DON and NIV, 1 sa contaminated with solely DON)

incidence: 2/8, conc. range: 5–50 µg/kg, sample year: 1998?, country: Finland⁷⁶⁵

incidence: 23/30*, conc. range: 20–49 µg/kg (13 sa), 50–99 µg/kg (9 sa), 311 µg/kg (1 sa), sample year: 2000, country: UK⁷⁷⁴, *malting-barley

incidence: 4/5*, conc. range: ≤73 µg/kg, sample year: unknown, country: France⁷⁷⁶, *conventional

incidence: 3/5*, conc. range: ≤209 µg/kg, sample year: unknown, country: France⁷⁷⁶, *organic

incidence: 53/124*, conc. range: 80–500 µg/kg (36 sa), 500–1,000 µg/kg (6 sa), >1,000 µg/kg (11 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *barley and malt

incidence: 15/33*, conc. range: 200**–550 µg/kg, sample year: 2000, country: Czech Republic⁸⁹⁸, *sa from 7 cultivars, **LOQ

incidence: 12/32*, conc. range: 200**–3,770 µg/kg, sample year: 2001, country: Czech Republic⁸⁹⁸, *sa from 7 cultivars, **LOQ

incidence: 12/30*, conc. range: 200**–1,150 µg/kg, sample year: 2002, country: Czech Republic⁸⁹⁸, *sa from 5 cultivars, **LOQ

incidence: 5/71*, conc. range: 200**–250 µg/kg, sample year: 2003, country: Czech Republic⁸⁹⁸, *sa from 5 cultivars, **LOQ

incidence: 14/73*, conc. range: 200**–2,400 µg/kg, sample year: 2004, country: Czech Republic⁸⁹⁸, *sa from 6 cultivars, **LOQ

incidence: 39/112*, conc. range: 200**–3,310 µg/kg, sample year: 2005, country: Czech Republic⁸⁹⁸, *sa from 11 cultivars, **LOQ

incidence: 19/147*, conc. range: 200**–1,560 µg/kg, sample year: 2006, country: Czech Republic⁸⁹⁸, *sa from 8 cultivars, **LOQ

incidence: 7/20, conc. range: 40–110 µg/kg, Ø conc.: 70 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 1/4*, conc.: 140 µg/kg, sample year: 2005, country: Serbia⁹³⁷, *ncac

incidence: 38/70, conc. range: 3.7–36.8 µg/kg, Ø conc.: 17.4 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸

incidence: 254/446, conc. range: ≤1,416 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹ (1 sa co-contamination with DON, 3-AcDON and 15-AcDON; no further information available)

incidence: 5/8*, conc. range: ≥100–530 µg/kg, sample year: 2001, country: Slovakia/Poland¹⁰⁴⁷, sa from Slovakia, *ncac

incidence: 10/11*, conc. range: ≤ 224 $\mu\text{g}/\text{kg}$, sample year: 2007–2009, country: USA¹⁰⁵⁹, *infant cereals

incidence: 10/12*, conc. range: ≤ 66 $\mu\text{g}/\text{kg}$, \emptyset conc.: 34 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac

incidence: 32/32*, conc. range: 19.6–2,021.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 156.5 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Czech Republic¹¹²⁷, *ncac

incidence: 24/24*, conc. range: 8.4–170.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 37.3 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac (1 sa co-contaminated with DON, HT-2, NIV, and T-2, 4 sa co-contaminated with DON, HT-2, and NIV, 2 sa co-contaminated with DON, HT-2, and T-2, 14 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with DON and NIV, 2 sa contaminated solely with DON)

incidence: 30/100, conc. range: 500–2,100 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,088 $\mu\text{g}/\text{kg}$, sample year: 1996, country: Uruguay¹¹³⁷

incidence: 40/59, conc. range: 500–3,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,157 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Uruguay¹¹³⁷

incidence: 12/45, conc. range: 500–1,900 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,104 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Uruguay¹¹³⁷

incidence: 7/26, conc. range: 500–2,600 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,527 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Uruguay¹¹³⁷

incidence: 7/90, conc. range: 500–5,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,041 $\mu\text{g}/\text{kg}$, sample year: 2000, country: Uruguay¹¹³⁷

incidence: 25/25, conc. range: 500–10,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6,349 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Uruguay¹¹³⁷

incidence: 37/37, conc. range: 500–10,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,098 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Uruguay¹¹³⁷

incidence: 4/10, conc. range: $\leq 3,485$ $\mu\text{g}/\text{kg}$, sample year: unknown, country: China¹¹⁵²

incidence: 18/18, conc. range: 1,060–61,420 $\mu\text{g}/\text{kg}$ *, \emptyset conc.: 12,711 $\mu\text{g}/\text{kg}$ *,

sample year: 2001, 2005, country: China/USA¹¹⁸⁸, sa from USA, *determined by solvolysis with trifluoroacetic acid

incidence: 5/5*, conc. range: 10–40 $\mu\text{g}/\text{kg}$, \emptyset conc.: 22 $\mu\text{g}/\text{kg}$, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (4 sa co-contaminated with DON, NIV, and OTA, 1 sa co-contaminated with DON and NIV)

incidence: 33/36* **, conc. range: ≤ 170.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 42.1 $\mu\text{g}/\text{kg}$, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 37/40* **, conc. range: ≤ 62.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 13 $\mu\text{g}/\text{kg}$, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 34/36* **, conc. range: ≤ 181.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 42 $\mu\text{g}/\text{kg}$, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 19/36* **, conc. range: ≤ 61.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 32 $\mu\text{g}/\text{kg}$, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 12/20*, conc. range: ≥ 100 to $< 1,000$ $\mu\text{g}/\text{kg}$ (10 sa), $\geq 1,000$ –1,780 $\mu\text{g}/\text{kg}$ (2 sa), sample year: 2002, country: Korea¹²⁴⁷, *two-rowed malting barley

incidence: 10/12*, conc. range: ≥ 100 to $< 1,000$ $\mu\text{g}/\text{kg}$ (2 sa), $\geq 1,000$ –2,280 $\mu\text{g}/\text{kg}$ (8 sa), sample year: 2002, country: Korea¹²⁴⁷, *six-rowed husked barley

incidence: 10/20*, conc. range: ≥ 100 to $< 1,000$ $\mu\text{g}/\text{kg}$ (4 sa), $\geq 1,000$ –2,280 $\mu\text{g}/\text{kg}$ (6 sa), sample year: 2002, country: Korea¹²⁴⁷, *six-rowed hullless barley

incidence: 2/2*, \emptyset conc.: 350 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Korea¹²⁴⁷, *pearled transversally cut barley

incidence: 2/2*, \emptyset conc.: 340 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Korea¹²⁴⁷, *pearled barley

incidence: 2/2*, \emptyset conc.: 110 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Korea¹²⁴⁷, *pearled and pressed barley

incidence: 25/25*, conc. range: tr–198 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 28/30*, conc. range: tr–372 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 49/84, Ø conc.: 22 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³

incidence: 14/15* **, conc. range: 54–3,787 µg/kg, Ø conc.: 679.9 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (10 sa co-contaminated with DON, NIV, and ZEA, 4 sa co-contaminated with DON and NIV)

incidence: 15/15*, conc. range: 10–370 µg/kg, Ø conc.: 85 µg/kg, sample year: 1997, country: Poland¹³²⁴, *ncac (8 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, T-2TET, and ZEA, 2 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, and ZEA, 3 sa co-contaminated with DON, HT-2, NIV, T-2, T-2TET, and ZEA, 1 sa co-contaminated with DAS, DON, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and ZEA)

incidence: 4/5* **, conc. range: 4,800–22,500 µg/kg, Ø conc.: 11,600 µg/kg, sample year: 1993, country: USA¹³⁹³, *six-rowed malting barley, **please see also **Malt (barley)**, **Deoxynivalenol**, no¹³⁹³, as well as **Beer**, **Deoxynivalenol** no¹³⁹³. (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON and ZEA; no further information available)

incidence: 13/21*, conc. range: >1,750–4,000 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring barley, **conventional

incidence: 9/9* **, conc. range: 111.90–200.70 µg/kg, Ø conc.: 178.98 µg/kg, sample year: 2005, country: Lithuania/

Denmark¹⁴⁴², sa from Lithuania, *spring barley, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring barley, **conventional

incidence: 9/9* **, conc. range: 106.10–189.90 µg/kg, Ø conc.: 149.08 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring barley, **organic

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *winter barley, **conventional

incidence: 2/2* **, conc. range: 195.00–200.30 µg/kg, Ø conc.: 197.65 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter barley, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter barley, **conventional

incidence: 2/2* **, conc. range: 183.80–186.30 µg/kg, Ø conc.: 185.05 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter barley, **organic

incidence: 20/20, conc. range: 78–2,449 µg/kg, Ø conc.: 817.9 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, and HT-2, 3 sa co-contaminated with DON, HT-2, and T-2, 7 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with DON and T-2, 7 sa contaminated solely with DON)

incidence: 7/15* **, conc. range: 25.1–49.1 µg/kg, Ø conc.: 36.6 µg/kg, sample year: unknown, country: Spain/Czech Republic¹⁴⁸⁵, sa from Czech Republic, *ncac, **spring barley (2 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, HT-2, and T-2, 1 sa co-contaminated with DON, ENA, ENA₁,

ENB, ENB₁, and HT-2, 4 sa contaminated solely with DON)

incidence: 39/44*, conc. range: ≤119.9 µg/kg, Ø conc.: 21.7 µg/kg, sample year: 2007, country: Spain¹⁵¹⁵, *for food and feed

incidence: 67/68*, conc. range: ≤1,111.3 µg/kg, Ø conc.: 86.2 µg/kg, sample year: 2008, country: Spain¹⁵¹⁵, *for food and feed

incidence: 13/13* **, conc. range: ≤1,111.3 µg/kg, Ø conc.: 232.9 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **conventional

incidence: 11/11* **, conc. range: ≤89.1 µg/kg, Ø conc.: 31.7 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **organic

incidence: 21/29* **, conc. range: 3.9–112.3 µg/kg, Ø conc.: 34.43 µg/kg, sample year: 2008–2010, country: Spain¹⁵⁷⁷, *ncac, **spring barley (1 sa co-contaminated with DON, FB₁ + FB₂, HT2 + T2, and ZEA, 1 sa co-contaminated with DON, FB₁ + FB₂, NIV, and ZEA, 2 sa co-contaminated with DON, FB₁ + FB₂, and ZEA, 1 sa co-contaminated with DON, HT2 + T2, and NIV, 3 sa co-contaminated with DON, NIV, and ZEA, 3 sa co-contaminated with DON and FB₁ + FB₂, 1 sa co-contaminated with DON and HT2 + T2, 3 sa co-contaminated with DON and ZEA, 6 sa contaminated solely with DON)

incidence: 5/10, conc. range: 27.9–72.5 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

3-ACETYLDEOXYNIVALENOL

incidence: 24/40, conc. range: ≤350 µg/kg, sample year: 1994, country: Canada/Germany⁴²⁵, sa from Canada, *ncac

incidence: 10/30, conc. range: 24–96 µg/kg, Ø conc.: 46 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 7/39, conc. range: 13–168 µg/kg, Ø conc.: 65 µg/kg, sample year: 1990, country: Korea/Japan⁴⁶², sa from Korea

incidence: 1/30*, conc.: 7 µg/kg, country: Korea⁵¹⁴, *ncac (1 sa co-contaminated with DON, 3-AcDON, and NIV)

incidence: 5/7*, conc. range: 1,300–5,300 µg/kg, Ø conc.: 2,800 µg/kg, sample year: 1994, country: Germany/Canada⁵⁵¹, sa from Canada, *ncac (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, 3,15-DiAcDON, and ZEA)

incidence: 1/1*, conc.: 198 µg/kg, sample year: 1976, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)

incidence: 1/2*, conc.: 1,250 µg/kg, sample year: 1977, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)

incidence: 3/3*, conc. range: 24–93 µg/kg, Ø conc.: 67.3 µg/kg, sample year: 1989, country: Japan⁵⁷³, *ncac (3 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV)

incidence: 6/7*, conc. range: 10–437 µg/kg, Ø conc.: 188.7 µg/kg, sample year: 1990, country: Japan⁵⁷³, *ncac (2 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, and NIV)

incidence: 4/4*, conc. range: 170–18,700 µg/kg, Ø conc.: 7,520 µg/kg, sample year: 1991, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 2 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)

incidence: 1/446, conc.: 15 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹ (1 sa co-contamination with DON, 3-AcDON, and 15-AcDON)

incidence: 1/5*, conc.: 600 µg/kg, sample year: 1993, country: USA¹³⁹³, *six-rowed malting barley (1 sa

co-contamination with DON, 3-AcDON, 15-AcDON and ZEA)

incidence: 6/44*, conc. range: ≤ 1.7 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 1.0 $\mu\text{g}/\text{kg}$, sample year:
 2007, country: Spain¹⁵¹⁵, *for food
 and feed

incidence: 44/68*, conc. range: ≤ 20.1 $\mu\text{g}/$
 kg , \emptyset conc.: 3.7 $\mu\text{g}/\text{kg}$, sample year:
 2008, country: Spain¹⁵¹⁵, *for food
 and feed

incidence: 7/13* **, conc. range: ≤ 20.1 $\mu\text{g}/$
 kg , \emptyset conc.: 8.0 $\mu\text{g}/\text{kg}$, sample year:
 2007/2008, country: Spain¹⁵¹⁵, *for food
 and feed, **conventional

incidence: 5/11* **, conc. range: ≤ 6.7 $\mu\text{g}/$
 kg , \emptyset conc.: 3.0 $\mu\text{g}/\text{kg}$, sample year:
 2007/2008, country: Spain¹⁵¹⁵, *for food
 and feed, **organic

15-ACETYLDEOXYNIVALENOL

incidence: 24/77, conc. range: ≤ 400 $\mu\text{g}/$
 kg , sample year: 1993, country: Canada/
 Germany⁴²⁵, sa from Canada, *ncac

incidence: 39/40, conc. range: $\leq 1,240$ $\mu\text{g}/$
 kg , sample year: 1994, country: Canada/
 Germany⁴²⁵, sa from Canada, *ncac

incidence: 5/7*, conc. range: 400–2,400 $\mu\text{g}/$
 kg , \emptyset conc.: 1,300 $\mu\text{g}/\text{kg}$, sample year:
 1994, country: Germany/Canada⁵⁵¹, sa
 from Canada, *ncac (5 sa
 co-contaminated with DON, 3-AcDON,
 15-AcDON, 3,15-DiAcDON, and ZEA)

incidence: 2/7*, conc. range: 96–522 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 309 $\mu\text{g}/\text{kg}$, sample year: 1990,
 country: Japan⁵⁷³, *ncac (2 sa
 co-contaminated with DON, 3-AcDON,
 15-AcDON, FUS-X, and NIV)

incidence: 2/446, conc. range: ≤ 35 $\mu\text{g}/\text{kg}$,
 sample year: 2002–2005, country: UK⁹⁴⁹
 (1 sa co-contamination with DON,
 3-AcDON, and 15-AcDON; no further
 information available)

incidence: 1/5*, conc.: 2,100 $\mu\text{g}/\text{kg}$, sample
 year: 1993, country: USA¹³⁹³, *six-rowed
 malting barley (1 sa co-contamination
 with DON, 3-AcDON, 15-AcDON
 and ZEA)

incidence: 9/44*, conc. range: ≤ 3.5 $\mu\text{g}/\text{kg}$, \emptyset
 conc.: 2.4 $\mu\text{g}/\text{kg}$, sample year: 2007, country:
 Spain¹⁵¹⁵, *for food and feed

incidence: 55/68*, conc. range: ≤ 64.8 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 7.2 $\mu\text{g}/\text{kg}$, sample year: 2008,
 country: Spain¹⁵¹⁵, *for food and feed

incidence: 9/13* **, conc. range: ≤ 64.8 $\mu\text{g}/$
 kg , \emptyset conc.: 23.4 $\mu\text{g}/\text{kg}$, sample year:
 2007/2008, country: Spain¹⁵¹⁵,
 *for food and feed, **conventional

incidence: 6/11* **, conc. range: ≤ 3.5 $\mu\text{g}/$
 kg , \emptyset conc.: 2.5 $\mu\text{g}/\text{kg}$, sample year:
 2007/2008, country: Spain¹⁵¹⁵,
 *for food and feed, **organic

3,15-DIACETYLDEOXYNIVALENOL

incidence: 25/40, conc. range: ≤ 400 $\mu\text{g}/$
 kg , sample year: 1994, country: Canada/
 Germany⁴²⁵, sa from Canada, *ncac

incidence: 6/7*, conc. range: tr–0.4 $\mu\text{g}/\text{kg}$,
 sample year: 1994, country: Germany/
 Canada⁵⁵¹, sa from Canada, *ncac (5 sa
 co-contaminated with DON, 3-AcDON,
 15-AcDON, 3,15-DiAcDON, and ZEA, 1 sa
 co-contaminated with DON and
 3,15-DiAcDON)

3-ACETYLDEOXYNIVALENOL + 15-ACETYLDEOXYNIVALENOL

incidence: 1/36* **, conc.: 46.2 $\mu\text{g}/\text{kg}$,
 sample year: 2005–2008, country: Czech
 Republic¹²⁴⁶, *for food and feed, **spring
 barley

incidence: 2/20, conc. range: 40–41 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 40.5 $\mu\text{g}/\text{kg}$, sample year: 2008/2009,
 country: Canada/Colombia¹⁴⁷⁷, sa from
 Canada (2 sa co-contaminated with DON,
 3-AcDON + 15-AcDON, and HT-2)

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 4/36* **, conc. range: ≤ 107.4 $\mu\text{g}/$
 kg , \emptyset conc.: 43 $\mu\text{g}/\text{kg}$, sample year:
 2005–2008, country: Czech Republic¹²⁴⁶,
 *for food and feed, **spring barley

incidence: 6/36* **, conc. range: ≤ 14.0 $\mu\text{g}/$
 kg , \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 2005–
 2008, country: Czech Republic¹²⁴⁶, *for
 food and feed, **spring barley

ENNIATIN A

incidence: 14/14*, conc. range: 2–950 µg/kg, Ø conc.: 87.9 µg/kg, sample year: 2001, country: Finland⁴⁵⁹, *ncac

(11 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁)

incidence: 7/8*, conc. range: tr–59 µg/kg, sample year: 2002, country: Finland⁴⁵⁹, *ncac (6 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁)

incidence: 4?/5, conc. range: ≤33,600 µg/kg, Ø conc.: 33,600 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 4/15* **, conc. range: 21.9–340 µg/kg, Ø conc.: 134.5 µg/kg, sample year: unknown, country: Spain/Czech Republic¹⁴⁸⁵, sa from Czech Republic, *ncac, **spring barley (2 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, HT-2, and T-2, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and HT-2, 1 sa contaminated with ENA, ENA₁, ENB, and ENB₁)

ENNIATIN A₁

incidence: 7?/8*, conc. range: ≤220 µg/kg, Ø conc.: 84 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 14/14*, conc. range: 18–2,000 µg/kg, Ø conc.: 310.3 µg/kg, sample year: 2001, country: Finland⁴⁵⁹, *ncac (11 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁)

incidence: 8/8*, conc. range: tr–570 µg/kg, sample year: 2002, country: Finland⁴⁵⁹, *ncac (6 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 2?/4, conc. range: ≤361,570 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 4?/5, conc. range: ≤149,000 µg/kg, Ø conc.: 116,400 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 4/15* **, conc. range: 25.3–698 µg/kg, Ø conc.: 231.4 µg/kg, sample year: unknown, country: Spain/Czech Republic¹⁴⁸⁵, sa from Czech Republic, *ncac, **spring barley (2 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, HT-2, and T-2, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and HT-2, 1 sa contaminated with ENA, ENA₁, ENB, and ENB₁)

ENNIATIN B

incidence: 7?/8*, conc. range: ≤49 µg/kg, Ø conc.: 18 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 14/14*, conc. range: 150–9,760 µg/kg, Ø conc.: 1,828.6 µg/kg, sample year: 2001, country: Finland⁴⁵⁹, *ncac (11 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁)

incidence: 8/8*, conc. range: 44–3,980 µg/kg, Ø conc.: 1,260 µg/kg, sample year: 2002, country: Finland⁴⁵⁹, *ncac

(6 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 2?/4, conc. range: ≤21,370 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 4?/5, conc. range: ≤29,200 µg/kg, Ø conc.: 27,500 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 4/15* **, conc. range: 19.4–2,029 µg/kg, Ø conc.: 557.9 µg/kg, sample year: unknown, country: Spain/Czech

Republic¹⁴⁸⁵, sa from Czech Republic, *ncac, **spring barley (2 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, HT-2, and T-2, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and HT-2, 1 sa contaminated with ENA, ENA₁, ENB, and ENB₁)

ENNIATIN B₁

incidence: 7/8*, conc. range: ≤32 µg/kg, Ø conc.: 22 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 14/14*, conc. range: 89–5,720 µg/kg, Ø conc.: 860.1 µg/kg, sample year: 2001, country: Finland⁴⁵⁹, *ncac (11 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁)

incidence: 8/8*, conc. range: tr–3,240 µg/kg, sample year: 2002, country: Finland⁴⁵⁹, *ncac (6 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 2/4, conc. range: ≤45,940 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 4/5, conc. range: ≤31,000 µg/kg, Ø conc.: 31,000 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 4/15* **, conc. range: 28.5–1,821 µg/kg, Ø conc.: 522.4 µg/kg, sample year: unknown, country: Spain/Czech Republic¹⁴⁸⁵, sa from Czech Republic, *ncac, **spring barley (2 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, HT-2, and T-2, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and HT-2, 1 sa contaminated with ENA, ENA₁, ENB, and ENB₁)

FUMONISIN B₁

incidence: 21/29*, conc. range: 200–11,600 µg/kg, Ø conc.: 1,900 µg/kg,

sample year: 1994–1996, country: Spain³⁵⁵, *ncac (1 sa co-contaminated with FB₁ and FB₂, 20 sa contaminated solely with FB₁)

incidence: 1/24, conc.: 132 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁷

incidence: 1/5, conc.: 63.1 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia

incidence: 3/10, conc. range: 45.5–97.7 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₂

incidence: 1/29*, conc.: 500 µg/kg, sample year: 1994–1996, country: Spain³⁵⁵, *ncac (1 sa co-contaminated with FB₁ and FB₂)

incidence: 3/10, conc. range: 43.1–72.5 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISINS (B₁, B₂)

incidence: 10/29* **, conc. range: 186.5–347.5 µg/kg, Ø conc.: 249.1 µg/kg, sample year: 2008–2010, country: Spain¹⁵⁷⁷, *ncac, **spring barley (1 sa co-contaminated with DON, FB₁ + FB₂, NIV, and ZEA, 1 sa co-contaminated with DON, FB₁ + FB₂, HT2 + T2, and ZEA, 3 sa co-contaminated with DON and FB₁ + FB₂, 2 sa co-contaminated with FB₁ + FB₂ and ZEA, 3 sa contaminated solely with FB₁ + FB₂)

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 17/39, conc. range: 12–71 µg/kg, Ø conc.: 25 µg/kg, sample year: 1990, country: Korea/Japan⁴⁶², sa from Korea

incidence: 4/1,095*, conc. range: ≤224 µg/kg, Ø conc.: 136 µg/kg, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac

incidence: 1/1*, conc.: 182 µg/kg, sample year: 1976, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)

incidence: 1/2*, conc.: 1,180 µg/kg, sample year: 1977, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)

incidence: 3/3*, conc. range: tr–57 µg/kg, sample year: 1989, country: Japan⁵⁷³,

*ncac (3 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV)

incidence: 6/7*, conc. range: tr–462 µg/kg, sample year: 1990, country: Japan⁵⁷³,

*ncac (2 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and

NIV, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV,

1 sa co-contaminated with DON, FUS-X, and NIV)

incidence: 2/4*, conc. range: 87–2,470 µg/kg, Ø conc.: 1,278.5 µg/kg, sample year: 1991, country: Japan⁵⁷³, *ncac

(1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV)

incidence: 4/446, conc. range: ≤55 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹

incidence: 2/36* **, conc. range: ≤16.9 µg/kg, Ø conc.: 16 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 1/44*, conc.: 17.4 µg/kg, sample year: 2007, country: Spain¹⁵¹⁵, *for food and feed

incidence: 1/68*, conc.: 3.6 µg/kg, sample year: 2008, country: Spain¹⁵¹⁵, *for food and feed

incidence: 1/13* **, conc.: 3.6 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **conventional

incidence: 0/11* **, conc. range: no contamination, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **organic

HT-2 TOXIN

incidence: 10/29*, conc. range: ≤88 µg/kg, Ø conc.: 41 µg/kg, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 3/7, conc. range: 10–100 µg/kg, sample year: 1998, country: Finland²¹⁹

(1 sa co-contaminated with DON, HT-2, and ZEA, 2 sa co-contaminated with DON and HT-2)

incidence: 22/102*, conc. range: >20–440 µg/kg, Ø conc.: 73 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 5/24* **, conc. range: 10–370 µg/kg, Ø conc.: 228 µg/kg, sample year: 1988–1991, country: Poland⁵¹¹, *ncac, **spring barley (2 sa co-contaminated with HT-2, T-2, and T-2TET, 3 sa co-contaminated with HT-2, and T-2)

incidence: 1/8, conc.: 10–20 µg/kg, sample year: 1998?, country: Finland⁷⁶⁵

incidence: 0/5*, conc. range: no contamination, sample year: unknown, country: France⁷⁷⁶, *conventional

incidence: 2/5*, conc. range: ≤183 µg/kg, sample year: unknown, country: France⁷⁷⁶, *organic

incidence: 161/446, conc. range: ≤105 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹ (1 sa co-contaminated with HT-2, T-2 and T-2TRI; no further information available)

incidence: 10/12*, conc. range: ≤54 µg/kg, Ø conc.: 19 µg/kg, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac

incidence: 21/24*, conc. range: 13.0–72.2 µg/kg, Ø conc.: 20.8 µg/kg, sample year: 2005, country: Czech Republic¹¹²⁷ (1 sa co-contaminated with DON, HT-2, NIV, and T-2, 4 sa co-contaminated with DON, HT-2, and NIV, 2 sa co-contaminated with DON, HT-2, and T-2, 14 sa co-contaminated with DON and HT-2)

incidence: 29/36* **, conc. range: ≤83.2 µg/kg, Ø conc.: 23 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 7/40* **, conc. range: ≤100.5 µg/kg, Ø conc.: 59 µg/kg, sample year: 2005–2008,

country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 19/36* **, conc. range: ≤ 135.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 42 $\mu\text{g}/\text{kg}$, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 36/36* **, conc. range: 59.6–715.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 202 $\mu\text{g}/\text{kg}$, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 14/15*, conc. range: 20–120 $\mu\text{g}/\text{kg}$, \emptyset conc.: 61 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Poland¹³²⁴, *ncac (8 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, T-2TET, and ZEA, 2 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, and ZEA, 3 sa co-contaminated with DON, HT-2, NIV, T-2, T-2TET, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and ZEA)

incidence: 12/20, conc. range: 16–67 $\mu\text{g}/\text{kg}$, \emptyset conc.: 40.8 $\mu\text{g}/\text{kg}$, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, and HT-2, 3 sa co-contaminated with DON, HT-2, and T-2, 7 sa co-contaminated with DON and HT-2)

incidence: 3/5, conc. range: 4.97–11.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7.6 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia

incidence: 3/15* **, conc. range: 26.2–78.5 $\mu\text{g}/\text{kg}$, \emptyset conc.: 45.1 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain/Czech Republic¹⁴⁸⁵, sa from Czech Republic, *ncac, **spring barley (2 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, HT-2, and T-2, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 10/44*, conc. range: ≤ 16.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7.8 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Spain¹⁵¹⁵, *for food and feed

incidence: 21/68*, conc. range: ≤ 200.5 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18.5 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Spain¹⁵¹⁵, *for food and feed

incidence: 1/13* **, conc.: 14.7 $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **conventional

incidence: 0/11* **, conc. range: no contamination, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **organic

incidence: 12/10, conc. range: 10.1–30.7 $\mu\text{g}/\text{kg}$?, sample year: 2010, country: Malaysia¹⁶⁴⁸

MONILIFORMIN

incidence: 11/14* **, conc. range: < 20 –290 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Finland⁴⁵⁸, *ncac, **spring barley

incidence: 11/14*, conc. range: tr–290 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Finland⁴⁵⁹, *ncac (11 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON)

incidence: 6/8*, conc. range: 35–750 $\mu\text{g}/\text{kg}$, \emptyset conc.: 390.8 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Finland⁴⁵⁹, *ncac (6 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON)

incidence: 1/19*, conc.: 43 $\mu\text{g}/\text{kg}$, sample year: 2000, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 4/23*, conc. range: tr–380 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 14/33*, conc. range: tr–230 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 5/239, conc. range: > 10 –45 $\mu\text{g}/\text{kg}$, sample year: 2002/2003, country: UK⁹⁴⁹

NIVALENOL

incidence: 18/29*, conc. range: ≤ 571 $\mu\text{g}/\text{kg}$, \emptyset conc.: 101 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 1/93*, conc.: 3.1 $\mu\text{g}/\text{kg}$, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 1/2, conc.: 186 $\mu\text{g}/\text{kg}$, sample year: 1991, country: China³⁴² (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 5/17*, conc. range: 90–640 µg/kg, sample year: unknown, country: Japan⁴⁴⁸, *ncac

incidence: 4/30, conc. range: 38–59 µg/kg, Ø conc.: 46 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 19?/25*, conc. range: tr–36,900 µg/kg, sample year: unknown, country: Japan⁴⁶¹, *ncac

incidence: 37/39, conc. range: 39–6,892 µg/kg, Ø conc.: 1,011 µg/kg, sample year: 1990, country: Korea/Japan⁴⁶², sa from Korea

incidence: 91/1,095*, conc. range: ≤770 µg/kg, Ø conc.: 121 µg/kg, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac

incidence: 6/102*, conc. range: >20–50 µg/kg, Ø conc.: 30 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 28/28* **, conc. range: 17–3,002 µg/kg, Ø conc.: 546 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *ncac, **unpolished barley (19 sa co-contaminated with DON, NIV, and ZEA, 7 sa co-contaminated with DON and NIV, 2 sa co-contaminated with NIV and ZEA)

incidence: 5/6* **, conc. range: 85–328 µg/kg, Ø conc.: 155.6 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *for food and feed, **polished barley (4 sa co-contaminated with DON and NIV, 1 sa contaminated solely with NIV)

incidence: 31/31* **, conc. range: 180–1,145 µg/kg, Ø conc.: 489 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **unhusked barley (29 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 6/6* **, conc. range: 39–228 µg/kg, Ø conc.: 112 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **husked barley (3 sa co-contaminated with DON, NIV,

and ZEA, 2 sa co-contaminated with DON and NIV, 1 sa contaminated solely with NIV)

incidence: 5/5* **, conc. range: 12–321 µg/kg, Ø conc.: 222.4 µg/kg, sample year: 1987, country: Korea⁵⁰⁷, *ncac, **husked barley (1 sa co-contaminated with DON, NIV, and ZEA, 4 sa co-contaminated with DON and NIV)

incidence: 17/18* **, conc. range: 28–1,109 µg/kg, Ø conc.: 330.8 µg/kg, sample year: 1987, country: Korea⁵⁰⁷, *ncac, **naked barley (8 sa co-contaminated with DON, NIV, and ZEA, 9 sa co-contaminated with DON and NIV)

incidence: 10/14* **, conc. range: 4–120 µg/kg, Ø conc.: 48.2 µg/kg, sample year: 1989, country: Korea⁵⁰⁷, *ncac, **husked barley (1 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV, 2 sa co-contaminated with NIV and ZEA, 5 sa contaminated solely with NIV)

incidence: 14/20* **, conc. range: 3–904 µg/kg, Ø conc.: 242.5 µg/kg, sample year: 1989, country: Korea⁵⁰⁷, *ncac, **naked barley (5 sa co-contaminated with DON, NIV, and ZEA, 3 sa co-contaminated with DON and NIV, 1 sa co-contaminated with NIV and ZEA, 5 sa contaminated solely with NIV)

incidence: 10/10*, conc. range: 114–1,546 µg/kg, Ø conc.: 742 µg/kg, sample year: 1990, country: Korea⁵⁰⁸, *husked barley (4 sa co-contaminated with DON, NIV, and ZEA, 5 sa co-contaminated with DON and NIV, 1 sa contaminated solely with NIV)

incidence: 27/27*, conc. range: 85–4,569 µg/kg, Ø conc.: 1,110 µg/kg, sample year: 1990, country: Korea⁵⁰⁸, *naked barley (6 sa co-contaminated with DON, NIV, and ZEA, 18 sa co-contaminated with DON and NIV, 3 sa contaminated solely with NIV)

incidence: 2/11, conc. range: 189–324 µg/kg, Ø conc.: 257 µg/kg, sample year: 1989,

country: Korea⁵⁰⁹, *home-grown barley
(1 sa co-contaminated with DON and NIV,
1 sa contaminated solely
with NIV)

incidence: 28/30*, conc. range:
40–2,038 µg/kg, Ø conc.: 390 µg/kg,
sample year: 1992, country: Korea⁵¹⁴,
*ncac (1 sa co-contaminated with DON,
3-AcDON, and NIV, 19 sa
co-contaminated with DON and NIV, 8 sa
contaminated solely with NIV)

incidence: 2/31*, conc. range: 140–770 µg/
kg, Ø conc.: 455 µg/kg, sample year: 1987,
country: Canada⁵²¹, *ncac

incidence: 6/24*, conc. range: 110–920 µg/
kg, sample year: 1990, country: Canada⁵²¹,
*ncac

incidence: 3/17*, conc. range: 120–810 µg/
kg, sample year: 1987, country:
Canada⁵²¹, *ncac

incidence: 2/24*, conc. range: 200–320 µg/
kg, Ø conc.: 260 µg/kg, sample year: 1992,
country: Canada⁵²¹, *ncac

incidence: 49/49*, conc. range: 13–258 µg/
kg, Ø conc.: 50.1 µg/kg, sample year: 1984,
country: Norway/Japan⁵²⁹, sa from
Norway, *ncac

incidence: 106/139*, Ø conc.: 401 µg/kg,
sample year: unknown, country: Japan⁵³⁰,
*ncac

incidence: 13/14*, conc. range: 8–380 µg/kg,
Ø conc.: 67 µg/kg, sample year: 1982–1985,
country: Japan⁵³¹, sa from Japan and
unknown origin, *polished pressed barley
(1 sa co-contaminated with DON, NIV, and
ZEA, 9 sa co-contaminated with DON and
NIV, 3 sa contaminated solely with NIV)

incidence: 1/1*, conc.: 220 µg/kg, sample
year: 1982–1985, country: Japan⁵³¹, sa from
unknown origin, *pearled barley (1 sa
co-contaminated with DON, NIV, and ZEA)

incidence: 2/2*, conc. range: 600–1,240 µg/
kg, Ø conc.: 920 µg/kg, sample year:
unknown, country: Japan⁵³², *ncac

incidence: 9?/10* **, conc. range:
16–56 µg/kg, Ø conc.: 33 µg/kg, sample

year: unknown, country: Japan⁵³², *ncac,
**pressed barley

incidence: 2/2* **, conc. range: 920–
1,670 µg/kg, Ø conc.: 1,295 µg/kg, sample
year: unknown, country: Japan⁵³², *ncac,
**naked barley (2 sa co-contaminated
with DON and NIV)

incidence: 3/8*, conc. range: 7–1,140 µg/kg, Ø
conc.: 391 µg/kg, sample year: 1984, country:
Japan⁵³³, sa from Scotland, *ncac (3 sa
co-contaminated with DON, NIV, and ZEA)

incidence: 4/6*, conc. range: 30–145 µg/kg,
Ø conc.: 85 µg/kg, sample year: 1984/1985,
country: Japan/Netherlands⁵³⁶, sa from
Netherlands, *ncac (4 sa co-contaminated
with DON, NIV, and ZEA)

incidence: 15/20*, Ø conc.: 25 µg/kg,
sample year: 1983, country: Japan⁵³⁸, sa
from Argentina, *ncac

incidence: 1/3*, conc.: 44 µg/kg, sample
year: 1984, country: Japan⁵³⁸,
sa from Germany, *ncac

incidence: 1/5*, conc.: 23 µg/kg, sample
year: 1984, country: Japan⁵³⁸,
sa from Italy, *ncac

incidence: 1/4*, conc.: 21 µg/kg, sample
year: 1984, country: Japan⁵³⁸,
sa from Nepal, *ncac

incidence: 2/3*, Ø conc.: 13 µg/kg, sample
year: 1984, country: Japan⁵³⁸,
sa from Yemen, *ncac

incidence: 3/7*, conc. range: 56–91 µg/kg,
Ø conc.: 78.3 µg/kg, sample year: 1985,
country: Poland⁵⁴⁸, *ncac

incidence: 78/94*, conc. range:
15–3,900 µg/kg, sample year: 1984–1994,
country: Japan⁵⁷¹, *ncac (69 sa
co-contaminated with DON and NIV, 9 sa
contaminated with solely NIV)

incidence: 1/1*, conc.: 924 µg/kg, sample
year: 1976, country: Japan⁵⁷³,
*ncac (1 sa co-contaminated with DON,
3-AcDON, FUS-X, NIV, and ZEA)

incidence: 2/2*, conc. range: 3,130–
12,200 µg/kg, Ø conc.: 7,665 µg/kg, sample

- year: 1977, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 1 sa co-contaminated with DON and NIV)
incidence: 3/3*, conc. range: 116–353 µg/kg, Ø conc.: 231.7 µg/kg, sample year: 1989, country: Japan⁵⁷³, *ncac (3 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV)
incidence: 7/7*, conc. range: 254–20,300 µg/kg, Ø conc.: 3,708.7 µg/kg, sample year: 1990, country: Japan⁵⁷³, *ncac (2 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, and NIV, 1 sa co-contaminated with DON, FUS-X, and NIV)
incidence: 4/4*, conc. range: 668–26,000 µg/kg, Ø conc.: 10,484.5 µg/kg, sample year: 1991, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 2 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)
incidence: 14/17*, conc. range: 30–1,070 µg/kg, Ø conc.: 231 µg/kg, sample year: 1991, country: Japan⁶¹⁰, *ncac (7 sa co-contaminated with DON and NIV, 7 sa contaminated with solely NIV)
incidence: 3/8, conc. range: 10–20 µg/kg, sample year: 1998?, country: Finland⁷⁶⁵
incidence: 1/5*, conc.: ≤57 µg/kg, sample year: unknown, country: France⁷⁷⁶, *conventional
incidence: 4/5*, conc. range: ≤301 µg/kg, sample year: unknown, country: France⁷⁷⁶, *organic
incidence: 112/446, conc. range: ≤157 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹
incidence: 11/12*, conc. range: 40–303 µg/kg, Ø conc.: 138 µg/kg, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac
incidence: 5?/24*, conc. range: 9.4–15.4 µg/kg, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac (1 sa co-contaminated with DON, HT-2, NIV, and T-2, 4 sa co-contaminated with DON, HT-2, and NIV, 1 sa co-contaminated with DON and NIV)
incidence: 13/13, conc. range: 96–5,600 µg/kg, Ø conc.: 1,780 µg/kg, sample year: unknown, country: China¹¹⁵²
incidence: 5/5*, conc. range: 10–50 µg/kg, Ø conc.: 30 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (4 sa co-contaminated with DON, NIV, and OTA, 1 sa co-contaminated with DON and NIV)
incidence: 7/36* **, conc. range: ≤18.2 µg/kg, Ø conc.: 13 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley
incidence: 4/40* **, conc. range: ≤14.2 µg/kg, Ø conc.: 15 µg/kg?, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley
incidence: 33/36* **, conc. range: ≤140.0 µg/kg, Ø conc.: 45 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley
incidence: 7/36* **, conc. range: ≤46.2 µg/kg, Ø conc.: 22 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley
incidence: 14/15* **, conc. range: 8–379 µg/kg, Ø conc.: 57.8 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (10 sa co-contaminated with DON, NIV, and ZEA, 4 sa co-contaminated with DON and NIV)
incidence: 15/15*, conc. range: 10–130 µg/kg, Ø conc.: 61 µg/kg, sample year: 1997, country: Poland¹³²⁴, *ncac (8 sa co-contaminated with DAS, DON, HT-2,

NIV, T-2, T-2TET, and ZEA, 2 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, and ZEA, 3 sa co-contaminated with DON, HT-2, NIV, T-2, T-2TET, and ZEA, 1 sa co-contaminated with DAS, DON, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and ZEA)

incidence: 6/6, conc. range: 140–3,000 µg/kg, Ø conc.: 978.3 µg/kg, sample year: unknown, country: Japan¹⁴⁵³

incidence: 4/44*, conc. range: ≤12.5 µg/kg, Ø conc.: 7.4 µg/kg, sample year: 2007, country: Spain¹⁵¹⁵, *for food and feed

incidence: 21/68*, conc. range: ≤142.5 µg/kg, Ø conc.: 22.7 µg/kg, sample year: 2008, country: Spain¹⁵¹⁵, *for food and feed

incidence: 4/13* **, conc. range: ≤38.9 µg/kg, Ø conc.: 25.9 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **conventional

incidence: 0/11* **, conc. range: no contamination, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **organic

incidence: 5/29* **, conc. range: 3.5–5.8 µg/kg, Ø conc.: 4.6 µg/kg, sample year: 2008–2010, country: Spain¹⁵⁷⁷, *ncac, **spring barley (1 sa co-contaminated with DON, FB₁ + FB₂, NIV, and ZEA, 1 sa co-contaminated with DON, HT₂ + T₂ and NIV, 3 sa co-contaminated with DON, NIV, and ZEA)

4,15-DIACETYLNIVALENOL

incidence: 5/39, conc. range: 15–28 µg/kg, Ø conc.: 22 µg/kg, sample year: 1990, country: Korea/Japan⁴⁶², sa from Korea

DIACETOXYSCIRPENOL

incidence: 11/15*, conc. range: 10–30 µg/kg, Ø conc.: 16 µg/kg, sample year: 1997, country: Poland¹³²⁴, *ncac (8 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, T-2TET, and ZEA, 2 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, and ZEA, 1 sa co-contaminated with DAS, DON, NIV, T-2, and ZEA)

incidence: 2/44*, conc. range: ≤1.1 µg/kg, Ø conc.: 0.9 µg/kg, sample year: 2007, country: Spain¹⁵¹⁵, *for food and feed

incidence: 29/68*, conc. range: ≤1.7 µg/kg, Ø conc.: 0.9 µg/kg, sample year: 2008, country: Spain¹⁵¹⁵, *for food and feed

incidence: 2/13* **, conc. range: ≤1.7 µg/kg, Ø conc.: 1.2 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **conventional

incidence: 1/11* **, conc.: 0.5 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **organic

SCIRPENTRIOL

incidence: 12/32, conc. range: 10–83 µg/kg, Ø conc.: 45 µg/kg, sample year: 1996/1997, country: Poland¹¹⁸⁷

T-2 TOXIN

incidence: 4/29*, conc. range: ≤76 µg/kg, Ø conc.: 40 µg/kg, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 5/102*, conc. range: >20–220 µg/kg, Ø conc.: 85 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 12/24* **, conc. range: 20–2,400 µg/kg, Ø conc.: 450 µg/kg, sample year: 1988–1991, country: Poland⁵¹¹, *ncac, **spring barley (2 sa co-contaminated with HT-2, T-2, and T-2TET, 3 sa co-contaminated with HT-2, and T-2, 7 sa contaminated solely with T-2)

incidence: 2/49*, conc. range: 22–46 µg/kg, Ø conc.: 34 µg/kg, sample year: 1984, country: Norway/Japan⁵²⁹, sa from Norway, *ncac

incidence: 54/446, conc. range: ≤39 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹ (1 sa co-contamination with HT-2, T-2, and T-2TRI; no further information available)

incidence: 14/121, conc. range: 0.9–1,200 µg/kg, sample year: 1980–1985, country: Japan⁹⁸³, sa from Finland, Germany, Italy, Korea, Nepal, Norway, Poland, Portugal, and USSR; for detailed information please see the article

incidence: 3/24*, conc. range: 5.9–7.7 µg/kg, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac (1 sa co-contaminated with DON, HT-2, NIV, and T-2, 2 sa co-contaminated with DON, HT-2, and T-2)

incidence: 2/36* **, conc. range: ≤30.7 µg/kg, Ø conc.: 21 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 9/40* **, conc. range: ≤70.7 µg/kg, Ø conc.: 23 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 31/36* **, conc. range: ≤72.0 µg/kg, Ø conc.: 16 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 31/36* **, conc. range: ≤319.7 µg/kg, Ø conc.: 35 µg/kg, sample year: 2005–2008, country: Czech Republic¹²⁴⁶, *for food and feed, **spring barley

incidence: 15/15*, conc. range: 30–60 µg/kg, Ø conc.: 47 µg/kg, sample year: 1997, country: Poland¹³²⁴, *ncac (8 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, T-2TET, and ZEA, 2 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, and ZEA, 3 sa co-contaminated with DON, HT-2, NIV, T-2, T-2TET, and ZEA, 1 sa co-contaminated with DAS, DON, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and ZEA)

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring barley, **conventional

incidence: 6/6* **, conc. range: 7.80–21.90 µg/kg, Ø conc.: 10.83 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring barley, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring barley, **conventional

incidence: 6/6* **, conc. range: 7.90–20.90 µg/kg, Ø conc.: 11.45 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring barley, **organic

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *winter barley, **conventional

incidence: 1/2* **, conc.: 9.3 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter barley, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter barley, **conventional

incidence: 2/2* **, conc. range: 10.20–23.60 µg/kg, Ø conc.: 16.90 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter barley, **organic

incidence: 4/20, conc. range: <LOQ–13 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (3 sa co-contaminated with DON, HT-2, and T-2, 1 sa co-contaminated with DON and T-2)

incidence: 2/15* **, conc. range: 8.8–30.5 µg/kg, Ø conc.: 19.7 µg/kg, sample year: unknown, country: Spain/Czech Republic¹⁴⁸⁵, sa from Czech Republic, *ncac, **spring barley (2 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, HT-2, and T-2)

incidence: 5/44*, conc. range: ≤22.6 µg/kg, Ø conc.: 9.2 µg/kg, sample year: 2007, country: Spain¹⁵¹⁵, *for food and feed

incidence: 7/68*, conc. range: ≤332.0 µg/kg, Ø conc.: 53.2 µg/kg, sample year: 2008, country: Spain¹⁵¹⁵, *for food and feed

incidence: 1/13* **, conc.: 10.0 µg/kg, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **conventional

incidence: 0/11* **, conc. range: no contamination, sample year: 2007/2008, country: Spain¹⁵¹⁵, *for food and feed, **organic

incidence: 1?/10, conc. range: 12.7–55.9 µg/kg?, sample year: 2010, country: Malaysia¹⁶⁴⁸

T-2 TOXIN + HT-2 TOXIN

incidence: 3/29* **, conc. range: 14.4–22.7 µg/kg, Ø conc.: 17.8 µg/kg, sample year: 2008–2010, country: Spain¹⁵⁷⁷, *ncac, **spring barley (1 sa co-contaminated with DON, FB₁ + FB₂, HT₂ + T₂, and ZEA, 1 sa co-contaminated with DON, HT₂ + T₂, and NIV, 1 sa co-contaminated with DON and HT₂ + T₂)

T-2 TETRAOL

incidence: 2/24*, conc. range: 10–210 µg/kg, Ø conc.: 110 µg/kg, sample year: 1988–1991, country: Poland⁵¹¹, *ncac, **spring barley (2 sa co-contaminated with HT-2, T-2, and T-2TET)

incidence: 11/15*, conc. range: 10–40 µg/kg, Ø conc.: 29 µg/kg, sample year: 1997, country: Poland¹³²⁴, *ncac (8 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, T-2TET, and ZEA, 3 sa co-contaminated with DON, HT-2, NIV, T-2, T-2TET, and ZEA)

T-2 TRIOL

incidence: 1/446, conc.: 11 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹ (1 sa co-contamination with HT-2, T-2, and T-2TRI)

α-ZEARALENOL

incidence: 1/18, conc.: 5 µg/kg, sample year: unknown, country: Japan⁵³⁵ (1 sa co-contaminated with ZEA and α-ZEL)

ZEARALENONE

incidence: 6/20, conc. range: <LOQ (5 sa), 1.355 µg/kg (1 sa), sample year: 2007, country: Spain²⁶

incidence: 4/11, conc. range: 2.38–24.43 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

incidence: 1/7, conc. range: 2–8 µg/kg, sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, HT-2 and ZEA)

incidence: 2/2, conc. range: 210–1,242 µg/kg, Ø conc.: 726 µg/kg, sample year: 1991, country: China³⁴² (1 sa co-contaminated with DON, NIV and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 2/30, conc. range: 21–30 µg/kg, Ø conc.: 26 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 20/39, conc. range: 40–1,416 µg/kg, Ø conc.: 287 µg/kg, sample year: 1990, country: Korea/Japan⁴⁶², sa from Korea

incidence: 15/85*, conc. range: ≤170 µg/kg, sample year: 1986–1989, country: New Zealand⁴⁶⁸, *ncac

incidence: 21/28* **, conc. range: 3–1,581 µg/kg, Ø conc.: 147 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *ncac, **unpolished barley (19 sa co-contamination with DON, NIV, and ZEA, 2 sa co-contaminated with NIV and ZEA)

incidence: 29/31* **, conc. range: 1–388 µg/kg, Ø conc.: 25.7 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **unhusked barley (29 sa co-contaminated with DON, NIV, and ZEA)

incidence: 3/6* **, conc. range: 1–2 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **husked barley (3 sa co-contaminated with DON, NIV, and ZEA)

incidence: 10/30, conc. range: 14–171 µg/kg, Ø conc.: 36 µg/kg, sample year: 1998/1999, country: Korea⁵⁰⁶

incidence: 1/5* **, conc.: 28 µg/kg, sample year: 1987, country: Korea⁵⁰⁷, *ncac, **husked barley (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 8/18* **, conc. range: 43–1,132 µg/kg, Ø conc.: 280.6 µg/kg, sample year: 1987, country: Korea⁵⁰⁷, *ncac, **naked barley (8 sa co-contaminated with DON, NIV, and ZEA)

incidence: 3/14* **, conc. range: 27–49 µg/kg, Ø conc.: 40.66 µg/kg, sample year: 1989, country: Korea⁵⁰⁷, *ncac, **husked barley (1 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with NIV and ZEA)

incidence: 6/20* **, conc. range: 81–580 µg/kg, Ø conc.: 216 µg/kg, sample year: 1989, country: Korea⁵⁰⁷, *ncac, **naked barley (5 sa co-contaminated with DON, NIV, and ZEA, 1 sa co-contaminated with NIV and ZEA)

incidence: 4/10*, conc. range: 183–1,416 µg/kg, Ø conc.: 551.5 µg/kg, sample year: 1990, country: Korea⁵⁰⁸, *husked barley (4 sa co-contaminated with DON, NIV, and ZEA)

incidence: 6/27*, conc. range: 40–1,081 µg/kg, Ø conc.: 579 µg/kg, sample year: 1990, country: Korea⁵⁰⁸, *naked barley (6 sa co-contaminated with DON, NIV, and ZEA)

incidence: 3/210*, conc. range: 4–21 µg/kg, Ø conc.: 13 µg/kg, sample year: 1987–1989, 1990–1993 (5 years), country: Canada⁵²¹, *ncac

incidence: 17/49*, conc. range: 1–5 µg/kg, Ø conc.: 2.6 µg/kg, sample year: 1984, country: Norway/Japan⁵²⁹, sa from Norway, *ncac

incidence: 101/139*, Ø conc.: 35 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 1/3*, conc.: 6 µg/kg, sample year: 1982–1985, country: Japan⁵³¹, sa from Japan and unknown origin, *polished pressed barley (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 1/1*, conc.: 4 µg/kg, sample year: 1982–1985, country: Japan⁵³¹, sa from unknown origin, *pearled barley (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 8/8*, conc. range: 3–33 µg/kg, Ø conc.: 10 µg/kg, sample year: 1984, country: Japan⁵³³, sa from Scotland, *ncac (3 sa co-contaminated with DON, NIV,

and ZEA, 2 sa co-contaminated with DON and ZEA, 3 sa contaminated solely with ZEA)

incidence: 13/18*, conc. range: 2–97 µg/kg, Ø conc.: 23.9 µg/kg, sample year: unknown, country: Japan⁵³⁵, *ncac (1 sa co-contaminated with ZEA and α -ZEL, 12 sa contaminated solely with ZEA)

incidence: 6/6*, conc. range: 4–9 µg/kg, Ø conc.: 7 µg/kg, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (4 sa co-contaminated with DON, NIV, and ZEA, 1 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with ZEA)

incidence: 13/20*, Ø conc.: 5 µg/kg, sample year: 1983, country: Japan⁵³⁸, sa from Argentina, *ncac

incidence: 5/13*, Ø conc.: 8.2 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 1/5*, conc.: 56 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Italy, *ncac

incidence: 4/4*, Ø conc.: 18 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 3/3*, Ø conc.: 43 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 5/7*, conc. range: 24–450 µg/kg, Ø conc.: 166.2 µg/kg, sample year: 1994, country: Germany/Canada⁵⁵¹, sa from Canada, *ncac (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, 3,15-DiAcDON, and ZEA)

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *conventional

incidence: 2/7*, conc. range: 5.1–5.5 µg/kg, Ø conc.: 5.3 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Germany and unknown origin, *organic (2 sa co-contaminated with DON and ZEA)

incidence: 1/1*, conc.: 815 µg/kg, sample year: 1976, country: Japan⁵⁷³,

*ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)

incidence: 1/2*, conc.: 569 µg/kg, sample year: 1977, country: Japan⁵⁷³,

*ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)

incidence: 2/7*, conc. range: 105–159 µg/kg, Ø conc.: 132 µg/kg, sample year: 1990, country: Japan⁵⁷³, *ncac (2 sa

co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA)

incidence: 3/4*, conc. range: 661–15,300 µg/kg, Ø conc.: 9,153.7 µg/kg, sample year: 1991, country: Japan⁵⁷³,

*ncac (1 sa co-contaminated with DON, 3-AcDON, FUS-X, NIV, and ZEA, 2 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)

incidence: 2/5*, conc. range: ≤3.4 µg/kg, sample year: unknown, country: France⁷⁷⁶, *conventional

incidence: 0/5*, conc. range: no contamination, sample year: unknown, country: France⁷⁷⁶, *organic

incidence: 20/137*, conc. range: 100–200 µg/kg (12 sa), >200 µg/kg (8 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *barley and malt

incidence: 34/339, conc. range: >3–44 µg/kg, sample year: 2002–2005, country: UK⁹⁴⁹

incidence: 4/16*, conc. range: tr–193.4 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed

Lithuania¹²⁵⁴, *for food and feed

incidence: 34/50*, conc. range: tr–16.5 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 2/18, conc. range: 21.4–36.6 µg/kg, Ø conc.: 29.0 µg/kg, sample year: 2007, country: Bulgaria¹²⁵⁵

incidence: 10/15* **, conc. range: 1–2,753 µg/kg, Ø conc.: 604.6 µg/kg, sample year: unknown, country:

Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (10 sa co-contaminated with DON, NIV, and ZEA)

incidence: 15/15*, conc. range: 40–120 µg/kg, Ø conc.: 63 µg/kg, sample year: 1997, country: Poland¹³²⁴, *ncac (8 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, T-2TET, and ZEA, 2 sa co-contaminated with DAS, DON, HT-2, NIV, T-2, and ZEA, 3 sa co-contaminated with DON, HT-2, NIV, T-2, T-2TET, and ZEA, 1 sa co-contaminated with DAS, DON, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and ZEA)

incidence: 1/5*, conc.: 1,500 µg/kg, sample year: 1993, country: USA¹³⁹³, *six-rowed malting barley (1 sa co-contamination with DON, 3-AcDON, 15-AcDON, and ZEA)

incidence: 4/4* **, conc. range: 34.9–83.6 µg/kg, Ø conc.: 61.7 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 15/21*, conc. range: 86–202 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring barley, **conventional

incidence: 8/9* **, conc. range: ≤11.50 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter barley, **conventional

incidence: 2/2* **, conc. range: 11.90–12.00 µg/kg, Ø conc.: 11.95 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter barley, **organic

incidence: 16/44*, conc. range: ≤1.03 µg/kg, Ø conc.: 0.76 µg/kg, sample year: 2007, country: Spain¹⁵¹⁷, *for food and feed

incidence: 28/68*, conc. range: ≤ 18.53 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 2.65 $\mu\text{g}/\text{kg}$, sample year: 2008,
 country: Spain¹⁵¹⁷, *for food and feed

incidence: 7/13* **, conc. range:
 ≤ 18.53 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5.24 $\mu\text{g}/\text{kg}$, sample
 year: 2007/2008, country: Spain¹⁵¹⁷, *for
 food and feed, **conventional

incidence: 4/11* **, conc. range: 1.49 $\mu\text{g}/$
 kg , \emptyset conc.: 1.06 $\mu\text{g}/\text{kg}$, sample year:
 2007/2008, country: Spain¹⁵¹⁷, *for food
 and feed, **organic

incidence: 11/29* **, conc. range: 10.4–
 34.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18.5 $\mu\text{g}/\text{kg}$, sample
 year: 2008–2010, country: Spain¹⁵⁷⁷, *ncac,
 **spring barley (1 sa co-contaminated
 with DON, FB₁ + FB₂, HT2 + T2, and ZEA,
 1 sa co-contaminated with DON FB₁ + FB₂,
 NIV, and ZEA, 3 sa co-contaminated with
 DON, NIV, and ZEA, 2 sa co-contaminated
 with DON, FB₁ + FB₂, and ZEA, 3 sa
 co-contaminated with DON and ZEA, 1 sa
 contaminated solely with ZEA)

incidence: 3/10, conc. range: 0.95–20.26 $\mu\text{g}/$
 kg , sample year: 2010, country: Malaysia¹⁶⁴⁸

Barley bran see Bran (barley bran)

Barley flour see Flour (barley flour)

Barley foods see Food

Barley grits see Grit (barley grits)

Barley malt see Malt (barley malt)

Barley meal see Meal (barley meal)

Barley products see Product (barley
 products)

Batter may contain the following
 mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/16*, conc.: 500 $\mu\text{g}/\text{kg}$, sample
 year: 1996, country: China/USA⁴⁷⁸, sa from
 China, *unfermented batter

incidence: 1/16*, conc.: 500 $\mu\text{g}/\text{kg}$, sample
 year: 1996, country: China/USA⁴⁷⁸, sa from
 China, *fermented batter

FUMONISIN B₁

incidence: 3/16*, conc. range: 600–
 5,700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,400 $\mu\text{g}/\text{kg}$, sample
 year: 1996, country: China/USA⁴⁷⁸, sa from
 China, *unfermented batter

incidence: 3/16*, conc. range: 600–
 7,200 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,867 $\mu\text{g}/\text{kg}$, sample
 year: 1996, country: China/USA⁴⁷⁸, sa from
 China, *fermented batter

FUMONISIN B₂

incidence: 2/16*, conc. range: 500 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 500 $\mu\text{g}/\text{kg}$, sample year: 1996,
 country: China/USA⁴⁷⁸, sa from China,
 *unfermented batter

FUMONISIN B₃

incidence: 1/16*, conc.: 900 $\mu\text{g}/\text{kg}$, country:
 China/USA⁴⁷⁸, sample year: 1996, sa from
 China, *fermented batter

Batter is a semi-liquid mixture of one or
 more kinds of grain used to make
 different foods.

Bean may contain the following
 mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 14/25*, conc. range:
 tr–2,800 $\mu\text{g}/\text{kg}$, sample year: unknown,
 country: India²⁹, *mung bean
 (1 sa co-contaminated with AFB₁
 and AFB₂, 13 sa contaminated solely
 with AFB₁)

incidence: 2/145, conc. range: 1–10 $\mu\text{g}/\text{kg}$,
 sample year: during the 1990s, country:
 Cuba⁴⁷

incidence: 1/3* **, conc.: 1.7 $\mu\text{g}/\text{kg}$,
 sample year: unknown, country: Egypt/
 USA⁶², sa from Egypt, **Vicia faba* L.,
 **stored sa (1 sa co-contaminated with
 AFB₁ and AFB₂)

incidence: 4?/293*, conc. range: 4.7–
 52.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 17.9 $\mu\text{g}/\text{kg}$, sample

year: 1986–1990, country: Japan⁹⁹, *beans for bean jam

incidence: 1/30*, conc.: 125 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *Faba bean (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4?/381*, conc. range: 1.4–254 µg/kg, sample year: unknown, country: Japan¹⁸⁴, *beans for bean jam

incidence: 14/27*, conc. range: 21–100 µg/kg (4 sa), 101–500 µg/kg (7 sa), 501–1,000 µg/kg (1 sa), >1,000 µg/kg (2 sa, maximum: 1,040 µg/kg), sample year: 1987, country: India³⁹⁸, *mung bean

incidence: 11/610*, conc. range: 1.4–26.9 µg/kg, Ø conc.: 6.4 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², *included butter, saltani-saltapya, red lima, and small red beans (11 sa co-contaminated with AFB₁ and AFB₂); for detailed information please see the article

incidence: 1/10*, conc.: 39 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Cariquinho bean (1 sa co-contaminated with AFB₁, AFG₁ and AFG₂)

incidence: 1/3*, conc.: 52 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Mulatinho bean (1 sa co-contaminated with AFB₁, AFG₁ and AFG₂)

incidence: ?/20* **, conc.: 230 µg/kg, sample year: unknown, country: Taiwan⁸²⁵, *fungal infected, ***Phaseolus vulgaris*

incidence: 5/30*, conc. range: 0.21–0.29 µg/kg, Ø conc.: 0.24 µg/kg, sample year: unknown, country: Iran⁹³⁶, **Phaseolus vulgaris* L.

incidence: 6/20*, conc. range: 3.6–21.2 µg/kg, Ø conc.: 9.93 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China, *dried red beans

AFLATOXIN B₂

incidence: 1/25*, conc.: pr, sample year: unknown, country: India²⁹, *mung bean (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/3* **, conc.: 1.5 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, **Vicia faba* L., **stored sa (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4?/293*, conc. range: 0.4–1.5 µg/kg, Ø conc.: 0.7 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *beans for bean jam

incidence: 1/30*, conc.: 12.5 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *Faba bean (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4?/381*, conc. range: 1.2–8.5 µg/kg, country: Japan¹⁸⁴, *beans for bean jam

incidence: 11/610*, conc. range: 0.4–6.9 µg/kg, Ø conc.: 1.9 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², *included butter, saltani-saltapya, red lima, and small red beans (11 sa co-contaminated with AFB₁ and AFB₂); for detailed information please see the article

incidence: ?/20* **, conc.: 160 µg/kg, sample year: unknown, country: Taiwan⁸²⁵, *fungal infected, ***Phaseolus vulgaris*

AFLATOXIN G₁

incidence: 1/10*, conc.: 21 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Cariquinho bean (1 sa co-contaminated with AFB₁, AFG₁ and AFG₂)

incidence: 1/3*, conc.: 31 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Mulatinho bean (1 sa co-contaminated with AFB₁, AFG₁ and AFG₂)

incidence: ?/20* **, conc.: 20,370 µg/kg, sample year: unknown, country: Taiwan⁸²⁵, *fungal infected, ***Phaseolus vulgaris*

incidence: 2/20*, conc. range: 20**–50*** µg/kg, Ø conc.: 35 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *different kinds of beans, **lantao bean, ***fava bean

AFLATOXIN G₂

incidence: 1/10*, conc.: 4 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Carioquinha bean (1 sa co-contaminated with AFB₁, AFG₁ and AFG₂)

incidence: 1/3*, conc.: 8 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Mulatinho bean (1 sa co-contaminated with AFB₁, AFG₁ and AFG₂)

incidence: ?/20* **, conc.: 720 µg/kg, sample year: unknown, country: Taiwan⁸²⁵, *fungal infected, ***Phaseolus vulgaris*

AFLATOXIN

incidence: 2/29, conc. range: >30 to ≤86 µg/kg, sample year: 1967–1969, country: USA³², sa from Philippines

incidence: 233/416*, Ø conc.: 19.1 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *bean and bean products, **of pos sa?

incidence: 10/160, Ø conc.: 34.4 µg/kg, sample year: unknown, country: South Africa/France/Kenya/Netherlands¹³¹⁹, sa from Swaziland

AFLATOXINS (B₁, B₂, G₁)

incidence: 4/4* **, conc. range: 6–20 µg/kg (4 sa, maximum: 20 µg/kg), sample year: 1976, country: Guatemala³⁴, *black bean, **sa stored for 6 months during dry season

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 46*/64, conc. range: 1–100 µg/kg (30 sa), 100–1,000 µg/kg (11 sa), >1,000 (5 sa), sample year: 1966/1967, country: Uganda/USA⁵, sa from Uganda, *15 sa contained AFB₁, 42 sa contained AFB₂, 11 sa contained AFG₁, 1 sa contained AFG₂

incidence: 1/17*, conc.: 22 µg/kg, sample year: 1975/1976-?, country: Guatemala³³, *black bean

incidence: 1/5* **, conc.: 10 µg/kg, sample year: 1976, country: Guatemala³⁴, *black

bean, **analyzed within 20 days after harvest in rainy season

incidence: 2/5* **, conc. range: 6–20 µg/kg (2 sa, maximum: 30 µg/kg), sample year: 1976, country: Guatemala³⁴, *black bean, **same sa like above but measured after 2 months of storage in rainy season

incidence: 7/140*, conc. range: ≤112 µg/kg, Ø conc.: 16 µg/kg, sample year: 1967–1969, country: Thailand¹⁶³, *mung bean

AFLATOXINS (TOTAL)

incidence: 4/79, conc. range: >6.8–10 µg/kg (2 sa), –15 µg/kg (2 sa), sample year: 1992–1994, country: Switzerland¹³¹, sa from Ecuador

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/28*, conc. range: 0.7–19.3 µg/kg, sample year: 1981/1982, country: Bulgaria/France⁶⁵³, sa from Bulgaria, *control BEN area

incidence: 4/24*, conc. range: 4.8–33.9 µg/kg, sample year: 1981/1982, country: Bulgaria/France⁶⁵³, sa from Bulgaria, *BEN area

incidence: 4/42, conc. range: 12.0–22.4 µg/kg, Ø conc.: 14.7 µg/kg, sample year: unknown, country: Egypt⁷²¹

incidence: 1*/50, conc.: 0.3 µg/kg, sample year: 1996, country: UK⁷⁴², *baked beans

incidence: 1/10*, conc.: 94 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Carioquinha bean

incidence: 1/3*, conc.: 160 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried Rosinha bean

incidence: 4/31*, conc. range: 10–442 µg/kg, Ø conc.: 123.5 µg/kg, sample year: 1976, country: Sweden⁸⁸³, *brown bean

incidence: 2/22*, conc. range: 139–277 µg/kg, Ø conc.: 208 µg/kg, sample year: 1977, country: Sweden⁸⁸³, *brown bean

incidence: 3/30*, conc. range: 0.23–0.39 µg/kg, Ø conc.: 0.29 µg/kg, sample year: unknown, country: Iran⁹³⁶, **Phaseolus vulgaris* L.

incidence: 17/45*, conc. range: 0.25–0.92 µg/kg, Ø conc.: 0.41 µg/kg, sample year: 2001, country: Croatia¹⁰⁶¹, **Phaseolus vulgaris* L.

incidence: 3/11*, conc. range: 0.14–0.76 µg/kg, Ø conc.: 0.45 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵, *green beans

incidence: 1/1*, conc.: 4.64 µg/kg, sample year: unknown, country: Taiwan/Russia¹⁵⁰², sa from Taiwan, *red kidney bean

incidence: 2/20*, conc. range: 0.1–5 µg/kg, sample year: 1996–1998, country: Sweden¹⁵⁶⁵, *brown beans

PENICILLIC ACID

incidence: 5/20* **, conc. range: 11–179 µg/kg, Ø conc.: 82 µg/kg, sample year: unknown, country: USA⁷⁵², *ncac, **dried bean

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2*/3***, conc. range: 3,100–6,500 µg/kg, sample year: 1993/1994, country: Taiwan/Canada⁵⁴⁶, sa from Canada, *grey and/or pink discoloration (*Fusarium* infection), ***Phaseolus vulgaris* L.

incidence: 5/22* **, conc. range: 2–160 µg/kg, Ø conc.: 42.8 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON and NIV, 1 sa co-contaminated with DON and ZEA, 3 sa contaminated solely with DON)

FUMONISIN B₁

incidence: 2*/3***, conc. range: 1,770–2,480 µg/kg, sample year: 1993/1994, country: Taiwan/Canada⁵⁴⁶, sa from Canada, *grey and/or pink discoloration (*Fusarium* infection), ***Phaseolus vulgaris* L.

NIVALENOL

incidence: 1/22* **, conc.: 24 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON and NIV)

DIACETOXYSCIRPENOL

incidence: 2*/3***, conc. range: 3,300–9,200 µg/kg, sample year: 1993/1994, country: Taiwan/Canada⁵⁴⁶, sa from Canada, *grey and/or pink discoloration (*Fusarium* infection), ***Phaseolus vulgaris* L.

T-2 TOXIN

incidence: 2/5* **, conc. range: 1,500–1,900 µg/kg, Ø conc.: 1,700 µg/kg, sample year: unknown, country: Turkey³³⁶, *dried beans, **bought from market

incidence: 2*/3***, conc. range: 5,500–13,500 µg/kg, sample year: 1993/1994, country: Taiwan/Canada⁵⁴⁶, sa from Canada, *grey and/or pink discoloration (*Fusarium* infection), ***Phaseolus vulgaris* L.

ZEARALENONE

incidence: 1/5, conc.: 7 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 1/22* , conc.: 3 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON and ZEA)

Bean jam see Jam (bean)

Bean paste see Paste (bean paste)

Bee pollen may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN (TOTAL)

incidence: 5*/5*, conc. range: 15.80–16.20 µg/kg, Ø conc.: 16.00 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *poppy bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 3.50–3.70 µg/kg, Ø conc.: 3.58 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 1.20–1.60 µg/kg, Ø conc.: 1.40 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *sunflower bee pollen, frozen; for detailed information please see the article

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5?/5*, conc. range: 6.12–6.41 µg/kg, Ø conc.: 6.21 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *poppy bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 9.70–9.87 µg/kg, Ø conc.: 9.81 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 6.89–6.93 µg/kg, Ø conc.: 6.91 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *sunflower bee pollen, frozen; for detailed information please see the article

Fusarium Toxins

DEOXYNIVALENOL

incidence: 5?/5*, conc. range: 183.10–183.70 µg/kg, Ø conc.: 183.38 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *poppy bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 215.00–215.70 µg/kg, Ø conc.: 215.32 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 203.10–203.50 µg/kg, Ø conc.: 203.24 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *sunflower bee pollen, frozen; for detailed information please see the article

FUMONISINS (TOTAL)

incidence: 5?/5*, conc. range: 9.40–9.70 µg/kg, Ø conc.: 9.60 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *sunflower bee pollen, frozen; for detailed information please see the article

NEOSOLANIOL

incidence: 2/15, conc. range: 22–30 µg/kg, Ø conc.: 26 µg/kg, sample year: unknown, country: Spain¹⁶²³ (2 sa co-contaminated with NEO and NIV)

NIVALENOL

incidence: 2/15, conc. range: ~1 µg/kg, sample year: unknown, country: Spain¹⁶²³ (2 sa co-contaminated with NEO and NIV)

T-2 TOXIN

incidence: 5?/5*, conc. range: 299.00–299.60 µg/kg, Ø conc.: 299.38 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *poppy bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 265.20–265.70 µg/kg, Ø conc.: 265.40 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 364.60–364.90 µg/kg, Ø conc.: 364.72 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *sunflower bee pollen, frozen; for detailed information please see the article

ZEARALENONE

incidence: 5?/5*, conc. range: 361.30–361.90 µg/kg, Ø conc.: 361.58 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *poppy bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 181.40–181.60 µg/kg, Ø conc.: 181.50 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *bee pollen, frozen; for detailed information please see the article

incidence: 5?/5*, conc. range: 147.10–147.40 µg/kg, Ø conc.: 147.26 µg/kg, sample year: 2009, country: Slovakia⁹⁹¹, *sunflower

bee pollen, frozen; for detailed information please see the article

Beef may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/58, conc.: 0.03 µg/kg, sample year: unknown, country: Germany⁵⁹⁸

Beefburger may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/25, Ø conc.: 8 µg/kg, sample year: unknown, country: Egypt¹⁴

Fusarium Toxins

ZEARALENONE

incidence: 3/20, conc. range: 1.6–6.7 µg/kg, Ø conc.: 4.8 µg/kg, sample year: unknown, country: Egypt⁴⁴³

Beer may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 37/43*, conc. range: ≤174.6 µg/kg, sample year: unknown, country: Germany¹²⁵³, *commercial bottled beers

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/150*, conc. range: 0.05–0.13 µg/l, Ø conc.: 0.10 µg/l, sample year: 1983–1987, country: South Africa¹⁸⁸, *sorghum beer

incidence: 2/6, conc. range: 0.0005–0.0018 µg/l, Ø conc.: 0.00115 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Central America (2 sa co-contaminated with AFB₁ and OTA) for detailed information please see the article

incidence: 3/4, conc. range: 0.0014–0.0121 µg/l, Ø conc.: 0.0074 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from South America (1 sa co-contaminated with AFB₁, AFB₂ and OTA, 1 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and OTA)

incidence: 1/1, conc.: 0.0019 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Kenya (1 sa co-contaminated with AFB₁ and OTA)

incidence: 1/46, conc.: 0.0033 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Europe (1 sa co-contaminated with AFB₁, AFB₂ and OTA)

incidence: 3/13, conc. range: 0.0013–0.0831 µg/l, Ø conc.: 0.0315 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Asia (2 sa co-contaminated with AFB₁, AFB₂ and OTA, 1 sa co-contaminated with AFB₁ and OTA)

incidence: 2/22, conc. range: 0.0005–0.0008 µg/l, Ø conc.: 0.0007 µg/l, sample year: unknown, country: Japan⁶⁴⁷

incidence: 7/24, conc. range: tr–0.0685 µg/l, sample year: unknown, country: Canada⁸⁴⁸, sa from Canada and different countries

incidence: 4/76, conc. range: ≤0.0014 µg/l, sample year: 1998–2002, country: Canada¹²⁴²

incidence: 5/40, conc. range: ≤0.0015 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from USA

incidence: 39/49, conc. range: 0.0007–0.0044 µg/l (5 sa), ≤0.018 µg/l (34 sa), sample year: 1998–2002, country: Canada¹²⁴², sa from Mexico

incidence: 12/34, conc. range: ≤0.0024 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Caribbean; for detailed information please see the article

incidence: 14/29, conc. range: 0.0007–0.0044 µg/l (3 sa), ≤0.0051 µg/l (11 sa), sample year: 1998–2002, country: Canada¹²⁴², sa from South Europe and Mediterranean; for detailed information please see the article

incidence: 6/43, conc. range: ≤0.0043 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Europe and other countries; for detailed information please see the article

incidence: 3/21, conc. range: ≤0.0012 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Asia; for detailed information please see the article

incidence: 5/5, conc. range: 0.0007–0.0044 µg/l (1 sa), ≤0.230 µg/l (4 sa), sample year: 1998–2002, country: Canada¹²⁴², sa from India

incidence: 1/5, conc.: 0.0007 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Africa; for detailed information please see the article

incidence: 1/2, conc.: 0.0007 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Australia and Brazil

incidence: 17/20*, conc. range: 15.98–134.91 µg/l, Ø conc.: 72.81 µg/l, sample year: unknown, country: Nigeria¹³⁰⁵, *millet beer (pito)

incidence: 15/20*, conc. range: 1.70–137.74 µg/l, Ø conc.: 54.71 µg/l, sample year: unknown, country: Nigeria¹³⁰⁵, *millet beer (burukutu)

incidence: 3/12*, conc. range: 0.17–0.86 µg/l, Ø conc.: 0.436 µg/l, sample year: unknown, country: Spain¹⁵⁹⁹, *normal (alcoholic) beer

AFLATOXIN B₂

incidence: 2/8, conc. range: 0.0013–0.002 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from South America (2 sa co-contamination with AFB₁)

incidence: 1/46, conc.: 0.0013 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from

Europe (1 sa co-contaminated with AFB₁, AFB₂ and OTA)

incidence: 2/13, conc. range: 0.0012–0.0086 µg/l, Ø conc.: 0.0049 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Asia (2 sa co-contaminated with AFB₁, AFB₂, and OTA)

incidence: 3/24, conc. range: tr–0.0079 µg/l, sample year: unknown, country: Canada⁸⁴⁸, sa from Canada and different countries

incidence: 9/76, conc. range: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴²

incidence: 1/40, conc.: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from USA

incidence: 12/49, conc. range: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Mexico

incidence: 5/34, conc. range: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Caribbean; for detailed information please see the article

incidence: 6/29, conc. range: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from South Europe and Mediterranean; for detailed information please see the article

incidence: 6/43, conc. range: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Europe and other countries; for detailed information please see the article

incidence: 4/5, conc. range: 0.0156–0.032 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from India

incidence: 1/5, conc.: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Africa; for detailed information please see the article

incidence: 1/2, conc.: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Australia and Brazil

AFLATOXIN G₁

incidence: 11/76, conc. range: 0.0017–0.0112 µg/l, sample year: 1998–2002, country: Canada¹²⁴²

incidence: 4/40, conc. range: 0.0017–0.0112 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from USA

incidence: 2/29, conc. range: 0.0017–0.0112 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from South Europe and Mediterranean; for detailed information please see the article

incidence: 4/43, conc. range: 0.0005–0.0034 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Europe and other countries; for detailed information please see the article

AFLATOXIN G₂

incidence: 10/76, conc. range: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴²

incidence: 10/40, conc. range: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from USA

incidence: 3/49, conc. range: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Mexico

incidence: 2/34, conc. range: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Caribbean; for detailed information please see the article

incidence: 10/29, conc. range: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from South Europe and Mediterranean; for detailed information please see the article

incidence: 12/43, conc. range: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Europe and other countries; for detailed information please see the article

incidence: 1/21, conc. range: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Asia; for detailed information please see the article

incidence: 1/5, conc.: 0.0009–0.0062 µg/l, sample year: 1998–2002, country: Canada¹²⁴², sa from Africa; for detailed information please see the article

AFLATOXIN

incidence: 1/20, conc.: 0.001 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from North America (1 sa co-contaminated with AF and OTA)

incidence: 2/3*, conc. range: 200–400 µg/l, Ø conc.: 300 µg/l, sample year: unknown, country: South Africa⁷⁸⁰, *commercial beer (Utshwala)

incidence: 1/11*, conc.: 12 µg/l, sample year: unknown, country: South Africa⁷⁸⁰, *home-brewed beer (Isiqatha)

incidence: 3/7*, conc. range: 2.1–7.1 µg/l, Ø conc.: 4.50 µg/l, sample year: 2009, country: Malawi/Botswana¹⁶⁴¹, sa from Malawi, *thobwa (sweet beer)

incidence: 5/5*, conc. range: 8.8–34.5 µg/l, Ø conc.: 22.32 µg/l, sample year: 2009, country: Malawi/Botswana¹⁶⁴¹, sa from Malawi, *opaque beer

AFLATOXINS (B₁, G₁)

incidence: 2/2*, conc. range: 253–262 µg/l, Ø conc.: 257.5 µg/kg, sample year: unknown, country: Nigeria⁴, *burukutu beer

incidence: 2/2*, conc. range: 92–142 µg/l, Ø conc.: 117 µg/kg, sample year: unknown, country: Nigeria⁴, *pito beer

STERIGMATOCYSTIN

incidence: 1/9*, conc.: 7.8 µg/l, sample year: unknown, country: Latvia/Belgium⁸²², sa from Latvia, *dark beer

incidence: 1/17*, conc.: 4.0 µg/l, sample year: unknown, country: Latvia/Belgium⁸²², sa from Latvia, *light beer

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 8/8*, conc. range: <0.05–0.17 µg/l, sample year: unknown, country: Germany²⁰², *dark beer

incidence: 1/3, conc.: 0.06 µg/l, sample year: unknown, country: Germany²⁰²

incidence: 19/22*, conc. range: <0.05–0.26 µg/l, sample year: unknown, country: Germany²⁰², *Pilsener

incidence: 2/2*, conc. range: <0.05–0.16 µg/l, sample year: unknown, country: Germany²⁰², *wheat beer

incidence: 31/40*, conc. range: 0.019–0.198 µg/l, sample year: 2003/2004, country: Belgium⁵⁵⁴, *conventional

incidence: 40/40*, conc. range: 0.018–1.134 µg/l, sample year: 2003/2004, country: Belgium⁵⁵⁴, *organic

incidence: 45/54*, conc. range: ≤0.126 µg/l, Ø conc.: 0.036 µg/l, sample year: unknown, country: Germany⁵⁸¹, *strong beer

incidence: 2/8*, conc. range: ≤0.047 µg/l, Ø conc.: 0.03 µg/l, sample year: unknown, country: Germany⁵⁸¹, *light beer

incidence: 13/24*, conc. range: ≤0.035 µg/l, Ø conc.: 0.020 µg/l, sample year: unknown, country: Germany⁵⁸¹, *non-alcoholic beer

incidence: 4/6*, conc. range: ≤0.019 µg/l, Ø conc.: 0.017 µg/l, sample year: unknown, country: Germany⁵⁸¹, *diet beer

incidence: 14/30*, conc. range: ≤0.081 µg/l, Ø conc.: 0.029 µg/l, sample year: unknown, country: Germany⁵⁸¹, *diet beer (Malztrunk)

incidence: 25/31*, conc. range: ≤0.123 µg/l, Ø conc.: 0.032 µg/kg, sample year: unknown, country: Germany⁵⁸¹, *Exportbier

incidence: 101/135*, conc. range: ≤0.137 µg/l, Ø conc.: 0.033 µg/kg, sample year: unknown, country: Germany⁵⁸¹, *Pilsener

incidence: 23/30*, conc. range: ≤0.293 µg/l, Ø conc.: 0.039 µg/l, sample year: unknown, country: Germany⁵⁸¹, *wheat beer

incidence: 3/4*, conc. range: <0.3–1.04 µg/l, sample year: unknown, country: Germany⁵⁹⁰, *strong wheat beer

incidence: 1/3*, conc.: 0.3 µg/l, sample year: unknown, country: Germany⁵⁹⁰, *wheat beer

incidence: 12/22*, conc. range: <0.3–1.53 µg/l, sample year: unknown, country: Germany⁵⁹⁰, *strong beer

incidence: 2/46, conc. range: 0.2–0.3 µg/l, Ø conc.: 0.2 µg/l, sample year: 2003, country: Korea⁵⁹⁹

incidence: 42/150, conc. range: 0.1–8.10 µg/l, sample year: unknown, country: Turkey⁶⁰⁸, sa from Turkey and imported

incidence: 14/21*, conc. range: ≤0.205 µg/l, sample year: unknown, country: Spain⁶⁰⁹, *alcoholic beer

incidence: 10/10*, conc. range: ≤0.152 µg/l, Ø conc.: 0.056 µg/l, sample year: unknown, country: Spain⁶⁰⁹, *non-alcoholic beer

incidence: 60/62, conc. range: 0.010–0.185 µg/l, Ø conc.: 0.033 µg/l, sample year: 1998–2001, country: Belgium⁶¹²

incidence: 2/2, conc. range: 0.010–0.087 µg/l, Ø conc.: 0.047 µg/l, sample year: 1998–2001, country: Belgium⁶¹², sa from Denmark

incidence: 4/4, conc. range: 0.013–0.018 µg/l, Ø conc.: 0.015 µg/l, sample year: 1998–2001, country: Belgium⁶¹², sa from France

incidence: 2/2, conc. range: 0.010–0.035 µg/l, Ø conc.: 0.021 µg/l, sample year: 1998–2001, country: Belgium⁶¹², sa from Germany

incidence: 2/2, conc. range: 0.063–0.069 µg/l, Ø conc.: 0.066 µg/l, sample year: 1998–2001, country: Belgium⁶¹², sa from Ireland

incidence: 2/2, conc. range: 0.012–0.013 µg/l, Ø conc.: 0.013 µg/l, sample year: 1998–2001, country: Belgium⁶¹², sa from Mexico

incidence: 2/2, conc. range: 0.024–0.060 µg/l, Ø conc.: 0.042 µg/l, sample year: 1998–2001, country: Belgium⁶¹², sa from Netherlands

incidence: 6/6, conc. range: 0.010–0.085 µg/l, Ø conc.: 0.035 µg/l, sample year: 1998–2001, country: Belgium⁶¹², sa from Scotland

incidence: 24/25, conc. range: ≤0.250 µg/l, sample year: unknown, country: Hungary⁶²³

incidence: 21/21, conc. range: ≤0.16 µg/kg, Ø conc.: 0.049 µg/l, sample year: 1995, country: Denmark⁶²⁴

incidence: 20/20, conc. range: 0.002–0.0311 µg/l, Ø conc.: 0.0096 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from North America (1 sa co-contaminated with AF and OTA)

incidence: 6/6, conc. range: 0.0023–0.0217 µg/l, Ø conc.: 0.0102 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Central America (2 sa co-contaminated with AFB₁ and OTA)

incidence: 2/4, conc. range: 0.0037–0.0099 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from South America (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁ and OTA)

incidence: 2/4, conc. range: 0.0022–0.0034 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Oceania

incidence: 1/1, conc.: 0.002 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Kenya (1 sa co-contaminated with AFB₁ and OTA)

incidence: 43/46, conc. range: 0.0017–0.0662 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Europe (1 sa co-contaminated with AFB₁, AFB₂ and OTA, 42 sa contaminated solely with OTA)

incidence: 12/13, conc. range: 0.0012–0.0492 µg/l, sample year: unknown, country: Japan⁶⁴⁷, sa from Asia (2 sa

co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁ and OTA, 9 sa contaminated solely with OTA)

incidence: 21/22*, conc. range: 0.0022–0.0448 µg/l, sample year: unknown, country: Japan⁶⁴⁷

incidence: 26/41, conc. range: ≤0.20 µg/l, sample year: unknown, country: Canada⁶⁶⁰, sa from Canada and imported

incidence: 2/107, conc. range: 0.051–0.1 µg/l, sample year: unknown, country: Canada⁶⁶⁴, sa from Canada, Europe, Orient, and USA

incidence: 3/10, conc. range: 0.02–0.022 µg/l, Ø conc.: 0.021 µg/l, sample year: unknown, country: Italy⁶⁸⁹

incidence: 27/51, conc. range: 0.010–0.135 µg/l, Ø conc.: 0.036 µg/l, sample year: unknown, country: Italy⁶⁸⁹, sa imported

incidence: 17/35*, conc. range: 0.010–0.100 µg/l, Ø conc.: 0.031 µg/l, sample year: unknown, country: Italy⁶⁸⁹, * <6 % alcohol

incidence: 13/26*, conc. range: 0.010–0.135 µg/l, Ø conc.: 0.040 µg/l, sample year: unknown, country: Italy⁶⁸⁹, * >6 % alcohol

incidence: 8/18*, conc. range: 0.010–0.079 µg/l, Ø conc.: 0.033 µg/l, sample year: unknown, country: Italy⁶⁸⁹, *pure malt beer

incidence: 7/7*, conc. range: 0.01–0.033 µg/l, sample year: unknown, country: Switzerland⁶⁹², *pale beer

incidence: 4/11*, conc. range: 1.5–2,340 µg/l, Ø conc.: 634 µg/l, sample year: unknown, country: South Africa⁷⁸⁰, *home-brewed beer (Isiqatha)

incidence: 3/11*, conc. range: 60–876 µg/l, Ø conc.: 379 µg/l, sample year: unknown, country: South Africa⁷⁸⁰, *home-brewed beer (Umqombothi)

incidence: 3/7*, conc. range: 150–1,100 µg/l, Ø conc.: 480 µg/l, sample year:

unknown, country: South Africa⁷⁸⁰,
*home-brewed beer (Imfulamfula)
incidence: 5/9, conc. range: 0.010–
0.026 µg/l, Ø conc.: 0.0196 µg/l, sample
year: unknown, country: Denmark⁸⁷⁰
incidence: 2/6*, conc. range: 0.36–
1.47 µg/kg, Ø conc.: 0.92 µg/kg, sample
year: 2002, country: Qatar⁸⁷⁸, *non-
alcoholic beer
incidence: 45/81, conc. range: ≤0.445 µg/
kg, Ø conc.: 0.031 µg/kg, sample year:
2004–2007, country: Japan⁹⁰⁰
incidence: 9/11, conc. range: ≤1.12 µg/l,
Ø conc.: 0.19 µg/kg, sample year:
unknown, country: Lebanon⁹¹¹
incidence: 5/12*, conc. range: 0.02–
0.14 µg/l, Ø conc.: 0.07 µg/l, sample year:
2004, country: Italy⁹²⁸, sa from Italy and
unknown origin, *bottled beer
incidence: 3/6*, conc. range: 0.04–
0.12 µg/l, Ø conc.: 0.09 µg/l, sample year:
2004, country: Italy⁹²⁸, sa from Italy and
unknown origin, *canned beer
incidence: 5/35, conc. range: 0.012–
0.045 µg/kg, sample year: 2007, country:
Turkey¹¹⁸⁴
incidence: 14/20, conc. range: 0.010–
0.054 µg/kg, Ø conc.: 0.019 µg/kg, sample
year: 2004/2005, country: Japan¹²¹⁵
incidence: 26/31, conc. range:
≤0.1468 µg/l, sample year: unknown,
country: Spain¹²⁶³
incidence: 10/15, conc. range:
≤0.2042 µg/l, country: Spain¹²⁶³, sample
year: unknown, sa from Germany
incidence: 6/8, conc. range: ≤0.096 µg/l,
country: Spain¹²⁶³, sample year: unknown,
sa from Denmark
incidence: 12/12, conc. range: 0.0114–
0.1320 µg/l, sample year: unknown,
country: Spain¹²⁶³, sa from Netherlands
incidence: 11/13, conc. range: ≤0.1204 µg/l,
sample year: unknown, country: Spain¹²⁶³,
sa from Belgium

incidence: 1/1, conc.: 0.2011 µg/l, sample
year: unknown, country: Spain¹²⁶³, sa from
Scotland
incidence: 1/1, conc.: 0.0555 µg/l, sample
year: unknown, country: Spain¹²⁶³, sa
made in EU
incidence: 3/4, conc. range: ≤0.1148 µg/l,
sample year: unknown, country: Spain¹²⁶³,
sa from USA
incidence: 2/2, conc. range: 0.0322–
0.101 µg/l, Ø conc.: 0.0666 µg/l, sample
year: unknown, country: Spain¹²⁶³, sa from
Mexico
incidence: 1/1, conc.: 0.0162 µg/l, sample
year: unknown, country: Spain¹²⁶³, sa from
Australia
incidence: 69/69, conc. range: 0.008–
0.498 µg/l, Ø conc.: 0.070 µg/l, sample
year: unknown, country: Spain¹²⁶⁴, 35
national and 34 imported sa
incidence: 6/16, conc. range: tr, sample
year: 2001, country: Brazil¹²⁷³
incidence: 2/4, conc. range: 0.026*–
0.082** µg/l, Ø conc.: 0.054 µg/l, sample
year: 2001, country: Brazil¹²⁷³, sa from
Germany**, Ireland, Italy*, and Mexico
incidence: 5/123, conc. range: 1.03–
18.0 µg/l, Ø conc.: 8.35 µg/l, sample year:
2003/2004, country: Brazil¹⁴⁰¹
incidence: 63/71, conc. range: 0.004–
0.126 µg/l, Ø conc.: 0.022 µg/l, sample
year: 2008, country: Spain¹⁵⁴²
incidence: 72/106, conc. range:
≤0.189 µg/l, Ø conc.: 0.019 µg/l, sample
year: 2010/2011, country: Italy¹⁵⁵⁸, sa from
different European countries; for detailed
information please see the article

Fusarium Toxins

DEOXYNIVALENOL

incidence: 20/20, conc. range: 5.1–35.9 µg/l,
Ø conc.: 17.8 µg, sample year: unknown,
country: Czech Republic¹⁰⁴, sa from
European market (20 sa co-contaminated
with DON, DON3G, and ADONS)

incidence: 8/9*, conc. range: 5–221 µg/l, Ø conc.: 58 µg/l, sample year: 1997, country: Argentina³³⁴, *bottom-fermented beers

incidence: 8/26*, conc. range: 4–42 µg/l, Ø conc.: 22 µg/l, sample year: 1998, country: Argentina³³⁴, *bottom-fermented beers

incidence: 6/14*, conc. range: 5–20 µg/l, Ø conc.: 12 µg/l, sample year: 1999, country: Argentina³³⁴, *bottom-fermented beers

incidence: 3/51*, conc. range: 26–41 µg/l, Ø conc.: 34.3 µg/l, sample year: 2000/2001, country: Netherlands³⁹³, sa from different EU-countries, *different kinds of beer

incidence: 8/33, conc. range: 1.0–5.3 µg/l, Ø conc.: 3.1 µg/l, sample year: unknown, country: Korea⁴⁷¹ (7 sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

incidence: 2/2*, conc. range: 18–23 µg/l, Ø conc.: 20.5 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported, *non-alcoholic beer

incidence: 2/3, conc. range: 3.8–10 µg/l, Ø conc.: 6.9 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported (2 sa co-contaminated with DON and NIV)

incidence: 2/2*, conc. range: 6.3–8.8 µg/l, Ø conc.: 7.6 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported, *draft beer (1 sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

incidence: 9/196, conc. range: 70–720 µg/l, Ø conc.: 303.3 µg/l, sample year: unknown, country: Germany⁴⁹²

incidence: 7/7, conc. range: 0.33–10.4 µg/l, Ø conc.: 2.64 µg/l, sample year: unknown, country: Canada⁵²² (1 sa co-contaminated with DON and NIV, 6 sa contaminated solely with DON)

incidence: 4/4*, conc. range: 0.48–12.5 µg/l, Ø conc.: 4.72 µg/l, sample year: unknown, country: Canada⁵²², *Lager beer

incidence: 3/4*, conc. range: 0.30–50.3 µg/l, Ø conc.: 19.78 µg/l, sample year: unknown, country: Canada⁵²², *Ale

incidence: 2/2*, conc. range: 1.60–6.73 µg/l, Ø conc.: 4.16 µg/l, sample year: unknown, country: Canada⁵²², *dry beer

incidence: 1/1*, conc.: 2.80 µg/l, sample year: unknown, country: Canada⁵²², *light beer

incidence: 1/1*, conc.: 0.49 µg/l, sample year: unknown, country: Canada⁵²², *premium beer

incidence: 2/2*, conc. range: 1.60–12.1 µg/l, Ø conc.: 6.85 µg/l, sample year: unknown, country: Canada⁵²², *non-alcoholic beer

incidence: 4/4*, conc. range: 1.50–2.00 µg/l, Ø conc.: 1.78 µg/l, sample year: unknown, country: Canada⁵²², sa imported; for detailed information please see the article

incidence: 1/1*, conc.: 15.8 µg/l, sample year: unknown, country: Canada⁵²², sa imported, *Pilsener beer; for detailed information please see the article

incidence: 1/1*, conc.: 1.10 µg/l, sample year: unknown, country: Canada⁵²², sa imported, *Lager beer (1 sa co-contaminated with DON and NIV); for detailed information please see the article

incidence: 1/1*, conc.: 2.90 µg/l, sample year: unknown, country: Canada⁵²², sa imported, *light beer; for detailed information please see the article

incidence: 1/1*, conc.: 11.4 µg/l, sample year: unknown, country: Canada⁵²², sa imported, *premium beer (1 sa co-contaminated with DON and NIV); for detailed information please see the article

incidence: 27/40*, conc. range: 6–22 µg/l, sample year: 2003/2004, country: Belgium⁵⁵⁴, *conventional

incidence: 32/40*, conc. range: 6–14 µg/l, sample year: 2003/2004, country: Belgium⁵⁵⁴, *organic

incidence: 3/26, conc. range: 8.4–28.6 µg/kg, Ø conc.: 20.9 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸

incidence: 1/70, conc.: 12 µg/kg, sample year: 2008, country: Spain⁹⁷⁷

incidence: 2/2*, conc. range: 6.7–20 µg/kg, Ø conc.: 13.35 µg/kg, sample year: unknown, country: South Africa/Rwanda/New Zealand⁹⁸⁹, sa from Rwanda, *banana beer (2 sa co-contaminated with DON, FB₁, and ZEA)

incidence: 39/39*, conc. range: 1.56–6.40 µg/l, Ø conc.: 3.29 µg/l, sample year: unknown, country: Kenya¹²⁶¹, *Tusker (30 sa co-contaminated with DON, FB₁, and ZEA, 9 sa co-contamination with DON and ZEA)

incidence: 36/36*, conc. range: 2.40–4.35 µg/l, Ø conc.: 3.57 µg/l, sample year: unknown, country: Kenya¹²⁶¹, *Pilsner (24 sa co-contaminated with DON, FB₁, and ZEA, 12 sa co-contaminated with DON and ZEA)

incidence: 3/26, Ø conc.: 22 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³

incidence: 25/33*, conc. range: 4.5–29.5 µg/l, Ø conc.: 10.2 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Austria, *commercial retail beer

incidence: 47/47*, conc. range: 4.1–56.7 µg/l, Ø conc.: 18.1 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Belgium, *commercial retail beer

incidence: 5/6*, conc. range: 4.0–12.2 µg/l, Ø conc.: 8.0 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Cyprus, *commercial retail beer

incidence: 17/17*, conc. range: 4.6–55.3 µg/l, Ø conc.: 21.5 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Czech Republic, *commercial retail beer

incidence: 9/9*, conc. range: 6.0–47.1 µg/l, Ø conc.: 19.9 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Denmark, *commercial retail beer

incidence: 24/27*, conc. range: 4.1–30.2 µg/l, Ø conc.: 11.0 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from France, *commercial retail beer

incidence: 3/4*, conc. range: 5.2–10.6 µg/l, Ø conc.: 7.4 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Finland, *commercial retail beer

incidence: 45/46*, conc. range: 4.0–40.5 µg/l, Ø conc.: 4.7 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Germany, *commercial retail beer

incidence: 4/4*, conc. range: 16.2–16.8 µg/l, Ø conc.: 17.0 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Greece, *commercial retail beer

incidence: 2/2*, conc. range: 10.5–11.1 µg/l, Ø conc.: 10.8 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Hungary, *commercial retail beer

incidence: 2/2*, conc. range: 7.7–9.6 µg/l, Ø conc.: 8.7 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Ireland, *commercial retail beer

incidence: 16/16*, conc. range: 5.0–29.4 µg/l, Ø conc.: 10.5 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Italy, *commercial retail beer

incidence: 3/4*, conc. range: 5.9–9.7 µg/l, Ø conc.: 8.0 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Netherlands, *commercial retail beer

incidence: 3/4*, conc. range: 6.0–9.9 µg/l, Ø conc.: 7.7 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Norway, *commercial retail beer

incidence: 10/10*, conc. range: 5.0–32.9 µg/l, Ø conc.: 17.2 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Poland, *commercial retail beer

incidence: 4/7*, conc. range: 5.1–14.6 µg/l, Ø conc.: 5.1 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Sweden, *commercial retail beer

incidence: 9/12*, conc. range: 5.5–36.9 µg/l, Ø conc.: 13.5 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Slovakia, *commercial retail beer

incidence: 6/13*, conc. range: 5.1–12.2 µg/l, Ø conc.: 7.3 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Spain, *commercial retail beer

incidence: 25/33*, conc. range: 4.1–30.8 µg/l, Ø conc.: 10.9 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from UK, *commercial retail beer

incidence: 15/17*, conc. range: 4.0–24.7 µg/l, Ø conc.: 10.1 µg/l, sample year: 2000–2002, country: Belgium/Bulgaria/Italy¹³¹⁷, sa from Non-European countries, *commercial retail beer; for detailed information please see the article

incidence: 59/77*, conc. range: 7–70 µg/l, sample year: 1994/1995, country: Czech Republic¹³⁸², *different kinds of beer

incidence: 4/5* **, conc. range: 800–3,200 µg/kg, Ø conc.: 1,350 µg/kg, sample year: unknown, country: USA¹³⁹³, *made from **Barley, Deoxynivalenol**, no¹³⁹³, and **Malt (barley), Deoxynivalenol** no¹³⁹³

incidence: 6/7, conc. range: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰

incidence: 4/8*, conc. range: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *low-malt-beer

incidence: 1/7*, conc. range: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *new genre beer

incidence: 1/2*, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *non-alcoholic beer

incidence: 117/217*, conc. range: <LOQ–89.3 µg/l, sample year: 2011/2012, country:

Austria¹⁵³⁸, sa from different countries, *pale beer (117 sa co-contaminated with DON and DON3G)

incidence: 36/46*, conc. range: 5.2–49.6 µg/l, Ø conc.: 14.6 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *wheat beer (32 sa co-contaminated with DON and DON3G)

incidence: 14/47*, conc. range: <LOQ–45.0 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *dark beer (14 sa co-contaminated with DON and DON3G)

incidence: 18/20*, conc. range: <LOQ–27.1 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *bock beer (18 sa co-contaminated with DON and DON3G)

incidence: 5/19*, conc. range: 3.2–26.1 µg/l, Ø conc.: 8.66 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *non-alcoholic beer (5 sa co-contaminated with DON and DON3G)

incidence: 13/25*, conc. range: <LOQ–12.7 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *shandy (13 sa co-contaminated with DON and DON3G)

incidence: 70/106, conc. range: ≤18.6 µg/l, Ø conc.: 2.1 µg/l, sample year: 2010/2011, country: Italy¹⁵⁵⁸, sa from different European countries; for detailed information please see the article

3-ACETYLDEOXYNIVALENOL +
15-ACETYLDEOXYNIVALENOL

incidence: 20/20, conc. range: 5.1–27.6 µg/l, Ø conc.: 10.4 µg/kg, sample year: unknown, country: Czech Republic¹⁰⁴, sa from European market (20 sa co-contaminated with DON, DON3G, and ADONS)

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 20/20, conc. range: 4.0–25.8 µg/l, Ø conc.: 10.6 µg/kg, sample year: unknown,

country: Czech Republic¹⁰⁴, sa from European market (20 sa co-contaminated with DON, DON3G, and ADONS)

incidence: 141/217*, conc. range: <LOQ–81.3 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *pale beer (117 sa co-contaminated with DON and DON3G)

incidence: 32/46*, conc. range: <LOQ–28.4 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *wheat beer (32 sa co-contaminated with DON and DON3G)

incidence: 28/47*, conc. range: 4.2–26.2 µg/l, Ø conc.: 6.9 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *dark beer (14 sa co-contaminated with DON and DON3G)

incidence: 20/20*, conc. range: 2.4–33.3 µg/l, Ø conc.: 14.8 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *bock beer (18 sa co-contaminated with DON and DON3G)

incidence: 9/19*, conc. range: 1.6–6.6 µg/l, Ø conc.: 2.99 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *non-alcoholic beer (5 sa co-contaminated with DON and DON3G)

incidence: 20/25*, conc. range: 1.8–7.9 µg/l, Ø conc.: 3.82 µg/l, sample year: 2011/2012, country: Austria¹⁵³⁸, sa from different countries, *shandy (13 sa co-contaminated with DON and DON3G)

FUMONISIN B₁

incidence: 20/46, conc. range: 0.2–52.8 µg/l, Ø conc.: 4.8 µg/l, sample year: unknown, country: Canada⁴⁰⁶

incidence: 10/30, conc. range: ≤12.9 µg/kg, Ø conc.: 4.7 µg/kg, sample year: 2006/2007, country: Japan⁹⁰⁰

incidence: 2/2*, conc. range: 31.3–34 µg/kg, Ø conc.: 32.65 µg/kg, sample year: unknown, country: South Africa/Rwanda/New Zealand⁹⁸⁹, sa from Rwanda, *banana beer (2 sa co-contaminated with DON, FB₁, and ZEA)

incidence: 30/39*, conc. range: ≤0.49 µg/l, sample year: unknown, country: Kenya¹²⁶¹, *Tusker (30 sa co-contaminated with DON, FB₁, and ZEA)

incidence: 24/36*, conc. range: ≤0.78 µg/l, sample year: unknown, country: Kenya¹²⁶¹, *Pilsner (24 sa co-contaminated with DON, FB₁, and ZEA)

incidence: 25/58, conc. range: 1.2–40 µg/l, Ø conc.: 9.39 µg/l, sample year: 2000/2001, country: Brazil¹⁴⁰¹

incidence: 18/18*, conc. range: 38–1,066 µg/l, Ø conc.: 281 µg/l, sample year: 2001–2004, country: South Africa¹⁴¹³, *home-brewed maize beer

incidence: 1/7, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰

incidence: 3/8*, conc. range: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *low-malt-beer

incidence: 1/7*, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *new genre beer

incidence: 32/33, conc. range: ≤30.3 µg/l, Ø conc.: 5.8 µg/l, sample year: 2010/2011, country: Italy¹⁵⁵⁸, sa from different European countries; for detailed information please see the article

FUMONISIN B₂

incidence: 7/46, conc. range: 0.4–11.5 µg/l, Ø conc.: 2 µg/l, sample year: unknown, country: Canada⁴⁰⁶

incidence: 17/18*, conc. range: 8–255 µg/l, Ø conc.: 69 µg/l, sample year: 2001–2004, country: South Africa¹⁴¹³, *home-brewed maize beer

incidence: 2/7, conc. range: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰

incidence: 1/8*, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *low-malt-beer

incidence: 19/33, conc. range: ≤3.9 µg/l, Ø conc.: 0.6 µg/l, sample year: 2010/2011, country: Italy¹⁵⁵⁸, sa from different European countries; for detailed information please see the article

FUMONISIN B₃

incidence: 12/18*, conc. range: 8–128 µg/l, Ø conc.: 35 µg/l, sample year: 2001–2004, country: South Africa¹⁴¹³, *home-brewed maize beer

incidence: 1/7, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰

incidence: 1/8*, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *low-malt-beer

FUMONISINS (B₁, B₂)

incidence: 25/29, conc. range: <0.3–13.5 µg/l, Ø conc.: 4.0 µg/l, sample year: unknown, country: USA³⁶⁸, sa from USA (25), Mexico (3), and Canada (1)

incidence: 64/216*, conc. range: ≤157.2 µg/kg, Ø conc.: 36.9 µg/kg, sample year: 2008/2009, country: Spain¹⁴³⁰, *corn-based beer

FUMONISINS

incidence: 2/2*, conc. range: 4.76–16.08 µg/l, sample year: 1996/1997, country: Spain⁴¹⁵, *non-alcoholic beer

incidence: 12/30, conc. range: 5.66–85.53 µg/l, sample year: 1996/1997, country: Spain⁴¹⁵, *alcoholic beer

NIVALENOL

incidence: 32/33, conc. range: <1.0–20 µg/l, Ø conc.: 6.5 µg/l, sample year: unknown, country: Korea⁴⁷¹ (7 sa co-contaminated with DON and NIV, 25 sa contaminated solely with NIV)

incidence: 1/1*, conc.: 9.0 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported, *non-alcoholic beer

incidence: 3/3*, conc. range: 24–38 µg/l, Ø conc.: 31.3 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported, *light beer

incidence: 3/3, conc. range: 1.3–2.5 µg/l, Ø conc.: 1.93 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported (2 sa co-contaminated with DON and NIV, 1 sa contaminated solely with NIV)

incidence: 3/3*, conc. range: 3.3–7.0 µg/l, Ø conc.: 4.6 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported, *light beer

incidence: 1/2*, conc.: 8.8 µg/l, sample year: unknown, country: Korea⁴⁷¹, sa imported, *draft beer (1 sa co-contaminated with DON and NIV)

incidence: 1/7, conc.: 0.12 µg/l, sample year: unknown, country: Canada⁵²² (1 sa co-contaminated with DON and NIV)

incidence: 1/1*, conc.: 0.1 µg/l, sample year: unknown, country: Canada⁵²², sa imported, *Lager beer (1 sa co-contaminated with DON and NIV); for detailed information please see the article

incidence: 1/1*, conc.: 0.84 µg/l, sample year: unknown, country: Canada⁵²², sa imported, *premium beer (1 sa co-contaminated with DON and NIV); for detailed information please see the article

incidence: 2/7, conc. range: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰

incidence: 2/8*, conc. range: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *low-malt-beer

incidence: 1/2?*, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *new genre beer

incidence: 1/2*, conc.: <5 µg/l, sample year: 2009, country: Japan¹⁴⁹⁰, *non-alcoholic beer

ZEARALENONE

incidence: 28/46*, conc. range: 12.50–200.00 µg/l, Ø conc.: 81.75 µg/l, sample year: 1984, country: Nigeria⁵⁰³, *pito beer

incidence: 4/11*, conc. range: 130–426 µg/l, sample year: unknown, Ø conc.: 250 µg/kg, country: South Africa⁷⁸⁰, *home-brewed beer (Isiqatha)

incidence: 2/11*, conc. range: 3–8 µg/l, Ø conc.: 5.5 µg/kg, sample year: unknown, country: South Africa⁷⁸⁰, *home-brewed beer (Umqombothi)

incidence: 1/7*, conc.: 2.6 µg/l, sample year: unknown, country: South Africa⁷⁸⁰, *home-brewed beer (Imfulamfula)

incidence: ?/23*, conc. range: 90–4,600 µg/l, sample year: unknown, country: Zambia/Canada⁷⁹⁷, sa from Zambia, *opaque maize beer

incidence: 2/2*, conc. range: 0.66–2.2 µg/kg, Ø conc.: 1.43 µg/kg, sample year: unknown, country: South Africa/Rwanda/New Zealand⁹⁸⁹, sa from Rwanda, *banana beer (2 sa co-contaminated with DON, FB₁, and ZEA)

incidence: 39/39*, conc. range: ≤0.001010 µg/l, Ø conc.: 0.00570 µg/l, sample year: unknown, country: Kenya¹²⁶¹, *Tusker (30 sa co-contaminated with DON, FB₁, and ZEA, 9 sa co-contamination with DON and ZEA)

incidence: 36/36*, conc. range: ≤0.001020 µg/l, Ø conc.: 0.00430 µg/l, sample year: unknown, country: Kenya¹²⁶¹, *Pilsner (24 sa co-contaminated with DON, FB₁, and ZEA, 12 sa co-contaminated with DON and ZEA)

incidence: 21/44, conc. range: 20–201 µg/l, sample year: unknown, country: Botswana¹²⁹⁸

incidence: 1/25, conc.: 37.8 µg/l*, sample year: unknown, country: Ireland¹³³³, *stout beer sa

incidence: 8/71, conc. range: ≤5.1 µg/kg, Ø conc.: 3.1 µg/kg*, sample year: 2008, country: Spain¹⁵³⁵, *of pos sa?

Berry (blueberries) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/12, conc.: 21 µg/kg (pulp), sample year: 1976, country: Sweden⁴⁸⁰

incidence: 3/16*, conc. range: ≤190 µg/kg, sample year: unknown, country: Sweden⁸⁸⁴, *frozen blueberries

Berry (grapes) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/3*, conc.: 4.0 µg/kg, sample year: unknown, country: Japan¹⁰²⁵, *grape soaked in syrup, puree, and liquor

incidence: 2/12* **, conc. range: 0.06–0.08 µg/kg, Ø conc.: 0.07 µg/kg, sample year: 2001/2002, country: Italy¹⁰⁵³, *Apulian wine grapes, ***Aspergillus* rotten berries

incidence: 12/12* **, conc. range: 0.06–681 µg/kg, Ø conc.: 108.46 µg/kg, sample year: 2001/2002, country: Italy¹⁰⁵³, *Apulian wine grapes, ***Aspergillus* rotten berries with *Lobesia botrana* larvae damages

incidence: 3/5* **, conc. range: 0.02–0.03 µg/kg, Ø conc.: 0.02 µg/kg, sample year: 2001/2002, country: Italy¹⁰⁵³, *Apulian wine grapes, **intact berries

incidence: 5/5* **, conc. range: 0.03–0.36 µg/kg, Ø conc.: 0.19 µg/kg, sample year: 2001/2002, country: Italy¹⁰⁵³, *Apulian wine grapes, ***Aspergillus* rotten berries

incidence: 5/5* **, conc. range: 0.09–9.59 µg/kg, Ø conc.: 5.22 µg/kg, sample year: 2001/2002, country: Italy¹⁰⁵³, *Apulian wine grapes, ***Aspergillus* rotten berries with *Lobesia botrana* larvae damages

incidence: 21/23*, conc. range: 0.10–0.50 µg/l (2 sa), 0.50–1.00 µg/l (6 sa), 1.00–2.00 µg/l (3 sa), >2.00–15.62 µg/l (10 sa), sample year: unknown, country: Spain¹²²⁶, *grapes dried by sun

incidence: 1/3*, conc.: 1.74 µg/l, sample year: unknown, country: Spain¹²²⁶, *grapes dried by warm chamber

incidence: 4/8*, conc. range: 0.50–1.00 µg/l (1 sa), 1.00–2.00 µg/l (1 sa), >2.00–4.79 µg/l (2 sa), sample year: unknown, country: Spain¹²²⁶, *grapes dried by fresh chamber

incidence: 15/50* **, conc. range: 0.50–2.69 µg/kg, Ø conc.: 0.962 µg/kg, sample year: 2005, country: Greece¹²⁶⁶, *grapes of different varieties from Greece, **table and wine-making grapes; for detailed information please see the article

OCHRATOXIN B

incidence: 1/3*, conc.: 1.8 µg/kg, sample year: unknown, country: Japan¹⁰²⁵, *grape soaked in syrup, puree, and liquor

Berry (lingonberries) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/2, conc.: 265 µg/kg (pulp), sample year: 1976, country: Sweden⁴⁸⁰

Berry (strawberries) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 4/10*, conc. range: 0.22–1.44 µg/kg, sample year: unknown, country: Germany²⁸⁹, *moldy

Betel nut may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 10/10*, conc. range: 2.1–10.2 µg/kg, sample year: unknown, country: South Africa¹⁸, sa imported, *sliced raw betel nut

incidence: 2/20*, conc. range: ≤0.1 µg/kg, sample year: unknown, country: South Africa¹⁸, sa imported, *boiled betel nut

incidence: 12/32, conc. range: 18–208 µg/kg, Ø conc.: 94.2 µg/kg, sample year: unknown, country: India²⁷

AFLATOXIN B₂

incidence: 10/10*, conc. range: 0.2–1.3 µg/kg, sample year: unknown, country: South Africa¹⁸, sa imported, *sliced raw betel nut

incidence: 6/32, conc. range: 10–52.0 µg/kg, Ø conc.: 24.3 µg/kg, sample year: unknown, country: India²⁷

AFLATOXIN G₁

incidence: 10/10*, conc. range: 0.2–16.6 µg/kg, sample year: unknown, country: South Africa¹⁸, sa imported, *sliced raw betel nut
incidence: 9/32, conc. range: tr–81.0 µg/kg, sample year: unknown, country: India²⁷

AFLATOXIN G₂

incidence: 10/10*, conc. range: 0.1–1.8 µg/kg, sample year: unknown, country: South Africa¹⁸, sa imported, *sliced raw betel nut
incidence: 3/32, conc. range: tr to <0.0 µg/kg, sample year: unknown, country: India²⁷

AFLATOXIN

incidence: 20/80, conc. range: <30 µg/kg, sample year: 1995–2003, country: Nepal²³⁹

Beverage may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/1*, conc.: 0.27 µg/kg, sample year: unknown, country: Germany⁹¹⁰, *fruit punch (1 sa co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/1*, conc.: 0.04 µg/kg, sample year: unknown, country: Germany⁹¹⁰, *fruit punch (1 sa co-contaminated with AME and AOH)

Aspergillus ToxinsAFLATOXIN B₁

incidence: 9/17*, conc. range: 10–50 µg/kg, Ø conc.: 23.3 µg/kg, sample year: 1988, country: Finland/Tanzania¹²⁹⁷, sa from Tanzania, *brewed and distilled beverages; for detailed information please see the article

incidence: 3/37*, conc. range: 1.2–3.1 µg/kg, Ø conc.: 2.4 µg/kg, sample year: unknown, country: Spain¹³⁹⁵, *tigernut beverage (3 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 12/190*, conc. range: 0.8–1.7 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴, *horchata: tiger-nut beverage

AFLATOXIN B₂

incidence: 3/37*, conc. range: 1.3–2.2 µg/kg, Ø conc.: 1.8 µg/kg, sample year: unknown, country: Spain¹³⁹⁵, *tigernut beverage (3 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 2/190*, conc. range: 1.1–1.6 µg/kg, Ø conc.: 1.35 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴, *horchata: tiger-nut beverage

AFLATOXIN G₂

incidence: 3/37*, conc. range: 1.3–1.4 µg/kg, Ø conc.: 1.4 µg/kg, sample year: unknown, country: Spain¹³⁹⁵, *tigernut beverage (3 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 1?/190*, conc. range: 1.2–2.3 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴, *horchata: tiger-nut beverage

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 11/41, conc. range: ≤0.039 µg/kg, Ø conc.: 0.026 µg/kg, sample year: 2006/2007, country: Japan⁹⁰⁰

incidence: 2/190*, conc. range: 2–2.4 µg/kg, Ø conc.: 2.2 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴, *horchata: tiger-nut beverage

Bhutanese cheese see Cheese (Bhutanese cheese)

Biscuit may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 82/102, conc. range: ≤3.814 µg/kg, sample year: unknown, country: Germany⁵⁹²

incidence: 65/67*, conc. range: ≤0.390 µg/kg, sample year: unknown, country: Germany⁵⁹², *biscuits with chocolate

incidence: 10/18*, conc. range: 0.2–0.5 µg/kg (6 sa), 0.6–1.0 µg/kg (2 sa), 4.1–7.0 µg/kg (2 sa, maximum: 6.4 µg/kg), sample year: unknown, country: UK⁷⁴⁰, *raw materials

Fusarium Toxins

DEOXYNIVALENOL

incidence: 49/60, conc. range: 10–100 µg/kg (48 sa), 315 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (10 sa co-contaminated with DON and NIV, 2 sa co-contaminated with DON and ZEA, 37 sa contaminated solely with DON)

incidence: 1/1* **, conc.: 62 µg/kg, sample year: unknown, country: UK⁸⁹⁹, *semi sweet biscuit, **made from **Flour (wheat)**, **Deoxynivalenol**, no⁸⁹⁹ fifth entry

incidence: 3/3* **, conc. range: 82–846 µg/kg, Ø conc.: 446.3 µg/kg, sample year: unknown, country: UK⁸⁹⁹, *crackers, **made from **Flour (wheat)**, **Deoxynivalenol**, no⁸⁹⁹ sixth entry

incidence: ?/4, conc. range: <100 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷

incidence: 3/8*, conc. range: 22.6–35.2 µg/kg, Ø conc.: 25.0 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸, *wheat-based biscuits

incidence: 3/8, Ø conc.: 25 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³

NIVALENOL

incidence: 11/60, conc. range: 10 to ≤24 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (10 sa co-contaminated with DON and NIV, 1 sa contaminated solely with NIV)

incidence: 1/2*, conc.: 11 µg/kg, sample year: unknown, country: UK⁸⁹⁹, *made from **Flour (wheat)**, **Deoxynivalenol**, no⁸⁹⁹

ZEARALENONE

incidence: 2/60, conc. range: 10.7–11.8 µg/kg, Ø conc.: 11.3 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (2 sa co-contaminated with DON and ZEA)

ZEARALENONE-4-SULFATE

incidence: 1/4, conc.: 1.5 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷

Black currant juice see Juice (currant)

Black pepper see Spices (pepper)

Black pudding see Sausage

Black radish may contain the following mycotoxins:

Fusarium Toxins**FUMONISIN B₁**

incidence: 1/6, conc.: 4 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet (1 sa co-contaminated with FB₁ and FB₂)

FUMONISIN B₂

incidence: 1/6, conc.: 2 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet (1 sa co-contaminated with FB₁ and FB₂)

Black tea see Tea

Bleu des Causses cheese see Cheese (Blue cheese)

Blood (pig blood) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 36/195, conc. range: 3–270 µg/l, sample year: 1982/1983, country: Poland/Sweden⁶²¹, sa from Poland

incidence: 63/105, conc. range: ≤122 µg/l, sample year: 1991/1992, country: Poland⁷²⁴

incidence: 147/255*, conc. range: 0.1–1 µg/l (98 sa), 1–5 µg/l (44 sa), 5–20 µg/l (5 sa), Ø conc.: 1.9 µg/l, sample year: 1989, country: Czechoslovakia¹⁰⁹³, *pig blood serum

incidence: 51*/533*, conc. range: ≥2 µg/l (35 sa), ≥5 µg/l (11 sa), ≥10 µg/l (5 sa), Ø conc.: 9.4 µg/l, sample year: 1987, country: Sweden¹¹⁴⁹, *swine herds

incidence: 26/122, conc. range: 2–62 µg/l, Ø conc.: 8.69 µg/l, sample year: 1983, country: Sweden¹¹⁵³

incidence: 26/45*, conc. range: 0.3–69.5 µg/l, sample year: 1999, country: Poland¹²⁰³, *porcine blood serum

Blueberries see Berry (blueberries)

Blue cheese see Cheese (Blue cheese)

Blue cheese dressing see Cheese (Blue cheese)

Bondakaledkai may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 22/54, conc. range: 3–1,500 µg/kg, sample year: 1991/1992, country: India¹⁴⁸

AFLATOXIN B₂

incidence: 14/54, conc. range: 3–370 µg/kg, sample year: 1991/1992, country: India¹⁴⁸

Bondakaledkai is a groundnut-based (whole seeds are used), spiced snack product.

Bran may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 12/43, conc. range: 1–5 µg/kg (12 sa, maximum: 4.9 µg/kg), sample year: 1990, country: UK⁶³⁶, sa from UK and different countries?

incidence: 4/5, conc. range: 0.1–0.2 µg/kg,
sample year: 2001, country: Poland¹¹⁵⁶

Claviceps Toxins

ERGOCORNINE

incidence: 4?/5*, Ø conc.: 0.9 µg/kg,
sample year: 1985/1986, country:
Canada¹⁴⁵⁹, *bran/bran
cereal

incidence: 7?/9*, Ø conc.: 0.1 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 8?/9*, Ø conc.: 4.6 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 3?/4*, Ø conc.: 3.8 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 1/2*, Ø conc.: 1.4 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*bran/bran cereal

incidence: 6?/6*, Ø conc.: 8.4 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *bran/bran cereal

ERGOCRISTINE

incidence: 4?/5*, Ø conc.: 1.9 µg/
kg, sample year: 1985/1986, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 7?/9*, Ø conc.: 7.1 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 8?/9*, Ø conc.: 19 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 3?/4*, Ø conc.: 16 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 1/2*, Ø conc.: 2.6 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*bran/bran cereal

incidence: 6?/6*, Ø conc.: 29 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *bran/bran cereal

ERGONOVINE

incidence: 4?/5*, Ø conc.: 7.4 µg/
kg, sample year: 1985/1986, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 7?/9*, Ø conc.: 2.5 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 8?/9*, Ø conc.: 4.1 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 3?/4*, Ø conc.: 7.4 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 1/2*, Ø conc.: 5.1 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*bran/bran cereal

incidence: 6?/6*, Ø conc.: 4.3 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *bran/bran cereal

ERGOSINE

incidence: 4?/5*, Ø conc.: 3.0 µg/
kg, sample year: 1985/1986, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 7?/9*, Ø conc.: 1.9 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 8?/9*, Ø conc.: 2.7 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 3?/4*, Ø conc.: 0.8 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 6?/6*, Ø conc.: 4.1 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *bran/bran cereal

ERGOTAMINE

incidence: 4?/5*, Ø conc.: 1.6 µg/
kg, sample year: 1985/1986, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 7?/9*, Ø conc.: 3.9 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 8?/9*, Ø conc.: 7.7 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 3?/4*, Ø conc.: 7.7 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 1/2*, Ø conc.: 2.4 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*bran/bran cereal

incidence: 6?/6*, Ø conc.: 11 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *bran/bran cereal

α-ERGOKRYPTINE

incidence: 7?/9*, Ø conc.: 0.7 µg/
kg, sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 8?/9*, Ø conc.: 5.8 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 3?/4*, Ø conc.: 2.0 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *bran/bran cereal

incidence: 6?/6*, Ø conc.: 12 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *bran/bran cereal

Fusarium Toxins

DEOXYNIVALENOL

incidence: ?/21, conc. range: ≤2,690 µg/kg,
Ø conc.: 810 µg/kg*, sample year: unknown,
country: Germany⁹⁴⁵, *of pos sa?

T-2 TOXIN

incidence: ?/21, conc. range: ≤2.9 µg/kg, Ø
conc.: 0.6 µg/kg*, sample year: unknown,
country: Germany⁹⁴⁵, *of pos sa?

Bran (barley bran) may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5/5*, conc. range: 720–1,950 µg/
kg, Ø conc.: 1,156 µg/kg, sample year:
unknown, country: Poland⁵⁸⁵, *ncac

Bran (maize bran) may contain the
following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 1/1*, conc.: 330 µg/kg, sample
year: 1990, country: USA⁴¹⁰, *corn bran
cereal (1 sa co-contaminated with FB₁ and
FB₂)

incidence: 4/4*, conc. range: 60–290 µg/kg,
Ø conc.: 157.5 µg/kg, sample year: 1991,
country: USA⁴¹⁰, *corn bran cereal (3 sa
co-contaminated with FB₁ and FB₂, 1 sa
contaminated solely with FB₁)

FUMONISIN B₂

incidence: 1/1*, conc.: 40 µg/kg, sample
year: 1990, country: USA⁴¹⁰, *corn bran
cereal (1 sa co-contaminated with FB₁ and
FB₂)

incidence: 3/4*, conc. range: 10–70 µg/kg,
Ø conc.: 33.3 µg/kg, sample year: 1991,
country: USA⁴¹⁰, *corn bran cereal (3 sa
co-contaminated with FB₁ and FB₂)

FUMONISINS (B₁, B₂, B₃)

incidence: 12/12, conc. range: 1,500–
3,200 µg/kg, Ø conc.: 2,075 µg/kg, sample
year: 1993, country: USA³⁷⁰

Bran (oat bran) may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 14/26, conc. range: ≤0.330 µg/
kg, sample year: 1996–1998, country:
Germany⁶⁹⁰

incidence: 6/30, conc. range: ≤0.4 µg/kg,
Ø conc.: 0.3 µg/kg, sample year: 2012,
country: Spain¹⁵⁷⁶

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/7, conc. range: 14–97 µg/kg,
Ø conc.: 46 µg/kg, sample year: 2000/2001,
country: Germany⁵²⁰

incidence: 1/15, conc.: 97 µg/kg, sample year: 2007/2008, country: Hungary⁸⁹¹
 incidence: 7/12, conc. range: ≤4.2 µg/kg, sample year: 2005/2006, country: Germany¹¹²²
 incidence: 5/30, conc. range: ≤276 µg/kg, Ø conc.: 230 µg/kg, sample year: 2012, country: Spain¹⁵⁷⁶

3-ACETYLDEOXYNIVALENOL

incidence: 3/12, conc. range: ≤0.75 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

15-ACETYLDEOXYNIVALENOL

incidence: 1/7, conc.: 16 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰
 incidence: 3/12, conc. range: ≤0.38 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

HT-2 TOXIN

incidence: 7/7, conc. range: 5–18 µg/kg, Ø conc.: 9 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰
 incidence: 12/12, conc. range: ≤32 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

NEOSOLANIOL

incidence: 12/12, conc. range: ≤0.81 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

NIVALENOL

incidence: 2/12, conc. range: ≤1.8 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

MONOACETOXYSCIRPENOL

incidence: 12/12, conc. range: ≤0.17 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

DIACETOXYSCIRPENOL

incidence: 9/12, conc. range: ≤0.12 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TOXIN

incidence: 3/7, conc. range: 6–9 µg/kg, Ø conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰
 incidence: 12/12, conc. range: ≤11 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TETRAOL

incidence: 12/12, conc. range: ≤26 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TRIOL

incidence: 7/12, conc. range: ≤1.5 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

ZEARALENONE

incidence: 3/7, conc. range: 2–18 µg/kg, Ø conc.: 7 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰
 incidence: 5/30, conc. range: ≤25 µg/kg, Ø conc.: 8 µg/kg, sample year: 2012, country: Spain¹⁵⁷⁶

Bran (rice bran) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 17/19, conc. range: ≥0.06 to ≤10.0 µg/kg (5 sa), >10.0 to ≤20.0 µg/kg (3 sa), >20.0 to ≤30.0 µg/kg (1 sa), >30.0 µg/kg (8 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰

AFLATOXIN

incidence: 1/2*, conc.: 26 µg/kg, sample year: 1988–1991, country: Nigeria¹⁰, *ncac

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 17/19, conc. range: ≥0.06 to ≤10.0 µg/kg (5 sa), >10.0 to ≤20.0 µg/kg (3 sa), >20.0 to ≤30.0 µg/kg (1 sa), >30.0 µg/kg (8 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (17 sa co-contaminated with AFS and ZEA, 14 sa

co-contaminated with AFS and OTA, 7 sa co-contaminated with AFS and CTV; no further information available)

Aspergillus and *Penicillium* Toxins

CITREOVIRIDIN

incidence: 7/19, conc. range: ≥ 0.9 to ≤ 10.0 $\mu\text{g}/\text{kg}$ (5 sa), > 10.0 to ≤ 30.0 $\mu\text{g}/\text{kg}$ (1 sa), > 30.0 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (7 sa co-contaminated with AFS and CTV, 6 sa co-contaminated with CTV and OTA, 7 sa co-contaminated with CTV and ZEA; no further information available)

OCHRATOXIN A

incidence: 14/19, conc. range: ≥ 0.02 to ≤ 10.0 $\mu\text{g}/\text{kg}$ (9 sa), > 10.0 $\mu\text{g}/\text{kg}$ (5 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (14 sa co-contaminated with AFS and OTA, 6 sa co-contaminated with CTV and OTA; no further information available)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/19, conc.: ≥ 30.00 $\mu\text{g}/\text{kg}$, sample year: 2007–2009, country: Brazil¹⁴⁶⁰

ZEARALENONE

incidence: 18[?]/19, conc. range: ≥ 3.6 to ≤ 200.0 $\mu\text{g}/\text{kg}$ (4 sa), > 200.0 to ≤ 400.0 $\mu\text{g}/\text{kg}$ (4 sa), > 400.0 $\mu\text{g}/\text{kg}$ (10 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (17 sa co-contamination with AFS and ZEA, 7 sa co-contaminated with CTV and ZEA; no further information available)

Bran (wheat bran) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 2/10, \emptyset conc.: 310 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt²⁹¹
incidence: 4/8*, conc. range: 2.1–63 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18.53 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada¹⁶³⁰, *included

whole, hard, soft, and durum wheat bran (4 sa co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/10, conc.: 460 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt²⁹¹
incidence: 4/8*, conc. range: 1.0–8.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3.73 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada¹⁶³⁰, *included whole, hard, soft, and durum wheat bran (4 sa co-contaminated with AME and AOH)

TENUAZONIC ACID

incidence: 4/10, \emptyset conc.: 200.5 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt²⁹¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 74/120*, conc. range: 0.05–4.9 $\mu\text{g}/\text{kg}$ (72 sa), 5–25 $\mu\text{g}/\text{kg}$ (2 sa, maximum: 12 $\mu\text{g}/\text{kg}$), sample year: 1986–1992, country: Denmark⁶²⁵, *conventional
incidence: 15/22*, conc. range: 0.05–4.9 $\mu\text{g}/\text{kg}$ (maximum: 2.6 $\mu\text{g}/\text{kg}$), sample year: 1986–1992, country: Denmark⁶²⁵, *ecological

incidence: 3/25, conc. range: ≤ 1.590 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰

incidence: 4/26*, conc. range: ≤ 1.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.6 $\mu\text{g}/\text{kg}$, sample year: 2012, country: Spain¹⁵⁷⁶, *conventional

incidence: 5/11*, conc. range: ≤ 2.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.4 $\mu\text{g}/\text{kg}$, sample year: 2012, country: Spain¹⁵⁷⁶, *organic

Fusarium Toxins

DEOXYNIVALENOL

incidence: 16/24, conc. range: 101–1,000 $\mu\text{g}/\text{kg}$ (8 sa), 1,001–5,000 $\mu\text{g}/\text{kg}$ (4 sa), $> 5,001$ $\mu\text{g}/\text{kg}$ (4 sa), sample year: unknown, country: Portugal³¹⁵
incidence: 2/17, conc. range: 50–80 $\mu\text{g}/\text{kg}$, \emptyset conc.: 65 $\mu\text{g}/\text{kg}$, sample year: unknown,

country: Poland⁴³⁹ (1 sa co-contaminated with DAS, DON, NIV, and T-2, 1 sa co-contaminated with DON and NIV)

incidence: 5/5, conc. range: 319–389 µg/kg, Ø conc.: 360 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 1/2, conc.: 45 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia

incidence: 17/20, conc. range: ≤2,100 µg/kg, Ø conc.: 830 µg/kg, sample year: 1999, country: Germany⁵⁷⁷

incidence: 18/20, conc. range: ≤1,308 µg/kg, sample year: 2007/2008, country: Hungary⁸⁹¹

incidence: 10/10, conc. range: ≤1,163 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 82/163, conc. range: 150–2,920 µg/kg, sample year: 1994, country: USA¹⁴⁵⁵

incidence: 15/26*, conc. range: ≤6,178 µg/kg, Ø conc.: 1,657 µg/kg, sample year: 2012, country: Spain¹⁵⁷⁶, *conventional

incidence: 8/11*, conc. range: ≤1,662 µg/kg, Ø conc.: 655 µg/kg, sample year: 2012, country: Spain¹⁵⁷⁶, *organic

3-ACETYLDEOXYNIVALENOL

incidence: 7/10, conc. range: ≤15 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

15-ACETYLDEOXYNIVALENOL

incidence: 1/5, conc.: 11 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 8/10, conc. range: ≤26 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

HT-2 TOXIN

incidence: 5/5, conc. range: 5–33 µg/kg, Ø conc.: 13 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 10/10, conc. range: ≤22 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

NEOSOLANIOL

incidence: 9/10, conc. range: ≤0.40 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

NIVALENOL

incidence: 4/17, conc. range: 100–240 µg/kg, Ø conc.: 152.5 µg/kg, sample year: unknown, country: Poland⁴³⁹

(1 sa co-contaminated with DAS, DON, NIV, and T-2, 1 sa co-contaminated with DON and NIV, 2 sa contaminated solely with NIV)

incidence: 5/5, conc. range: 21–65 µg/kg, Ø conc.: 37 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 1/2, conc.: 19 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia

incidence: 9/10, conc. range: ≤96 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

MONOACETOXYSCIRPENOL

incidence: 10/10, conc. range: ≤5.9 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

DIACETOXYSCIRPENOL

incidence: 1/17, conc.: 50 µg/kg, sample year: unknown, country: Poland⁴³⁹
(1 sa co-contaminated with DAS, DON, NIV, and T-2)

incidence: 2/10, conc. range: ≤0.25 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TOXIN

incidence: 1/17, conc.: 100 µg/kg, sample year: unknown, country: Poland⁴³⁹
(1 sa co-contaminated with DAS, DON, NIV, and T-2)

incidence: 1/5, conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 10/10, conc. range: ≤1.9 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TETRAOL

incidence: 3/5, conc. range: 11–15 µg/kg,
 Ø conc.: 14 µg/kg, sample year: 2000/2001,
 country: Germany⁵²⁰

incidence: 10/10, conc. range: ≤83 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

T-2 TRIOL

incidence: 8/10, conc. range: ≤1.3 µg/
 kg, sample year: 2005/2006, country:
 Germany¹¹²²

ZEARELENONE

incidence: 4/5, conc. range: 3–67 µg/kg,
 Ø conc.: 29 µg/kg, sample year: 2000/2001,
 country: Germany⁵²⁰

incidence: 3/9, conc. range: 2–5 µg/kg (2
 sa), 22.6 µg/kg (1 sa), sample year: 1999–
 2001, country: Switzerland¹³⁶⁰

incidence: 4/26*, conc. range: ≤9 µg/kg, Ø
 conc.: 4 µg/kg, sample year: 2012, country:
 Spain¹⁵⁷⁶, *conventional

incidence: 1/11*, conc.: 21 µg/kg, sample
 year: 2012, country: Spain¹⁵⁷⁶, *organic

Brazil nuts see Nut (Brazil nuts,
 paranuts)

Bread may contain the following
 mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 29/29*, conc. range: 0.4–6.7 µg/
 kg, Ø conc.: 1.79 µg/kg, sample year:
 unknown, country: Canada¹⁶³⁰, *different
 kinds of bread (22 sa co-contaminated
 with AME and AOH, 7 sa contaminated
 solely with AOH)

ALTERNARIOL METHYL ETHER

incidence: 22/29*, conc. range: 0.2–3.0 µg/
 kg, Ø conc.: 0.75 µg/kg, sample year:
 unknown, country: Canada¹⁶³⁰, *different
 kinds of bread (22 sa co-contaminated
 with AME and AOH)

Aspergillus ToxinsAFLATOXIN B₁

incidence: 4*/18**, conc. range:
 5–60 µg/kg, sample year: unknown,
 country: Germany⁶⁷, *moldy, **whole-meal
 wheat bread

incidence: 2*/18**, conc. range: 20–25 µg/
 kg, Ø conc.: 22.5 µg/kg, sample year:
 unknown, country: Germany⁶⁷, *moldy,
 **white bread

incidence: 1*/14**, conc.: 10 µg/kg,
 sample year: unknown, country:
 Germany⁶⁷, *moldy, **German bread
 “Landbrot” made from 80 % wheat flour
 and 20 % rye flour bread

incidence: 12/76*, conc. range: 22–348 µg/
 kg, Ø conc.: 146 µg/kg, sample year: 1990,
 country: India¹⁴¹⁴, *bread collected during
 monsoon season

AFLATOXIN B₂

incidence: 4/76*, conc. range: 20–45 µg/kg,
 Ø conc.: 32.75 µg/kg, sample year: 1990,
 country: India¹⁴¹⁴, *bread collected during
 monsoon season

AFLATOXIN G₁

incidence: 1/76*, conc.: 148 µg/kg, sample
 year: 1990, country: India¹⁴¹⁴, *bread
 collected during monsoon season

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/4*, conc.: 3.3 µg/kg, sample
 year: unknown, country: UK⁷³², *nan
 bread

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 3/76*, conc. range: 46–198 µg/
 kg, Ø conc.: 116 µg/kg, sample year: 1990,
 country: India¹⁴¹⁴, *bread collected during
 monsoon season

OCHRATOXIN A

incidence: 1/50*, conc.: 210 µg/kg,
 sample year: unknown, country: UK⁶⁴⁹,
 *moldy

incidence: 55/64*, conc. range: ≤ 2.288 $\mu\text{g}/\text{kg}$, country: sample year: 1996–1998, Germany⁶⁹⁰, *Pumpernickel

incidence: 110/125*, conc. range: ≤ 2.089 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *mixed wheat bread

incidence: 121/128*, conc. range: ≤ 2.244 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *mixed rye bread

incidence: 48/57*, conc. range: ≤ 1.905 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *white bread

incidence: 89/96*, conc. range: ≤ 5.488 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *rye wholemeal bread

incidence: 48/49*, conc. range: ≤ 1.757 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *multigrain bread

incidence: 98/101*, conc. range: ≤ 2.440 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *multigrain bread with oilseeds

incidence: 13/13*, conc. range: ≤ 0.401 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *wheat wholemeal bread

incidence: 52/59*, conc. range: ≤ 0.584 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *toast bread

incidence: 62/87*, conc. range: ≤ 0.437 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *crispbread

incidence: ?/4*, conc. range: 0.2–0.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁷³², *pitta bread

incidence: ?/4*, conc. range: 0.5–0.9 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁷³², *chapatti bread

incidence: 37/50*, conc. range: ≤ 0.49 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.24 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Portugal⁹³², *wheat bread

incidence: 93/93*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (69 sa), 0.50–0.99 $\mu\text{g}/\text{kg}$ (20 sa), 1.00–2.99 $\mu\text{g}/\text{kg}$ (3 sa), 7.371 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 0.45 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, *wheat bread

incidence: 29/29*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (21 sa), 0.50–0.99 $\mu\text{g}/\text{kg}$ (7 sa), 1.065 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 0.39 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Netherlands, *wheat bread

incidence: 24/24*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (19 sa), 0.50–0.99 $\mu\text{g}/\text{kg}$ (4 sa), 2.002 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 0.41 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from USA, *wheat bread

incidence: 20/20*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (19 sa), 0.608 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 0.07 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Switzerland, *wheat bread

incidence: 15/15*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (14 sa), 0.589 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 0.09 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Brazil, *wheat bread

incidence: 14/14*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (13 sa), 0.569 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 0.25 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from France, *wheat bread

incidence: 12/12*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (10 sa), 0.50–0.99 $\mu\text{g}/\text{kg}$ (2 sa), maximum: 0.879 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.34 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Italy, *wheat bread

incidence: 11/11*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (9 sa), 0.50–0.99 $\mu\text{g}/\text{kg}$ (1 sa), 1.310 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 0.35 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Germany, *wheat bread

incidence: 9/9*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (5 sa), 0.50–0.99 $\mu\text{g}/\text{kg}$ (4 sa), maximum: 0.657 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.36 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Ireland, *wheat bread

incidence: 9/9*, conc. range: LOD/LOQ–0.49 $\mu\text{g}/\text{kg}$ (9 sa, maximum: 0.122 $\mu\text{g}/\text{kg}$), \emptyset conc.: 0.08 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Austria, *wheat bread

incidence: 9/9*, conc. range: LOD/LOQ–0.49 µg/kg (9 sa, maximum: 0.478 µg/kg), Ø conc.: 0.30 µg/kg, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Tunisia, *wheat bread

incidence: 7/7*, conc. range: LOD/LOQ–0.49 µg/kg (6 sa), 0.746 µg/kg (1 sa), Ø conc.: 0.23 µg/kg, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Belgium, *wheat bread

incidence: 3/3*, conc. range: LOD/LOQ–0.49 µg/kg (3 sa, maximum: 0.215 µg/kg), Ø conc.: 0.09 µg/kg, sample year: 1998–2000, country: Spain⁹⁷⁶, sa from Hungary, *wheat bread

incidence: 43/100, conc. range: 0.14–149 µg/kg, Ø conc.: 13.00 µg/kg, sample year: 2006, country: Morocco⁹⁸⁸

incidence: 4/5*, conc. range: ≤0.36 µg/kg, Ø conc.: 0.28 µg/kg, sample year: 2007/2008, country: Portugal¹⁰⁶⁵, *maize bread

incidence: 19/24*, conc. range: ≤0.41 µg/kg, Ø conc.: 0.21 µg/kg, sample year: 2007/2008, country: Portugal¹⁰⁶⁵, *wheat bread

incidence: 5/12*, conc. range: tr, sample year: 2007/2008, country: Portugal¹⁰⁶⁵, *Mafra-type wheat bread

incidence: 15*/74**, conc. range: 0.04–19.61 µg/kg, sample year: unknown, country: Spain¹¹¹⁸, *contaminated sa from Italy and Spain, **conventional wheat, whole wheat and other cereals breads; for detailed information please see the article

incidence: 6*/26**, conc. range: 0.03–0.81 µg/kg, sample year: unknown, country: Spain¹¹¹⁸, *contaminated sa from Spain and UK, **organic wheat, whole wheat and other cereals breads; for detailed information please see the article

incidence: 2/20, conc. range: 1.82–2.55 µg/kg, Ø conc.: 2.19 µg/kg, sample year: unknown, country: Spain¹¹²⁰

incidence: 2/23*, conc. range: 6.5–8.0 µg/kg, Ø conc.: 7.25 µg/kg, sample year:

1990–1992, country: Poland¹¹⁵⁶, *mixed rye-wheat bread

incidence: 6/44*, conc. range: 3–16 µg/kg, sample year: 1990–1992, country: Poland¹¹⁵⁶, *rye bread

incidence: 1/11*, conc.: 5 µg/kg, sample year: 1990–1992, country: Poland¹¹⁵⁶, *crunched rye bread

incidence: 9/15*, conc. range: 0.033–2.65 µg/kg, sample year: 2005, country: Portugal/Spain¹¹⁸⁰, sa from Portugal, *maize bread

incidence: 21/30*, conc. range: 0.033–5.86 µg/kg, sample year: 2005/2006, country: Spain/Portugal¹¹⁸², sa from Portugal, *maize bread

incidence: 4/31*, conc. range: 0.033–0.26 µg/kg, sample year: 2005/2006, country: Spain/Portugal¹¹⁸², sa from Portugal, *wheat bread

incidence: 3/76*, conc. range: 76–168 µg/kg, Ø conc.: 114 µg/kg, sample year: 1990, country: India¹⁴¹⁴, *bread collected during monsoon season

incidence: 9/70*, conc. range: 0.162–0.658 µg/kg, Ø conc.: 0.283 µg/kg, sample year: 2008, country: Spain¹⁵⁴², *loaf bread (white and wholemeal)

incidence: 1/10, conc.: 0.01 µg/kg, sample year: unknown, country: China¹⁵⁵⁴

Claviceps Toxins

ERGOCORNINE

incidence: 2*/3*, conc. range: 1.2–2.0 µg/kg, Ø conc.: 1.6 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *rye bread, dried

incidence: 16*/20*, Ø conc.: 11 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹, *included rye bread, crackers, and crispbread

incidence: 11*/39*, Ø conc.: 3.6 µg/kg, sample year: 1987/1988, country: Canada¹⁴⁵⁹, *included rye bread, crackers, and crispbread

incidence: 15?/30, Ø conc.: 1.7 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 4?/6, Ø conc.: 0.3 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*included rye bread, crackers, and
crispbread

incidence: 6?/19, Ø conc.: 1.3 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

ERGOCRISTINE

incidence: 3/3*, conc. range: 2.1–5.4 µg/
kg, Ø conc.: 4.03 µg/kg, sample year:
unknown, country: Canada⁸⁰⁶, *wheat
bread, dried

incidence: 3/3*, conc. range: 5.9–10 µg/kg,
Ø conc.: 8.53 µg/kg, sample year:
unknown, country: Canada⁸⁰⁶, *rye bread,
dried

incidence: 16?/20*, Ø conc.: 14 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 11?/39*, Ø conc.: 11 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 15?/30, Ø conc.: 8.1 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 4?/6, Ø conc.: 1.0 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*included rye bread, crackers, and
crispbread

incidence: 6?/19, Ø conc.: 1.5 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

ERGOMETRINE

incidence: 2?/3*, conc. range: 1.7–2.3 µg/kg,
Ø conc.: 2.0 µg/kg, sample year: unknown,
country: Canada⁸⁰⁶, *rye bread, dried

ERGONOVINE

incidence: 16?/20*, Ø conc.: 5.2 µg/
kg, sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 11?/39*, Ø conc.: 2.3 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 15?/30, Ø conc.: 4.1 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 4?/6, Ø conc.: <1 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*included rye bread, crackers, and
crispbread

incidence: 6?/19, Ø conc.: 1.8 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

ERGOSINE

incidence: 2?/3*, conc. range: 2.9–4.4 µg/
kg, Ø conc.: 3.65 µg/kg, sample year:
unknown, country: Canada⁸⁰⁶, *rye bread,
dried

incidence: 16?/20*, Ø conc.: 24 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 11?/39*, Ø conc.: 4.1 µg/kg,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 15?/30, Ø conc.: 2.8 µg/kg,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

incidence: 4?/6, Ø conc.: 1.6 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹,
*included rye bread, crackers, and crispbread

incidence: 6?/19, Ø conc.: 0.5 µg/kg,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹, *included rye bread, crackers,
and crispbread

ERGOTAMINE

incidence: 3/3*, conc. range: 4.3–8.4 µg/kg,
 Ø conc.: 6.6 µg/kg, sample year: unknown,
 country: Canada⁸⁰⁶, *wheat bread, dried

incidence: 3/3*, conc. range: 3.6–7.5 µg/kg,
 Ø conc.: 6.13 µg/kg, sample year:
 unknown, country: Canada⁸⁰⁶, *rye bread,
 dried

incidence: 16?/20*, Ø conc.: 43 µg/kg,
 sample year: 1986/1987, country:
 Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

incidence: 11?/39*, Ø conc.: 5.8 µg/kg,
 sample year: 1987/1988, country:
 Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

incidence: 15?/30, Ø conc.: 4.8 µg/kg,
 sample year: 1988/1989, country:
 Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

incidence: 4?/6, Ø conc.: 1.6 µg/kg, sample
 year: 1989/1990, country: Canada¹⁴⁵⁹,
 *included rye bread, crackers, and
 crispbread

incidence: 6?/19, Ø conc.: 2.7 µg/kg,
 sample year: 1990/1991, country:
 Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

α-ERGOKRYPTINE

incidence: 2/3*, conc. range: 0.8–1.0 µg/kg,
 Ø conc.: 0.9 µg/kg, sample year: unknown,
 country: Canada⁸⁰⁶, *wheat bread, dried

incidence: 3/3*, conc. range: 1.4–2.4 µg/kg,
 Ø conc.: 1.9 µg/kg, sample year: unknown,
 country: Canada⁸⁰⁶, *rye bread, dried

incidence: 16?/20*, Ø conc.: 3.2 µg/kg,
 sample year: 1986/1987, country:
 Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

incidence: 11?/39*, Ø conc.: 3.5 µg/kg,
 sample year: 1987/1988, country:
 Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

incidence: 15?/30, Ø conc.: 3.2 µg/kg,
 sample year: 1988/1989, country:

Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

incidence: 4?/6, Ø conc.: 0.5 µg/kg, sample
 year: 1989/1990, country: Canada¹⁴⁵⁹,
 *included rye bread, crackers, and
 crispbread

incidence: 6?/19, Ø conc.: 0.7 µg/kg,
 sample year: 1990/1991, country:
 Canada¹⁴⁵⁹, *included rye bread, crackers,
 and crispbread

Fusarium Toxins

DEOXYNIVALENOL

incidence: 5/30*, conc. range:
 140–1,130 µg/kg, Ø conc.: 370 µg/kg,
 sample year: 2007, country: Thailand/
 Japan⁵⁰, sa from Thailand, *breads
 and crackers

incidence: 1/20, conc.: 170 µg/kg, sample
 year: unknown, country: Egypt⁴²⁷

incidence: 8/8*, conc. range: 212–2,800 µg/
 kg, sample year: 1993/1994, country:
 Argentina⁵⁰⁵, *"figazzas"; for detailed
 information please see the article

incidence: 10/12*, conc. range: 198–
 436 µg/kg, sample year: 1993/1994,
 country: Argentina⁵⁰⁵, *French bread

incidence: 4/4*, conc. range: 269–384 µg/
 kg, sample year: 1993/1994, country:
 Argentina⁵⁰⁵, *homemade bread

incidence: 4/4*, conc. range: 210–1,023 µg/
 kg, sample year: 1993/1994, country:
 Argentina⁵⁰⁵, *"libritos"; for detailed
 information please see the article

incidence: 1/1*, conc.: 378 µg/kg, sample
 year: 1993/1994, country: Argentina⁵⁰⁵,
 *bran bread

incidence: 80/96*, conc. range: 15–788 µg/
 kg, Ø conc.: 92 µg/kg, sample year: 1998,
 country: Germany⁵¹⁷, *bread and related
 products

incidence: 93/101*, conc. range:
 15–690 µg/kg, Ø conc.: 155 µg/kg, sample
 year: 1999, country: Germany⁵¹⁸,
 *included rye-, mixed rye-, wheat-, mixed
 wheat bread

incidence: 8/10* **, conc. range: 15–142 µg/kg, Ø conc.: 59 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *rye bread, **conventional

incidence: 3/4* **, conc. range: 15–25 µg/kg, Ø conc.: 18 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *rye bread, **organic

incidence: 22/22* **, conc. range: 32–378 µg/kg, Ø conc.: 155 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *mixed rye bread, **conventional

incidence: 6/7* **, conc. range: 15–211 µg/kg, Ø conc.: 71 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *mixed rye bread, **organic

incidence: 21/22* **, conc. range: 70–690 µg/kg, Ø conc.: 280 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *mixed wheat bread, **conventional

incidence: 9/12* **, conc. range: 15–92 µg/kg, Ø conc.: 47 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *mixed wheat bread, **organic

incidence: 20/20* **, conc. range: 15–382 µg/kg, Ø conc.: 167 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *wheat bread, **conventional

incidence: 4/4* **, conc. range: 15–224 µg/kg, Ø conc.: 116 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *wheat bread, **organic

incidence: 20/25, conc. range: ≤240 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵

incidence: ?/4*, conc. range: 8–28 µg/kg, sample year: unknown, country: UK⁷³², *pitta bread

incidence: ?/4*, conc. range: 6–10 µg/kg, sample year: unknown, country: UK⁷³², *chapatti bread

incidence: ?/4*, conc. range: 5–12 µg/kg, sample year: unknown, country: UK⁷³², *nan bread

incidence: 57/60, conc. range: 10–100 µg/kg (47 sa), >100–250 µg/kg (9 sa), 366 µg/kg

(1 sa), sample year: 2000/2001, country: UK⁸³⁶ (9 sa co-contaminated with DON and NIV, 1 sa co-contaminated with DON and ZEA, 47 sa contaminated solely with DON)

incidence: 13/13* **, conc. range: 51–309 µg/kg^{***}, Ø conc.: 138.2 µg/kg^{***}, sample year: unknown, country: UK⁸⁹⁹, *white bread, **made from Flour (wheat), Deoxynivalenol, no⁸⁹⁹, first entry, ***dry weight basis

incidence: 7/7*, conc. range: 46–208 µg/kg^{**}, Ø conc.: 117.4 µg/kg^{**}, sample year: unknown, country: UK⁸⁹⁹, *made from Flour (wheat), Deoxynivalenol, no⁸⁹⁹, second entry, **dry weight basis

incidence: ?/4*, conc. range: <100 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, *wheat bread

incidence: ?/3*, conc. range: <100 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *wheat bread-wholemeal

incidence: 3/8*, conc. range: 37.5–78.1 µg/kg, Ø conc.: 52.3 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸, *wheat-based bread

incidence: ?/88*, conc. range: ≤2,350 µg/kg, Ø conc.: 110 µg/kg^{**}, sample year: unknown, country: Germany⁹⁴⁵, *bread and pastries, **of pos sa?

incidence: 12/72*, conc. range: ≤98 µg/kg, Ø conc.: 68 µg/kg, sample year: 2008, country: Spain⁹⁷⁷, *sliced bread

incidence: 31/31, conc. range: ≤739 µg/kg, Ø conc.: 246 µg/kg, sample year: 2008, country: Spain⁹⁷⁷

incidence: 3/8, Ø conc.: 52 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³

incidence: 5/12*, conc. range: 12.2–19.7 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *baguette

incidence: 1/5*, conc.: 24.7 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *baguette (whole wheat)

incidence: 1/4*, conc.: 12.5 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *milk bread

incidence: 3/14*, conc. range: 39.0–146.6 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *slim bread

incidence: 4/11*, conc. range: 13.1–40.7 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *slim bread (whole wheat)

incidence: 3/9*, conc. range: 22.1–52.7 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *milled bread

incidence: 1/3*, conc.: 105.30 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *pita bread (whole wheat)

incidence: 1/4, conc.: 72.5 µg/kg, sample year: unknown, country: Spain¹³⁷⁸

incidence: 2/8*, conc. range: 12.4–18.7 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *multi-cereal bread

incidence: 6/6, conc. range: ≤102 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, and ZEA4G, 1 sa co-contaminated with DON, 3-AcDON, DON3G, ZEA, β-ZEL, and ZEA4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, ZEA, and α-ZEL)

incidence: 7/10*, conc. range: ≤51.9 µg/kg, Ø conc.: 16.8 µg/kg, sample year: 2008, country: Romania¹⁵²⁵, *brown bread

incidence: 7/8*, conc. range: ≤58.6 µg/kg, Ø conc.: 22.2 µg/kg, sample year: 2008, country: Romania¹⁵²⁵, *Graham bread

incidence: 10/12*, conc. range: ≤71.7 µg/kg, Ø conc.: 27.3 µg/kg, sample year: 2008,

country: Romania¹⁵²⁵, *bread with bran, brown flour, and cereals seed

incidence: 6/6*, conc. range: ≤197.6 µg/kg, Ø conc.: 108.9 µg/kg, sample year: 2008, country: Romania¹⁵²⁵, *bread with 15 % rye flour/premix rye

incidence: 4/4*, conc. range: ≤224 µg/kg, Ø conc.: 128.8 µg/kg, sample year: 2008, country: Romania¹⁵²⁵, *bread with 15 % rye flour/premix rye, wheat flakes, and condiment mixture

incidence: 44/52*, conc. range: 10–138 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 27/36*, conc. range: ≤127 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³, *bran-enriched bread

3-ACETYLDEOXYNIVALENOL

incidence: 1/96*, conc.: 11 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *bread and related products

incidence: 8/101*, conc. range: 11–73 µg/kg, Ø conc.: 42 µg/kg, sample year: 1999, country: Germany⁵¹⁸, *included rye -, mixed rye -, wheat -, mixed wheat bread

incidence: 6/6, conc. range: 29–51 µg/kg, Ø conc.: 35.3 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA4G, and ZEA4S, 1 sa co-contaminated with DON, 3-AcDON, DON3G, HT-2, T-2, ZEA, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, and ZEA4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, ZEA, and α-ZEL)

incidence: 20/52*, conc. range: 10–74 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 16/36*, conc. range: ≤ 59 $\mu\text{g}/\text{kg}$,
sample year: 2010/2011, country:
Belgium¹⁵⁹³, *bran-enriched bread

15-ACETYLDEOXYNIVALENOL

incidence: 4/6, conc. range: ≤ 18 $\mu\text{g}/\text{kg}$,
sample year: 2010/2011, country: Belgium/
Austria¹⁴⁶³, sa from Belgium

(1 sa co-contaminated with DON,
3-AcDON, 15-AcDON, DON3G, HT-2,
T-2, ZEA, α -ZEL, and β -ZEL, 1 sa co-
contaminated with DON, 3-AcDON,
15-AcDON, DON3G, HT-2, T-2, ZEA4G,
and ZEA4S, 1 sa co-contaminated with
DON, 3-AcDON, 15-AcDON, DON3G,
ZEA, and ZEA4G, 1 sa co-contaminated
with DON, 3-AcDON, 15-AcDON, ZEA,
and α -ZEL)

incidence: 17/52*, conc. range: 9–45 $\mu\text{g}/\text{kg}$,
sample year: 2010/2011, country:
Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 16/36*, conc. range: ≤ 45 $\mu\text{g}/\text{kg}$,
sample year: 2010/2011, country:
Belgium¹⁵⁹³, *bran-enriched bread

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: ?/4*, conc. range: < 100 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: Austria/
UK⁹²⁷, *wheat bread

incidence: ?/3*, conc. range: < 100 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: Austria/
UK⁹²⁷, sa from UK, *wheat
bread-wholemeal

incidence: 5/6, conc. range: 26–29 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 27.4 $\mu\text{g}/\text{kg}$, sample year:
2010/2011, country: Belgium/Austria¹⁴⁶³,
sa from Belgium (1 sa co-contaminated
with DON, 3-AcDON, 15-AcDON,
DON3G, HT-2, T-2, ZEA, α -ZEL, and
 β -ZEL, 1 sa co-contaminated with DON,
3-AcDON, 15-AcDON, DON3G, HT-2, T-2,
ZEA4G, and ZEA4S, 1 sa co-contaminated
with DON, 3-AcDON, DON3G, HT-2, T-2,
ZEA, and β -ZEL, 1 sa co-contaminated
with DON, 3-AcDON, 15-AcDON,
DON3G, ZEA, and ZEA4G, 1 sa
co-contaminated with DON, 3-AcDON,
DON3G, ZEA, β -ZEL, and ZEA4G)

incidence: 25/52*, conc. range: ≤ 425 $\mu\text{g}/\text{kg}$,
sample year: 2010/2011, country:
Belgium¹⁵⁹³, *fibre-enriched
bread

incidence: 19/36*, conc. range:
13–103 $\mu\text{g}/\text{kg}$, sample year: 2010/2011,
country: Belgium¹⁵⁹³, *bran-enriched
bread

FUMONISIN B₁

incidence: 1/1*, conc.: 600 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: USA³⁵⁶,
*unprocessed bread

incidence: 1/1*, conc.: 500 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: USA³⁵⁶,
*processed bread

incidence: 1/2*, conc.: 80 $\mu\text{g}/\text{kg}$, sample
year: 1995, country: Netherlands³⁸⁰,
*maize bread

incidence: 24/30*, conc. range: ≤ 448 $\mu\text{g}/\text{kg}$,
sample year: 2005, country: Portugal/
Spain¹²³², sa from Portugal, *maize bread
(broa)

FUMONISIN B₂

incidence: 25/30*, conc. range: ≤ 207 $\mu\text{g}/\text{kg}$,
sample year: 2005, country: Portugal/
Spain¹²³², sa from Portugal, *maize bread
(broa)

FUMONISINS

incidence: 4/4*, conc. range: 400–3,450 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 1,285 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: USA³⁵⁷, *maize bread

incidence: 30/35*, conc. range:
 < 9 –1,808 $\mu\text{g}/\text{kg}$, \emptyset conc.: 270 $\mu\text{g}/\text{kg}$,
sample year: 1995/1996, country: Czech
Republic⁶⁷⁰, *maize-extruded, gluten-free
bread

incidence: 20/22*, conc. range: 54–514 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: Italy¹⁴⁶⁵,
*gluten-free bread and surrogates

HT-2 TOXIN

incidence: 13/96*, conc. range: 12–32 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 16 $\mu\text{g}/\text{kg}$, sample year: 1998,
country: Germany⁵¹⁷, *bread and related
products

incidence: 2/101*, conc. range: 12 µg/kg,
 Ø conc.: 12 µg/kg, sample year: 1999,
 country: Germany⁵¹⁸, *included rye -, mixed
 rye -, wheat -, mixed wheat bread

incidence: 11/72*, conc. range: ≤75 µg/kg,
 Ø conc.: 47 µg/kg, sample year: 2008,
 country: Spain⁹⁷⁷, *sliced bread

incidence: 3/6, conc. range: <LOQ, sample
 year: 2010/2011, country: Belgium/
 Austria¹⁴⁶³, sa from Belgium (1 sa
 co-contaminated with DON, 3-AcDON,
 15-AcDON, DON3G, HT-2, T-2, ZEA,
 α-ZEL, and β-ZEL, 1 sa co-contaminated
 with DON, 3-AcDON, 15-AcDON,
 DON3G, HT-2, T-2, ZEA4G, and ZEA4S, 1
 sa co-contaminated with DON, 3-AcDON,
 DON3G, HT-2, T-2, ZEA, and β-ZEL)

NIVALENOL

incidence: 2/96*, conc. range: 67–169 µg/
 kg, Ø conc.: 118 µg/kg, sample year: 1998,
 country: Germany⁵¹⁷, *bread and related
 products

incidence: 5/101*, conc. range: 25–64 µg/kg,
 Ø conc.: 33 µg/kg, sample year: 1999,
 country: Germany⁵¹⁸, *included rye -, mixed
 rye -, wheat -, mixed wheat bread

incidence: 1/4*, conc.: 21 µg/kg, sample
 year: unknown, country: UK⁷³², *pitta
 bread

incidence: 1/4*, conc.: 16 µg/kg, sample
 year: unknown, country: UK⁷³², *chapatti
 bread

incidence: ?/4*, conc. range: 3–5 µg/kg,
 sample year: unknown, country: UK⁷³²,
 *nan bread

incidence: 9/60, conc. range: 12–39 µg/kg,
 sample year: 2000/2001, country: UK⁸³⁶ (9 sa
 co-contaminated with DON and NIV)

T-2 TOXIN

incidence: 1/20, conc.: 1.3 µg/kg, sample
 year: unknown, country: Egypt⁴²⁷

incidence: 1/96*, conc.: 4 µg/kg, sample
 year: 1998, country: Germany⁵¹⁷, *bread
 and related products

incidence: 1/101*, conc.: 4 µg/kg, sample
 year: 1999, country: Germany⁵¹⁸,

*included rye -, mixed rye -, wheat -,
 mixed wheat bread

incidence: ?/88*, conc. range: ≤0.6 µg/kg,
 Ø conc.: <0.2 µg/kg**, sample year:
 unknown, country: Germany⁹⁴⁵, *bread
 and pastries, **of pos sa?

incidence: 1/5*, conc.: 38.7 µg/kg, sample
 year: unknown, country: Spain¹³⁷⁸,
 *baguette (whole wheat)

incidence: 1/9*, conc.: 67.9 µg/kg, sample
 year: unknown, country: Spain¹³⁷⁸, *milled
 bread

incidence: 3/6, conc. range: <LOQ, sample
 year: 2010/2011, country: Belgium/
 Austria¹⁴⁶³, sa from Belgium (1 sa
 co-contaminated with DON, 3-AcDON,
 15-AcDON, DON3G, HT-2, T-2, ZEA,
 α-ZEL, and β-ZEL, 1 sa co-contaminated
 with DON, 3-AcDON, 15-AcDON, DON3G,
 HT-2, T-2, ZEA4G, and ZEA4S, 1 sa
 co-contaminated with DON, 3-AcDON,
 DON3G, HT-2, T-2, ZEA, and β-ZEL)

ZEARALENONE

incidence: 4/20, conc. range: 34 µg/kg,
 sample year: unknown, country: Egypt⁴²⁷

incidence: 2/2*, conc. range: 250–750 µg/
 kg, Ø conc.: 500 µg/kg, sample year: 1991,
 country: Papua, New Guinea/Japan⁵⁷⁴, sa
 from Australia, *wheat bread crumbs

incidence: 1/60, conc.: 15.8 µg/kg, sample
 year: 2000/2001, country: UK⁸³⁶
 (1 sa co-contaminated with DON and ZEA)

incidence: ?/3*, conc. range: <10 µg/kg,
 sample year: unknown, country: Austria/
 UK⁹²⁷, sa from UK, *wheat
 bread-wholemeal

incidence: 5/6, conc. range: 19–53 µg/kg,
 Ø conc.: 35.4 µg/kg, sample year:
 2010/2011, country: Belgium/Austria¹⁴⁶³,
 sa from Belgium (1 sa co-contaminated
 with DON, 3-AcDON, 15-AcDON,
 DON3G, HT-2, T-2, ZEA, α-ZEL, and
 β-ZEL, 1 sa co-contaminated with DON,
 3-AcDON, DON3G, HT-2, T-2, ZEA, and
 β-ZEL, 1 sa co-contaminated with DON,
 3-AcDON, 15-AcDON, DON3G, ZEA, and
 ZEA4G, 1 sa co-contaminated with DON,

3-AcDON, DON3G, ZEA, β -ZEL, and ZEA4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, ZEA, and α -ZEL) incidence: 2/6*, conc. range: 1.1–1.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.2 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Romania¹⁵²⁵, *bread with 15 % rye flour/premix rye

incidence: 31/71*, conc. range: $\leq 20.9 \mu\text{g}/\text{kg}$, \emptyset conc.: 3.7 $\mu\text{g}/\text{kg}$ ***, sample year: 2008, country: Spain¹⁵³⁵, *sliced bread, **of pos sa?

incidence: 13/52*, conc. range: $\leq 230 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 20/36*, conc. range: 8–157 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *bran-enriched bread

ZEARALENONE-4-GLUCOSIDE

incidence: 3/6, conc. range: $\leq 20 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA4G, and ZEA4S, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, and ZEA4G, 1 sa co-contaminated with DON, 3-AcDON, DON3G, ZEA, β -ZEL, and ZEA4G)

incidence: 9/52*, conc. range: $\leq 154 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 13/36*, conc. range: $\leq 155 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *bran-enriched bread

ZEARALENONE-4-SULFATE

incidence: ?/4*, conc. range: $\leq 1 \mu\text{g}/\text{kg}$, sample year: unknown, country: Austria/UK⁹²⁷, *wheat bread

incidence: ?/4*, conc. range: $\leq 1 \mu\text{g}/\text{kg}$, sample year: unknown, country: Austria/UK⁹²⁷, *rye bread

incidence: 1/3*, conc.: 2.2 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *wheat bread-wholemeal

incidence: 1/6, conc.: $\leq 24 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/

Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA4G, and ZEA4S)

incidence: 2/52*, conc. range: $\leq 176 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 2/36*, conc. range: 12–143 $\mu\text{g}/\text{kg}$, \emptyset conc.: 77.5 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *bran-enriched bread

α -ZEARALENOL

incidence: 2/6, conc. range: 18–110 $\mu\text{g}/\text{kg}$, \emptyset conc.: 69 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, α -ZEL, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, ZEA, and α -ZEL)

incidence: 9/52*, conc. range: $\leq 110 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

α -ZEARALENOL-4-GLUCOSIDE

incidence: 5/52*, conc. range: $\leq 63 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 1/36*, conc.: 12 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *bran-enriched bread

β -ZEARALENOL

incidence: 4/6, conc. range: $\leq 96 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, α -ZEL, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, DON3G, HT-2, T-2, ZEA, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, DON3G, ZEA, ZEA4G, and β -ZEL)

incidence: 13/52*, conc. range: $\leq 86 \mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

β-ZEARALENOL-4-GLUCOSIDE

incidence: 11/52*, conc. range: ≤153 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³, *fibre-enriched bread

incidence: 7/36*, conc. range: ≤153 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³, *bran-enriched bread

Bread crumb see Bread

Bread-baking wheat

premises may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 11/14, conc. range: ≤320 µg/kg, Ø conc.: 210 µg/kg, sample year: 1999, country: Germany⁵⁷⁷

Breadfruit may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 9/9*, conc. range: 40.06–48.59 µg/kg, Ø conc.: 45.37 µg/kg, sample year: 2004/2005, country: Nigeria¹⁴⁷⁹, *sa from markets

Breakfast cereals see Cereals (breakfast)

Brie cheese see Cheese (Brie cheese)

Bsissa see Cereals

Buckwheat may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 23?/123, conc. range: 0.1–4.2 µg/kg, sample year: unknown, country: Japan¹⁸⁴

AFLATOXIN B₂

incidence: 23?/123, conc. range: 0.1–0.9 µg/kg, sample year: unknown, country: Japan¹⁸⁴

AFLATOXIN G₁

incidence: 23?/123, conc. range: 0.2–0.8 µg/kg, sample year: unknown, country: Japan¹⁸⁴

AFLATOXIN G₂

incidence: 23?/123, conc. range: tr–0.1 µg/kg, sample year: unknown, country: Japan¹⁸⁴

STERIGMATOCYSTIN

incidence: 2/10, conc. range: 0.5–25 µg/kg, sample year: 2006, country: Latvia⁸¹

incidence: 9/25, conc. range: 0.5–25 µg/kg (4 sa), 25–200 µg/kg (5 sa), sample year: 2007, country: Latvia⁸¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 10/23, conc. range: ≤0.594 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰

incidence: 3/6*, conc. range: 0.75–1.14 µg/kg, Ø conc.: 0.96 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (1 sa co-contaminated with DON and OTA, 2 sa contaminated solely with OTA)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/6*, conc. range: 74–87 µg/kg, Ø conc.: 80.5 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (1 sa co-contaminated with DON and OTA, 1 sa contaminated solely with DON)

Buckwheat flour see Flour (buckwheat flour)

Buckwheat meal see Meal (buckwheat meal)

Bukolo may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 13/22, conc. range: 1–5 µg/kg (1 sa), 6–15 µg/kg (8 sa), 26–50 µg/kg (3 sa), >100 µg/kg (1 sa), sample year: unknown,

country: France/England/Germany/USA/
Gambia¹⁴⁹⁴, sa from Gambia

Bukolo is a flour sauce.

Burghul may contain the following
mycotoxins:

Aspergillus and Penicillium Toxins

OCHRATOXIN A

incidence: 8/13, Ø conc.: 0.21 µg/kg, sample
year: unknown, country: Lebanon⁹¹¹

Burghul is made from wheat. It has been
steamed or parboiled, dried and
afterwards grounded.

Burukutu see Beer

Butter may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/6*, conc. range: LOQ–2 µg/kg
(1 sa), 2.5 µg/kg (1 sa), sample year: 2001,
country: UK⁸³⁴, *other nut than peanut
butter

incidence: 1/1*, conc.: 2.9 µg/kg, sample
year: 2001, country: UK⁸³⁴, *other nut than
peanut butter

AFLATOXIN M₁

incidence: 52/64, conc. range: 0.001–
0.010 µg/kg (3 sa), 0.011–0.050 µg/kg
(29 sa), 0.051–0.100 µg/kg (2 sa), 0.101–
0.250 µg/kg (7 sa), >0.250 µg/kg (11 sa,
maximum: 2.2 µg/kg), sample year: 2001,
country: Turkey¹²

incidence: 25/27, conc. range: <0.001 µg/kg (8
sa), 0.001–0.010 µg/kg (1 sa), 0.011–0.050 µg/
kg (15 sa), 0.051–0.100 µg/kg (1 sa), sample
year: 2002/2003, country: Turkey⁹²¹

incidence: 3/10, conc. range: 0.025–
0.050 µg/kg (1 sa), 0.051–0.100 µg/kg
(2 sa, maximum: 0.070 µg/kg), Ø conc.:
0.057 µg/kg, sample year: unknown,
country: Turkey¹¹⁰¹

incidence: 92/92, conc. range: 0.001–
0.050 µg/kg (66 sa), 0.051–0.100 µg/kg

(5 sa), 0.101–0.250 µg/kg (6 sa),
>0.250 µg/kg (15 sa, maximum 7.000 µg/
kg), Ø conc.: 0.236 µg/kg, sample year:
2005, country: Turkey¹¹⁰⁷

AFLATOXINS (TOTAL)

incidence: 1/6*, conc.: 4.2 µg/kg, sample
year: 2001, country: UK⁸³⁴, *other nut than
peanut butter

incidence: 1/1*, conc.: 4.8 µg/kg, sample
year: 2001, country: UK⁸³⁴, *other nut than
peanut butter

Aspergillus and Penicillium Toxins

OCHRATOXIN A

incidence: 2/6*, conc. range: 0.7–2.0 µg/
kg, Ø conc.: 1.35 µg/kg, sample year: 2001,
country: UK⁸³⁴, *other nut than peanut
butter

Butter (cocoa butter) may contain
the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 7/25, conc. range: ≤0.38 µg/kg,
sample year: unknown, country: Brazil¹⁵⁴¹,
sa from Africa, Asia, and Brazil

AFLATOXIN B₂

incidence: 1/25, conc.: 0.04 µg/kg, sample
year: unknown, country: Brazil¹⁵⁴¹, sa from
Africa, Asia, and Brazil

Aspergillus and Penicillium Toxins

OCHRATOXIN A

incidence: 20/25, conc. range:
≤0.06 µg/kg, sample year: unknown,
country: Brazil¹⁶⁴⁴

Butter (peanut butter) may contain
the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 6/50* **, conc. range: 2.5–5 µg/
kg (2 sa), 11–30 µg/kg (4 sa), sample year:
unknown, country: UK²⁸, *health food,
**smooth peanut butter

incidence: 9/79* **, conc. range: 2.5–5 µg/kg (2 sa), 5.1–10 µg/kg (3 sa), 11–30 µg/kg (3 sa), 31–100 µg/kg (1 sa), sample year: unknown, country: UK²⁸, *health food, **crunchy peanut butter

incidence: 7/16* **, conc. range: 2–5 µg/kg (6 sa), 7 µg/kg (1 sa), sample year: 1982, country: UK⁶⁰, *regular food, **smooth peanut butter

incidence: 5/16* **, conc. range: 2–5 µg/kg (3 sa), 6–10 µg/kg (1 sa), 12 µg/kg (1 sa), sample year: 1982, country: UK⁶⁰, *regular food, **crunchy peanut butter

incidence: 4/11* **, conc. range: 6–10 µg/kg (2 sa), 31–100 µg/kg (2 sa, maximum: 49 µg/kg), sample year: 1982, country: UK⁶⁰, *health food, **smooth peanut butter

incidence: 10/14* **, conc. range: 2–5 µg/kg (2 sa), 6–10 µg/kg (1 sa), 11–30 µg/kg (1 sa), 31–100 µg/kg (1 sa), >100 µg/kg (5 sa, maximum: 318 µg/kg), sample year: 1982, country: UK⁶⁰, *health food, **crunchy peanut butter

incidence: 5/6* **, conc. range: 11–30 µg/kg (3 sa), 31–100 µg/kg (2 sa, maximum: 76 µg/kg), sample year: 1983, country: UK⁶⁰, *health food, **smooth peanut butter

incidence: 7/9* **, conc. range: 2–5 µg/kg (5 sa), 6–10 µg/kg (1 sa), 58 µg/kg (1 sa), sample year: 1983, country: UK⁶⁰, *health food, **crunchy peanut butter

incidence: 1/4* **, conc.: 13 µg/kg, sample year: 1984, country: UK⁶⁰, *health food, **smooth peanut butter

incidence: 7/15* **, conc. range: 6–10 µg/kg (1 sa), 11–30 µg/kg (3 sa), 31–100 µg/kg (3 sa, maximum: 73 µg/kg), sample year: 1984, country: UK⁶⁰, *health food, **crunchy peanut butter

incidence: 21?/74, conc. range: 1.2–73 µg/kg, Ø conc.: 40.6 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 14/30, conc. range: 5–117 µg/kg, Ø conc.: 25 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 10/63, conc. range: 2–20 µg/kg, Ø conc.: 7 µg/kg, sample year: unknown, country: USA¹⁴⁶

incidence: 2/2, conc. range: 3.5–5.2 µg/kg, Ø conc.: 4.4 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 3?/6, conc. range: 0.6–2.4 µg/kg, sample year: unknown, country: Japan¹⁸⁴

incidence: 9/16, conc. range: 20–730 µg/kg, Ø conc.: 217.7 µg/kg, sample year: unknown, country: Taiwan¹⁹⁰

incidence: 2/2, conc. range: 1.8–5.5 µg/kg, Ø conc.: 3.7 µg/kg, sample year: unknown, country: Denmark¹⁹³

incidence: 20*/101**, conc. range: 64–1,736 µg/kg, sample year: 1995–2003, country: Nepal²³⁹, * >30 µg/kg, **peanut butter/vegetable oil

incidence: 8/8, conc. range: 0.11–1 µg/kg (4 sa), 1.1–5 µg/kg (4 sa), Ø conc.: 1.3 µg/kg, sample year: 1989/1990, country: France³⁹⁷

incidence: 15?/21, conc. range: 3.2–16.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

incidence: 19/29, conc. range: LOQ–2 µg/kg (13 sa), >2–5 µg/kg (5 sa), 7.5 µg/kg (1 sa), sample year: 2001, country: UK⁸³⁴

incidence: 15/26, conc. range: LOQ–2 µg/kg (14 sa), 2.5 µg/kg (1 sa), sample year: 2001, country: UK⁸³⁴

incidence: 3/4, conc. range: 0.6–1.4 µg/kg, Ø conc.: 1.3 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶

incidence: 22/26, conc. range: 0.09–2.65 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 36/36*, conc. range: 21–170 µg/kg, Ø conc.: 73.7 µg/kg, sample year: 2005/2006, country: Sudan¹⁰¹⁵, *homemade peanut butter distributed by street sellers

incidence: 10/14*, conc. range: 1–57 µg/kg, Ø conc.: 14.5 µg/kg, sample year: 2005/2006, country: Sudan¹⁰¹⁵, *butter from retail stores

incidence: 2/2, conc. range: 5.82–6.44 µg/kg, Ø conc.: 6.13 µg/kg, sample year: 2004, country: Korea¹⁰²⁰

incidence: 19/20, conc. range: 2.06–63.72 µg/kg, Ø conc.: 16.59 µg/kg, sample year: unknown, country: Turkey¹⁰³⁶

incidence: 5/5, conc. range: 0.71–13.7 µg/kg, Ø conc.: 4.6 µg/kg, sample year: unknown, country: USA¹⁰⁹⁰

incidence: 1/1, conc.: 26.3 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan

incidence: 10/21, conc. range: 0.17–2.59 µg/kg, Ø conc.: 1.07 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵, sa domestic and imported

incidence: 41/50, conc. range: 0.39–68.51 µg/kg, sample year: 2007, country: China¹²²⁹ (41 sa co-contaminated with AFB₁ and AFB₂)

incidence: 5/19, conc. range: 1.30–6.44 µg/kg, Ø conc.: 3.60 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴

incidence: 40/62, conc. range: 0.5–54.6 µg/kg, Ø conc.: 7.10 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

incidence: 2/2, conc. range: 0.76–5.90 µg/kg, Ø conc.: 3.33 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 7/12, conc. range: 13.3–56.6 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹

incidence: 4/10, conc. range: 5–61 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia

incidence: 7/8, conc. range: 2.0–4.0 µg/kg (1 sa), >4.0 µg/kg (6 sa, maximum: 249.0 µg/kg), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia

AFLATOXIN B₂

incidence: 21/74, conc. range: 0.3–9 µg/kg, Ø conc.: 6.4 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 5/30, conc. range: 5–50 µg/kg, Ø conc.: 18 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 2/2, conc. range: 0.5–0.6 µg/kg, Ø conc.: 0.55 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 1/6, conc.: 0.4 µg/kg, sample year: unknown, country: Japan¹⁸⁴

incidence: 2/2, conc. range: 0.4–1.0 µg/kg, Ø conc.: 0.7 µg/kg, sample year: unknown, country: Denmark¹⁹³

incidence: 15/21, conc. range: 1.6–20.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

incidence: 3/4, conc. range: 0.1–0.3 µg/kg, Ø conc.: 0.2 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶

incidence: 22/26, conc. range: 0.04–0.65 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 1/2, conc.: 1.15 µg/kg, sample year: 2004, country: Korea¹⁰²⁰

incidence: 20/20, conc. range: 0.14–4.68 µg/kg, Ø conc.: 1.23 µg/kg, sample year: unknown, country: Turkey¹⁰³⁶

incidence: 5/5, conc. range: 0.16–3.14 µg/kg, Ø conc.: 1.0 µg/kg, sample year: unknown, country: USA¹⁰⁹⁰

incidence: 1/1, conc.: 9.72 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan

incidence: 7/21, conc. range: 0.16–0.52 µg/kg, Ø conc.: 0.27 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵, sa domestic and imported

incidence: 41/50, conc. range: ≤5.52 µg/kg, sample year: 2007, country: China¹²²⁹ (41 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/2, conc. range: 0.12–1.38 µg/kg, Ø conc.: 0.75 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFB₂)
 incidence: 7?/12, conc. range: 3.31–10.8 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹

AFLATOXIN G₁

incidence: 21?/74, conc. range: <0.4–0.9 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported
 incidence: 5/30, conc. range: 6–135 µg/kg, Ø conc.: 54 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴
 incidence: 2/2, conc. range: 3.5–5.2 µg/kg, Ø conc.: 4.4 µg/kg, sample year: unknown, country: GDR¹⁷⁸
 incidence: 3?/6, conc. range: 0.1–0.4 µg/kg, sample year: unknown, country: Japan¹⁸⁴
 incidence: 2/2, conc. range: 0.6–1.2 µg/kg, Ø conc.: 0.9 µg/kg, sample year: unknown, country: Denmark¹⁹³
 incidence: 15?/21, conc. range: 3.2–20.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³
 incidence: 2/4, conc. range: 0.3 µg/kg, Ø conc.: 0.3 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶
 incidence: 22?/26, conc. range: 0.13–2.21 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹
 incidence: 20/20, conc. range: 1.66–32.78 µg/kg, Ø conc.: 10.58 µg/kg, sample year: unknown, country: Turkey¹⁰³⁶
 incidence: 4/5, conc. range: 0.15–1.72 µg/kg, Ø conc.: 0.7 µg/kg, sample year: unknown, country: USA¹⁰⁹⁰
 incidence: 1/1, conc.: 84.5 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan
 incidence: 4/21, conc. range: 0.17–0.81 µg/kg, Ø conc.: 0.4 µg/kg, sample year:

2004/2005, country: Japan¹²¹⁵, sa domestic and imported

incidence: 40/50, conc. range: ≤21.22 µg/kg, sample year: 2007, country: China¹²²⁹
 incidence: 1/2, conc.: 0.52 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXIN G₂

incidence: 1/74, conc.: 0.3 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported
 incidence: 3/30, conc. range: 33–124 µg/kg, Ø conc.: 68 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴
 incidence: 2/2, conc. range: 1.3–1.7 µg/kg, Ø conc.: 1.5 µg/kg, sample year: unknown, country: GDR¹⁷⁸
 incidence: 2/2, conc. range: 0.2 µg/kg, Ø conc.: 0.2 µg/kg, sample year: unknown, country: Denmark¹⁹³
 incidence: 15?/21, conc. range: 1.6–20.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³
 incidence: 2/26, conc. range: 0.21–0.30 µg/kg, Ø conc.: 0.255 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹
 incidence: 4/5, conc. range: 0.13–0.38 µg/kg, Ø conc.: 0.2 µg/kg, sample year: unknown, country: USA¹⁰⁹⁰
 incidence: 4/21, conc. range: 0.12–0.46 µg/kg, Ø conc.: 0.21 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵, sa domestic and imported
 incidence: 37/50, conc. range: ≤6.36 µg/kg, sample year: 2007, country: China¹²²⁹

AFLATOXIN M₁

incidence: ?/33, conc. range: ≤4.2 µg/kg, sample year: unknown, country: China¹⁵⁹⁵

AFLATOXIN M₂

incidence: ?/33, conc. range: ≤1.8 µg/kg, sample year: unknown, country: China¹⁵⁹⁵

AFLATOXIN

incidence: 29/29, conc. range: >30–8,600 µg/kg, sample year: 1967/1968, country: USA³², sa from Philippines

incidence: 478/483, Ø conc.: 143.6 µg/kg*, sample year: unknown, country: Philippines⁹⁵⁶, *of pos sa?

AFLATOXINS (B₁, G₁)

incidence: 10/18, conc. range: 1 to <5 µg/kg (1 sa), 5 to <10 µg/kg (3 sa), 10 to <50 µg/kg (4 sa), 50 to <100 µg/kg (1 sa), 775 µg/kg (1 sa), sample year: unknown, country: UK²³

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 98/2,092, conc. range: 5.0–9.9 µg/kg (47 sa), 10.0–14.9 µg/kg (36 sa), 15.0–19.9 µg/kg (12 sa), >25.0 µg/kg (3 sa), sample year: 1970–1975, country: Canada⁵⁹

incidence: 13/42*, conc. range: 1.0–3.9 µg/kg (8 sa), 4.0–10 µg/kg (4 sa), 21 µg/kg (1 sa), sample year: unknown, country: UK⁷³⁹, *retail sa

incidence: 7/7, conc. range: 0.32–13.26 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸

incidence: 256/400, conc. range: 32–54 µg/kg, Ø conc.: 43.5 µg/kg, sample year: unknown, country: Sudan/Saudi Arabia¹³⁶⁴, sa from Sudan (218 sa contained AFB₁, 8 sa contained AFB₂, 26 sa contained AFG₁, 5 sa contained AFG₂)

AFLATOXINS (TOTAL)

incidence: 12/79* **, conc. range: 2.5–5 µg/kg (4 sa), 5.1–10 µg/kg (4 sa), 11–30 µg/kg (2 sa), 31–100 µg/kg (2 sa), sample year: unknown, country: UK²⁸, *health food, **crunchy peanut butter

incidence: 6/50* **, conc. range: 2.5–5 µg/kg (2 sa), 11–30 µg/kg (3 sa), 31–100 µg/kg (1 sa), sample year: unknown, country: UK²⁸, *health food, **smooth peanut butter

incidence: 7/16* **, conc. range: 2–5 µg/kg (6 sa), 8 µg/kg (1 sa), sample year: 1982, country: UK⁶⁰, *regular food, **smooth peanut butter

incidence: 6/16* **, conc. range: 2–5 µg/kg (4 sa), 6–10 µg/kg (1 sa), 14 µg/kg (1 sa), sample year: 1982, country: UK⁶⁰, *regular food, **crunchy peanut butter

incidence: 6/11* **, conc. range: 2–5 µg/kg (1 sa), 6–10 µg/kg (2 sa), 11–30 µg/kg (1 sa), 31–100 µg/kg (2 sa, maximum: 85 µg/kg), sample year: 1982, country: UK⁶⁰, *health food, **smooth peanut butter

incidence: 10/14* **, conc. range: 2–5 µg/kg (1 sa), 6–10 µg/kg (2 sa), 11–30 µg/kg (1 sa), 31–100 µg/kg (1 sa), >100 µg/kg (5 sa, maximum: 345 µg/kg), sample year: 1982, country: UK⁶⁰, *health food, **crunchy peanut butter

incidence: 6/6* **, conc. range: 6–10 µg/kg (1 sa), 11–30 µg/kg (1 sa), 31–100 µg/kg (3 sa), 175 µg/kg (1 sa), sample year: 1983, country: UK⁶⁰, *health food, **smooth peanut butter

incidence: 7/9* **, conc. range: 2–5 µg/kg (3 sa), 6–10 µg/kg (2 sa), 11–30 µg/kg (1 sa), 211 µg/kg (1 sa), sample year: 1983, country: UK⁶⁰, *health food, **crunchy peanut butter

incidence: 1/4* **, conc.: 27 µg/kg, sample year: 1984, country: UK⁶⁰, *health food, **smooth peanut butter

incidence: 7/15* **, conc. range: 6–10 µg/kg (1 sa), 11–30 µg/kg (1 sa), 31–100 µg/kg (2 sa), >100 µg/kg (3 sa, maximum: 147 µg/kg), sample year: 1984, country: UK⁶⁰, *health food, **crunchy peanut butter

incidence: 12/29, conc. range: LOQ–4.0 µg/kg (82 sa), >4.0–10 µg/kg (3 sa), 11.2 µg/kg (1 sa), sample year: 2001, country: UK⁸³⁴

incidence: 10/26, conc. range: LOQ–4.0 µg/kg (10 sa, maximum: 2.7 µg/kg), sample year: 2001, country: UK⁸³⁴

incidence: 4/4, conc. range: 6.50–14.90 µg/kg, Ø conc.: 10.7 µg/kg, sample year: unknown, country: USA¹⁵¹³

incidence: 31/33, conc. range: 0.7–95.9 µg/kg*, sample year: unknown, country: China¹⁵⁹⁵, *AFB₁, AFB₂, AFG₁, AFG₂, M₁, and M₂

incidence: 4/10, conc. range: 7–228 µg/kg,
sample year: 2001/2002, country:
Austria/Indonesia¹⁶⁵⁶, sa from Indonesia

AFLATOXINS

incidence: 27/95, conc. range: <20 µg/
kg, Ø conc.: 3.5 µg/kg, sample year: 1982,
country: USA⁵⁶

incidence: 273/355, conc. range: <20 µg/kg
(242 sa), >20 µg/kg (31 sa), Ø conc.: 7.7 µg/
kg, sample year: 1983, country: USA⁵⁶

incidence: 196/258, conc. range: <20 µg/kg
(189 sa), >20 µg/kg (7 sa), Ø conc.: 6.6 µg/
kg, sample year: 1984, country: USA⁵⁶

incidence: 184/235, conc. range: <20 µg/
kg?, sample year: 1985, Ø conc.: 5.7 µg/kg,
country: USA⁵⁶

incidence: 435/465, conc. range: <20 µg/kg
(375 sa), >20 µg/kg (60 sa, maximum:
76.6 µg/kg), Ø conc.: 9.6 µg/kg, sample
year: 1986, country: USA⁵⁶

incidence: 404/449, conc. range: <20 µg/kg
(273 sa), 20–50 µg/kg (24 sa), 50–100 µg/
kg (70 sa), >100 µg/kg (37 sa, maximum:
215 µg/kg), Ø conc.: 33.0 µg/kg, sample
year: 1987, country: USA⁵⁶

incidence: 187/322, conc. range: <20 µg/kg
(175 sa), >20 µg/kg (12 sa), Ø conc.: 8.9 µg/
kg, sample year: 1988, country: USA⁵⁶

incidence: 144/331, conc. range: <20 µg/
kg, Ø conc.: 2.5 µg/kg, sample year: 1989,
country: USA⁵⁶

incidence: 17/104, conc. range: ≤27 µg/kg,
Ø conc.: 14 µg/kg, sample year: 1986,
country: USA¹⁹⁷

incidence: 1/3, conc.: 43 µg/kg, sample
year: 1986, country: USA¹⁹⁷, sa imported

incidence: 16/35, conc. range: 0.1–5 µg/kg
(5 sa), 6–10 µg/kg (6 sa), 11–20 µg/kg
(3 sa), 21–35 µg/kg (2 sa), sample year:
1995–1999, country: Malaysia³⁹¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/29, conc. range: 0.4–5.4 µg/
kg, Ø conc.: 2.2 µg/kg, sample year: 2001,
country: UK⁸³⁴

Butter (sesame butter) may contain
the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (TOTAL)

incidence: 1/14*, conc.: >176 µg/
kg, sample year: unknown, country:
Turkey¹⁵⁰⁷, *tahini

Butter cheese see Cheese (Butter
cheese)

Cacao powder see Powder (cacao)

Cake may contain the following
mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 19/40, conc. range: 11–67 µg/kg,
sample year: 2000/2001, country:
UK⁸³⁶ (1 sa co-contaminated with
DON and NIV, 18 sa contaminated solely
with DON)

incidence: 2/2* **, conc. range: 25–136 µg/
kg***, Ø conc.: 80.5 µg/kg***, sample
year: unknown, country: UK⁸⁹⁹, *Genoa-
type cake, **made from Flour (wheat),
Deoxynivalenol, no⁸⁹⁹, third entry, ***dry
weight basis

incidence: 5/5* **, conc. range:
25–141 µg/kg***, Ø conc.: 71.4 µg/kg***,
sample year: unknown, country:
UK⁸⁹⁹, *high-stress type cake,
**made from Flour (wheat),
Deoxynivalenol, no⁸⁹⁹, fourth
entry, ***dry weight basis

FUMONISINS

incidence: 16/17*, conc. range:
≤555 µg/kg, sample year: unknown,
country: Italy¹⁴⁶⁵, *gluten-free cakes
and biscuits

NIVALENOL

incidence: 1/40, conc.: 11 µg/kg,
sample year: 2000/2001, country: UK⁸³⁶ (1
sa co-contaminated with DON
and NIV)

Cake (peanut cake) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/33, conc. range: 6–52 µg/kg, Ø conc.: 22 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 15/15*, conc. range: 7–183 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin, *“kulikuli” (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 3 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 3 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

incidence: 3/10, conc. range: 4–117 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia

incidence: 4/6*, conc. range: 2.0–4.0 µg/kg (4 sa, maximum: 3.0 µg/kg), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *peanut-brown sugar cake

AFLATOXIN B₂

incidence: 9/33, conc. range: 8–66 µg/kg, Ø conc.: 25 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 10/15*, conc. range: ≤31 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin, *“kulikuli” (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 3 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA)

AFLATOXIN G₁

incidence: 7/33, conc. range: 8–120 µg/kg, Ø conc.: 54 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 14/15*, conc. range: ≤79 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin, *“kulikuli” (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 3 sa co-contaminated with

AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 3 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 7/33, conc. range: 18–84 µg/kg, Ø conc.: 40 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 15/15*, conc. range: 6–96 µg/kg, Ø conc.: 43 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin, *“kulikuli” (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 3 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 3 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

AFLATOXIN

incidence: 56/400, conc. range: 7–10 µg/kg, Ø conc.: 8.8 µg/kg, sample year: unknown, country: Sudan/Saudi Arabia¹³⁶⁴, sa from Sudan (52 sa contained AFB₁, 3 sa contained AFB₂, 1 sa contained AFG₁)

AFLATOXINS (TOTAL)

incidence: 3/10, conc. range: 5–302 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 9/15*, conc. range: ≤2 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin, *“kulikuli” (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA)

Cake (rice cake) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 0/0*, no sa investigated, sample year: unknown, country: Spain¹¹¹⁷, *conventional

incidence: 3/4*, conc. range: 3.6–7.1 µg/kg, Ø conc.: 4.9 µg/kg, sample year: unknown, country: Spain¹¹¹⁷, sa from Italy and Spain, *organic

Fusarium Toxins

FUMONISIN B₁

incidence: 27/30, conc. range: 5–98 µg/kg, sample year: 1996, country: Korea³⁷⁴

Cake/muffin mixes may contain the following mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 1/5, conc.: 3.1 µg/kg, sample year: 1985, country: USA⁸³¹

Camembert cheese see Cheese (Camembert cheese)

Candy (coconut candies) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 4/6, conc. range: 20 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN B₂

incidence: 4/6, conc. range: 20 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN G₁

incidence: 4/6, conc. range: 40–100 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN G₂

incidence: 4/6, conc. range: 40–100 µg/kg, sample year: 1982, country: India¹²⁰⁸

Candy (peanut candies) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 39/48*, conc. range: 0.50–43.29 µg/kg, Ø conc.: 4.33 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *Paçoca (ground candy)

incidence: 21/48*, conc. range: 0.52–32.85 µg/kg, Ø conc.: 1.78 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty dragee

incidence: 17/48*, conc. range: 0.59–13.98 µg/kg, Ø conc.: 1.47 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *sweet dragee

AFLATOXIN B₂

incidence: 31/48*, conc. range: 0.52–11.72 µg/kg, Ø conc.: 1.30 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *Paçoca (ground candy)

incidence: 11/48*, conc. range: <LOQ–2.55 µg/kg, Ø conc.: <LOQ, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty dragee

incidence: 13/48*, conc. range: <LOQ–3.40 µg/kg, Ø conc.: <LOQ, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *sweet dragee

AFLATOXIN G₁

incidence: 35/48*, conc. range: 0.52–38.92 µg/kg, Ø conc.: 2.63 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *Paçoca (ground candy)

incidence: 19/48*, conc. range: 0.54–3.65 µg/kg, Ø conc.: 0.83 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty dragee

incidence: 15/48*, conc. range: 0.50–2.29 µg/kg, Ø conc.: 0.90 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *sweet dragee

AFLATOXIN G₂

incidence: 30/48*, conc. range: 0.57–9.85 µg/kg, Ø conc.: 0.70 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *Paçoca (ground candy)

incidence: 17/48*, conc. range: <LOQ–2.45 µg/kg, Ø conc.: <LOQ, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty dragee

incidence: 11/48*, conc. range: 0.50–7.19 µg/kg, Ø conc.: 0.73 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *sweet dragee

AFLATOXINS

incidence: 10/18, conc. range: ≤ 20 $\mu\text{g}/\text{kg}$, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1986, country: USA¹⁹⁷, sa imported

incidence: 44/63*, conc. range: 0.1–5 $\mu\text{g}/\text{kg}$ (2 sa), 6–10 $\mu\text{g}/\text{kg}$ (14 sa), 11–20 $\mu\text{g}/\text{kg}$ (6 sa), 21–35 $\mu\text{g}/\text{kg}$ (8 sa), 36–40 $\mu\text{g}/\text{kg}$ (3 sa), 41–60 $\mu\text{g}/\text{kg}$ (4 sa), 61–80 $\mu\text{g}/\text{kg}$ (2 sa), 81–150 $\mu\text{g}/\text{kg}$ (2 sa), >150 $\mu\text{g}/\text{kg}$ (3 sa), sample year: unknown, country: Malaysia³⁹¹, **kacang tumbuk*

Candy (pistachio candies) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 1/1, conc.: 78 $\mu\text{g}/\text{kg}$, sample year: 1986, country: USA¹⁹⁷, sa imported

Canned foods see Food

Caraway see Spice (caraway)

Cardamom see Spice (cardamom)

Carrot juice see Juice (carrot)

Cashew nuts see Nut (cashew nuts)

Cassava may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 3/43*, conc. range: 20–340 $\mu\text{g}/\text{kg}$, \emptyset conc.: 130 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/Ghana⁸³⁰, sa from Ghana, *kokonte (dried cassava)

Aspergillus ToxinsAFLATOXIN B₁

incidence: ?/8, conc. range: 5–14 $\mu\text{g}/\text{kg}$, sample year: 1977, country: Nigeria¹⁷⁷

AFLATOXIN

incidence: 142/142*, \emptyset conc.: 467.5 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Philippines⁹⁵⁶, *cassava and cassava products

incidence: 1/1, conc.: 1,700 $\mu\text{g}/\text{kg}$, sample year: unknown, country: USA/Thailand¹⁴¹⁰, sa from Africa

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 4*/34, conc. range: 100–1,000 $\mu\text{g}/\text{kg}$ (2 sa), >1,000 $\mu\text{g}/\text{kg}$ (2 sa), sample year: 1966/1967, country: Uganda/USA⁵, sa from Uganda, *2 sa contained AFB₁ and AFG₁, 4 sa contained AFB₂ (2 sa co-contaminated with AFB₁ and AFB₂, 2 sa contaminated solely with AFB₂)

STERIGMATOCYSTIN

incidence: 10/43*, conc. range: 130–1,670 $\mu\text{g}/\text{kg}$, \emptyset conc.: 545 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/Ghana⁸³⁰, sa from Ghana, *kokonte (dried cassava)

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 4/43*, conc. range: 80–720 $\mu\text{g}/\text{kg}$, \emptyset conc.: 430 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/Ghana⁸³⁰, sa from Ghana, *kokonte (dried cassava)

PATULIN

incidence: 4/43*, conc. range: 550–850 $\mu\text{g}/\text{kg}$, \emptyset conc.: 683 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/Ghana⁸³⁰, sa from Ghana, *kokonte (dried cassava)

PENICILLIC ACID

incidence: 5/43*, conc. range: 110–850 $\mu\text{g}/\text{kg}$, \emptyset conc.: 302 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/Ghana⁸³⁰, sa from Ghana, *kokonte (dried cassava)

Cassava flour see Flour (cassava flour)

Cassava starch see Sago

Cassis may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1*, conc.: 0.38 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan¹⁰²⁵, *dry cassis

Cayenne pepper see Spice (cayenne pepper, chillies)

Celery seed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN G₁

incidence: 1/9, conc.: 3.7 µg/kg, sample year: unknown, country: USA¹⁸³, sa from India, Indonesia, and Malaysia

Cereal may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 13/27*, conc. range: LOD–851 µg/kg, sample year: unknown, country: Germany¹⁴²¹, *included various crispbreads and flours, ground maize and oat flakes

Aspergillus Toxins

AFLATOXIN B₁

incidence: 6/28, conc. range: 6–92 µg/kg, Ø conc.: 36 µg/kg, sample year: unknown, country: USA/Egypt¹⁶², sa from Egypt
incidence: 1/17*, conc.: 0.12 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹, *mixed cereals (*Sunsik*)

incidence: 1/7*, conc.: 2.08 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *cereals and products

incidence: 2/18, conc. range: 10.0–26.0 µg/kg, Ø conc.: 18.0 µg/kg, sample year: unknown country: Spain/Brazil/Nicaragua¹³⁶⁹, sa from Spain

AFLATOXIN G₁

incidence: 1/18, conc.: 7.4 µg/kg, sample year: unknown country: Spain/Brazil/Nicaragua¹³⁶⁹, sa from Spain

AFLATOXIN G₂

incidence: 1/7*, conc.: 1.75 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *cereals and products

AFLATOXIN

incidence: 15/27*, Ø conc.: 6.2 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *cereals and products, **of pos sa?

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 52/52*, conc. range: 2 µg/kg (34 sa), 2–5 µg/kg (16 sa), 6–15 µg/kg (2 sa, maximum: 10 µg/kg), sample year: 1988/1989, country: Australia¹³, *processed cereals

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 14/38*, conc. range: 0.2–1.0 µg/kg, Ø conc.: 0.5 µg/kg, sample year: unknown, country: Switzerland⁷¹⁴, *included different kinds of meals, a breadmixture, grits, pasta, bran, oat, rice, barley

OCHRATOXIN A

incidence: 2/49, conc. range: 18–22 µg/kg, Ø conc.: 20 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 8/11, conc. range: 0.6–12.8 µg/kg, Ø conc.: 4.7 µg/kg, sample year: unknown, country: France⁶³⁰

incidence: 11/11*, conc. range: 0.4–12,770 µg/kg, sample year: unknown, country: Tunisia/France⁶³⁴, sa from Tunisia, *mixed cereal food (bsissa)

incidence: 7/153* **, conc. range: ≤6.4 µg/kg**, sample year: 1996, country: UK⁷⁴², *ncac, **3 barley sa, 1 oat sa,

1 rye sa, and 2 wheat sa contaminated

incidence: 5/30, conc. range: 0.3–0.9 µg/kg (2 sa), 1–2.4 µg/kg (2 sa), 3.9 µg/kg (1 sa), sample year: 2000, country: UK⁷⁷⁴

incidence: 68/147, conc. range: 0.11–33.8 µg/kg, sample year: 2005/2006, country: Tunisia⁹³⁹

incidence: 4/36, conc. range: LOD/LOQ–4.9 µg/kg (2 sa), 5.0–9.9 µg/kg (1 sa), 22 µg/kg (1 sa), sample year: 1990–1994, country: EU¹⁰³⁴, sa from France

incidence: 13/267*, conc. range: LOD/LOQ–4.9 µg/kg (8 sa), 5.0–9.9 µg/kg (3 sa), 10.0–24.9 µg/kg (2 sa, maximum: 22 µg/kg), sample year: 1990–1995, country: EU¹⁰³⁴, sa from France, *cereals - best estimate

incidence: 33/265*, conc. range: ≤206.0 µg/kg, sample year: 1982–1987, country: Germany¹⁵²⁷, *included barley, maize, oats, and wheat; for detailed information please see the article

Fusarium Toxins

BEAVERICIN

incidence: 1/5*, conc.: 3,120 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain, *mixture of cereals

DEOXYNIVALENOL

incidence: 10/30, conc. range: 130–390 µg/kg, Ø conc.: 240 µg/kg, sample year: 2007, country: Thailand/Japan⁵⁰, sa from Thailand

incidence: 110/245* **, conc. range: ≤10,970 µg/kg, sample year: 1999, country: Germany²⁵⁹, *for food and feed, **included wheat, barley, triticale, and oats

incidence: 1/3, conc.: 16,000 µg/kg, sample year: 1989, country: USA⁴²⁴, *mixed-grain cereals

incidence: 26/30, conc. range: 20–49 µg/kg (7 sa), 50–99 µg/kg (12 sa), 100–249 µg/kg (4 sa), 250–499 µg/kg (3 sa, maximum: 370 µg/kg), sample year: 2000, country: UK⁷⁷⁴

incidence: 19/50*, conc. range: 3.7–57.5 µg/kg, Ø conc.: 15.6 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸, *mixed cereals rice-based

incidence: 1/6*, conc.: 170 µg/kg, sample year: unknown, country: Japan¹⁰²⁵,

*included 2 or more kinds of cereals and/or other materials

incidence: 15/23*, conc. range: ≤106 µg/kg, sample year: 2007–2009, country: USA¹⁰⁵⁹, *mixed cereal

incidence: 6/25, Ø conc.: 24 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³

incidence: 19/50*, Ø conc.: 16 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³, *minor cereal

incidence: 88/110, conc. range: <100 µg/kg (80 sa), 100–1,000 µg/kg (7 sa), >1,000 µg/kg (1 sa), sample year: 1996–1998, country: Sweden¹⁵⁶⁵

3-ACETYLDEOXYNIVALENOL

incidence: 17/245* **, conc. range: ≤468 µg/kg, sample year: 1999, country: Germany²⁵⁹, *for food and feed, **included wheat, barley, triticale, and oats

incidence: 6/110, conc. range: <100 µg/kg, sample year: 1996–1998, country: Sweden¹⁵⁶⁵

ENNIATIN A

incidence: 1/5*, conc.: 149,600 µg/kg, sample year: unknown, country: Spain¹⁵⁷⁰, *infant formula (six cereals)

ENNIATIN A₁

incidence: 4/5*, conc. range: ≤268,540 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain, *mixture of cereals

incidence: 1/7*, conc.: 73,800 µg/kg, sample year: unknown, country: Spain¹⁵⁷⁰, *infant formula (eight cereals and juice)

incidence: 1/10*, conc.: 6,300 µg/kg, sample year: unknown, country: Spain¹⁵⁷⁰, *infant formula (whole grain)

incidence: 2/9*, conc. range: 14,900–62,600 µg/kg, Ø conc.: 38,800 µg/kg, sample year: unknown, country: Spain¹⁵⁷⁰, *infant formula (eight cereals)

incidence: 1/5*, conc.: 101,700 µg/kg,
sample year: unknown, country: Spain¹⁵⁷⁰,
*infant formula (six cereals)

incidence: 1/7*, conc.: 23,800 µg/kg,
sample year: unknown,
country: Spain¹⁵⁷⁰, *infant formula
(rice and corn)

ENNIATIN B

incidence: 1/10*, conc.: 39,400 µg/kg,
sample year: unknown, country: Spain¹⁵⁷⁰,
*infant formula (whole grain)

ENNIATIN B₁

incidence: 4/7*, conc. range: 20,600–
36,500 µg/kg, Ø conc.: 29,100 µg/kg,
sample year: unknown, country:
Spain¹⁵⁷⁰, *infant formula (eight cereals
and juice)

incidence: 1/10*, conc.: 35,800 µg/kg,
sample year: unknown, country: Spain¹⁵⁷⁰,
*infant formula (whole grain)

incidence: 4/9*, conc. range: 11,400–
37,800 µg/kg, Ø conc.: 22,900 µg/kg,
sample year: unknown, country: Spain¹⁵⁷⁰,
*infant formula (eight cereals)

incidence: 3/7*, conc. range: 14,900–
41,900 µg/kg, Ø conc.: 29,600 µg/kg,
sample year: unknown, country:
Spain¹⁵⁷⁰, *infant formula (eight cereals
with honey)

incidence: 3/5*, conc. range: 28,900–
34,500 µg/kg, Ø conc.: 31,700 µg/kg,
sample year: unknown, country: Spain¹⁵⁷⁰,
*infant formula (six cereals)

incidence: 3/7*, conc. range: 26,100–
38,600 µg/kg, Ø conc.: 31,000 µg/kg,
sample year: unknown, country: Spain¹⁵⁷⁰,
*infant formula (rice and corn)

FUMONISIN B₁

incidence: 10/10*, conc. range: 13–176 µg/
kg, Ø conc.: 97.5 µg/kg, sample year:
unknown, country: Italy⁴⁰⁷, sa from
Europe, *maize-based breakfast
cereals (10 sa co-contaminated with FB₁
and FB₂)

incidence: 16/16* **, conc. range: 134–
1,335 µg/kg, Ø conc.: 526 µg/kg, sample
year: 2002, country: South Africa⁶¹⁵, sa
from Brazil, *infant cereals, ***different
ingredients

FUMONISIN B₂

incidence: 10/10*, conc. range: 7–62 µg/
kg, Ø conc.: 22.1 µg/kg, sample year:
unknown, country: Italy⁴⁰⁷, sa from
Europe, *maize-based breakfast cereals
(10 sa co-contaminated with FB₁ and FB₂)

incidence: 10/16* **, conc. range:
≤307 µg/kg, Ø conc.: 131 µg/kg, sample
year: 2002, country: South Africa⁶¹⁵, sa
from Brazil, *infant cereals, **different
ingredients

FUMONISIN B₃

incidence: 10/16* **, conc. range: ≤111 µg/
kg, Ø conc.: 69 µg/kg, sample year: 2002,
country: South Africa⁶¹⁵, sa from Brazil,
*infant cereals, **different ingredients

FUSAPROLIFERIN

incidence: 1/7*, conc.: 500 µg/kg, sample
year: unknown, country: Spain¹⁵⁷⁰, *infant
formula (eight cereals and juice)

incidence: 3/10*, conc. range: 1,100–
1,700 µg/kg, Ø conc.: 1,400 µg/kg, sample
year: unknown, country: Spain¹⁵⁷⁰, *infant
formula (whole grain)

incidence: 1/9*, conc.: 400 µg/kg, sample
year: unknown, country: Spain¹⁵⁷⁰, *infant
formula (eight cereals)

incidence: 2/5*, conc. range: 300–500 µg/
kg, Ø conc.: 400 µg/kg, sample year:
unknown, country: Spain¹⁵⁷⁰, *infant
formula (six cereals)

incidence: 1/7*, conc.: 500 µg/kg, sample
year: unknown, country: Spain¹⁵⁷⁰, *infant
formula (rice and corn)

HT-2 TOXIN

incidence: 15/65* **, conc. range:
≤236 µg/kg, sample year: 1999, country:
Germany²⁵⁹, *for food and feed, **included
wheat, barley, triticale, and oats

incidence: 94/189*, conc. range:
 ≤34.510 µg/kg, Ø conc.: 3.746 µg/kg,
 sample year: 2010, country: China¹⁶⁰⁵,
 *included broad bean, flour, highland
 barley, and rice

NIVALENOL

incidence: 7/245* **, conc. range:
 ≤256 µg/kg, sample year: 1999, country:
 Germany²⁵⁹, *for food and feed,
 **included wheat, barley, triticale and oats

incidence: 61/110, conc. range: <100 µg/
 kg, sample year: 1996–1998, country:
 Sweden¹⁵⁶⁵

DIACETOXYSCIRPENOL

incidence: 23/65* **, conc. range:
 ≤338 µg/kg, sample year: 1999, country:
 Germany²⁵⁹, *for food and feed,
 **included wheat, barley, triticale, and
 oats

T-2 TOXIN

incidence: 8/65* **, conc. range:
 ≤119 µg/kg, sample year: 1999, country:
 Germany²⁵⁹, *for food and feed,
 **included wheat, barley, triticale, and
 oats

incidence: 22/189*, conc. range:
 ≤3.332 µg/kg, Ø conc.: 0.565 µg/kg,
 sample year: 2010, country: China¹⁶⁰⁵,
 *included broad bean, flour, highland
 barley, and rice

ZEARALENONE

incidence: 12/245* **, conc. range:
 ≤67 µg/kg, sample year: 1999, country:
 Germany²⁵⁹, *for food and feed,
 **included wheat, barley, triticale,
 and oats

incidence: 2/3*, conc. range: 12–50 µg/kg,
 Ø conc.: 31 µg/kg, sample year: 1989,
 country: USA⁴²⁴, *mixed-grain cereals

incidence: 2/144*, conc. range: 200–
 700 µg/kg, Ø conc.: 450 µg/kg, sample
 year: 1979, country: Poland⁴³⁵, *included
 barley, maize, rye, and wheat

incidence: 1/207*, conc.: 1,200 µg/kg,
 sample year: 1981, country: Poland⁴³⁵,
 *included barley, maize, rye, and wheat

Cereal (breakfast cereals) may
 contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 10/10*, conc. range: 0.4–35 µg/
 kg, Ø conc.: 6.49 µg/kg, sample year:
 unknown, country: Canada¹⁶³⁰, *different
 kinds of breakfast cereals (10 sa co-
 contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 10/10*, conc. range: 0.4–12 µg/
 kg, Ø conc.: 3.35 µg/kg, sample year:
 unknown, country: Canada¹⁶³⁰, *different
 kinds of breakfast cereals (10 sa co-
 contaminated with AME and AOH)

Aspergillus Toxins

AFLATOXIN B₁

incidence: 4/7* **, conc. range: LOD–2 µg/
 kg (4 sa, maximum: 1.70 µg/kg), sample
 year: 2006/2007, country: Greece⁸³,
 *corn-based breakfast
 cereals, **conventional

incidence: 1/1* **, conc.: 1.58 µg/kg,
 sample year: 2006/2007, country:
 Greece⁸³, *corn-based breakfast cereals,
 **organic

incidence: 2/4* **, conc. range: LOD–2 µg/
 kg (1 sa), >2 µg/kg (1 sa, maximum:
 1.65 µg/kg?), sample year: 2006/2007,
 country: Greece⁸³, *wheat-based breakfast
 cereals, **conventional

incidence: 0/0* **, no sa investigated,
 sample year: 2006/2007, country:
 Greece⁸³, *wheat-based breakfast
 cereals, **organic

incidence: 1/2* **, conc.: LOD–2 µg/kg,
 sample year: 2006/2007, country: Greece⁸³,
 *wheat-based + fibres breakfast cereals,
 **conventional

incidence: 0/1* **, conc.: no
contamination, sample year: 2006/2007,
country: Greece⁸³, *wheat-based + fibres
breakfast cereals, **organic

incidence: 1/5* **, conc.: >2 µg/kg, sample
year: 2006/2007, country: Greece⁸³,
*wheat-based + chocolate breakfast
cereals, **conventional

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country: Greece⁸³,
*wheat-based + chocolate breakfast
cereals, **organic

incidence: 3/3* **, conc. range: LOD–2 µg/
kg, sample year: 2006/2007, country:
Greece⁸³, *mixed breakfast cereals,
**conventional

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country: Greece⁸³,
*mixed breakfast
cereals, **organic

incidence: 2/3* **, conc. range: LOD–2 µg/
kg (1 sa), >2 µg/kg (1 sa), sample year:
2006/2007, country: Greece⁸³, *oat-based
breakfast cereals, **conventional

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country:
Greece⁸³, *oat-based breakfast
cereals, **organic

incidence: 2/4* **, conc. range: LOD–2 µg/
kg (1 sa), >2 µg/kg (1 sa), sample year:
2006/2007, country: Greece⁸³, *breakfast
cereals + dried fruits, **conventional

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country:
Greece⁸³, *breakfast cereals + dried fruits,
**organic

incidence: 1/1* **, conc.: >2 µg/kg (1 sa),
sample year: 2006/2007, country: Greece⁸³,
*breakfast cereals + dried
fruits + cinnamon, **conventional

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country: Greece⁸³,
*breakfast cereals + dried
fruits + cinnamon, **organic

incidence: 1/3* **, conc.: LOD–2 µg/kg,
sample year: 2006/2007, country:
Greece⁸³, *breakfast cereals + nuts,
**conventional

incidence: 1/1* **, conc.: 0.59 µg/kg,
sample year: 2006/2007, country: Greece⁸³,
*multicereal + nuts, **organic

incidence: 2/6* **, conc. range: LOD–2 µg/
kg (2 sa, maximum: 1.90 µg/kg), sample
year: 2006/2007, country: Greece⁸³,
*breakfast cereals + dried fruits + nuts,
**conventional

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country: Greece⁸³,
*breakfast cereals + dried fruits + nuts,
**organic

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country: Greece⁸³,
*(wheat + corn) based + cocoa breakfast
cereals, **conventional

incidence: 1/1* **, conc.: 0.08 µg/kg,
sample year: 2006/2007, country: Greece⁸³,
*(wheat + corn) based + cocoa breakfast
cereals, **organic

incidence: 0/0* **, no sa investigated,
sample year: 2006/2007, country: Greece⁸³,
*multicereal formula + cocoa
(corn + barley)- based breakfast cereals,
**conventional

incidence: 1/1* **, conc.: 0.88 µg/kg,
sample year: 2006/2007, country: Greece⁸³,
*multicereal formula + cocoa
(corn + barley)-based breakfast cereals,
**organic

incidence: 0/0* **, no sa investigated, sample
year: 2006/2007, country: Greece⁸³,
*muesli + multicereal formula, **conventional

incidence: 1/1* **, conc.: 1.87 µg/kg, sample
year: 2006/2007, country: Greece⁸³,
*muesli + multicereal formula, **organic

incidence: 31/45*, conc. range: 0.002–
0.818 µg/kg, sample year: 2002–2005,
country: Canada⁵⁵⁹, *maize-based
breakfast cereals

incidence: 42/55*, conc. range: 0.002–0.255 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *mixed-grain breakfast cereals

incidence: 12/24*, conc. range: 0.002–0.109 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *rice-based breakfast cereals

incidence: 2/48*, conc. range: 0.008–0.020 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *wheat-based breakfast cereals

AFLATOXIN B₂

incidence: 20/45*, conc. range: 0.002–0.136 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *maize-based breakfast cereals

incidence: 23/55*, conc. range: 0.002–0.045 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *mixed-grain breakfast cereals

incidence: 6/24*, conc. range: 0.002–0.006 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *rice-based breakfast cereals

AFLATOXIN G₁

incidence: 6/45*, conc. range: 0.008–0.271 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *maize-based breakfast cereals

incidence: 6/55*, conc. range: 0.015–0.104 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *mixed-grain breakfast cereals

AFLATOXIN G₂

incidence: 2/45*, conc. range: 0.008–0.048 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *maize-based breakfast cereals

incidence: 1/55*, conc.: 0.018 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *mixed-grain breakfast cereals

AFLATOXINS (TOTAL)

incidence: 1/72, conc.: 0.5 µg/kg, sample year: 2008/2009, country: Spain¹⁵³⁶

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 8/54, conc. range: <LOQ–42 µg/kg, sample year: unknown, country: France¹²⁷⁹

OCHRATOXIN A

incidence: 1/7* **, conc.: LOD–3 µg/kg, sample year: 2006/2007, country: Greece⁸³, *corn-based breakfast cereals, **conventional

incidence: 1/1* **, conc.: 0.19 µg/kg, sample year: 2006/2007, country: Greece⁸³, *corn-based breakfast cereals, **organic

incidence: 1/4* **, conc.: LOD–3 µg/kg sample year: 2006/2007, country: Greece⁸³, *wheat-based breakfast cereals, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *wheat-based breakfast cereals, **organic

incidence: 2/2* **, conc. range: LOD–3 µg/kg (2 sa, maximum: 0.64 µg/kg), sample year: 2006/2007, country: Greece⁸³, *wheat-based + fibres breakfast cereals, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *wheat-based + fibres breakfast cereals, **organic

incidence: 4/5* **, conc. range: LOD–3 µg/kg (4 sa, maximum: 0.51 µg/kg), sample year: 2006/2007, country: Greece⁸³, *wheat-based + chocolate breakfast cereals, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *wheat-based + chocolate breakfast cereals, **organic

incidence: 2/3* **, conc. range: LOD–3 µg/kg, sample year: 2006/2007, country: Greece⁸³, *mixed breakfast cereals, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *mixed breakfast cereals, **organic

incidence: 1/1* **, conc.: LOD–3 µg/kg, sample year: 2006/2007, country: Greece⁸³, *rice-based breakfast cereals, **conventional

incidence: 0/0* **, no sa investigated, country: Greece⁸³, *rice-based breakfast cereals, **organic

incidence: 1/3* **, conc.: LOD–3 µg/kg, sample year: 2006/2007, country: Greece⁸³, *oat-based breakfast cereals, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *oat-based breakfast cereals, **organic

incidence: 2/4* **, conc. range: LOD–3 µg/kg (2 sa, maximum: 0.87 µg/kg), sample year: 2006/2007, country: Greece⁸³, *breakfast cereals + dried fruits, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *breakfast cereals + dried fruits, **organic

incidence: 1/3* **, conc.: LOD–3 µg/kg, sample year: 2006/2007, country: Greece⁸³, *breakfast cereals + nuts, **conventional

incidence: 1/1* **, conc.: 0.10 µg/kg, sample year: 2006/2007, country: Greece⁸³, *multicereal + nuts, **organic

incidence: 5/6* **, conc. range: LOD–3 µg/kg, sample year: 2006/2007, country: Greece⁸³, *breakfast cereals + dried fruits + nuts, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³,

*breakfast cereals + dried fruits + nuts, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *multicereal formula + cocoa (corn + barley)-based breakfast cereals, **conventional

incidence: 1/1* **, conc.: 0.05 µg/kg, sample year: 2006/2007, country: Greece⁸³, *multicereal formula + cocoa (corn + barley)-based breakfast cereals, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006/2007, country: Greece⁸³, *muesli + multicereal formula, **conventional

incidence: 1/1* **, conc.: 0.05 µg/kg, sample year: 2006/2007, country: Greece⁸³, *muesli + multicereal formula, **organic

incidence: 2/20*, conc. range: 5.1–15.7 µg/kg, Ø conc.: 10.4 µg/kg, sample year: unknown, country: Morocco/Spain/Italy¹⁰⁶, sa from Morocco, *major subsample composition: maize

incidence: 1/10*, conc.: 224.6 µg/kg, sample year: unknown, country: Morocco/Spain/Italy¹⁰⁶, sa from Morocco, *type of food: muesli

incidence: 1/2*, conc.: 127.5 µg/kg, sample year: unknown, country: Morocco/Spain/Italy¹⁰⁶, sa from Morocco, *type of food: fruit rings

incidence: 3/5*, conc. range: 1.51–5.35 µg/kg, Ø conc.: 2.91 µg/kg, sample year: unknown, country: Spain²³², *included corn, oat, wheat, and whole wheat

incidence: 65/85*, conc. range: ≤0.940 µg/kg, sample year: unknown, country: Germany⁵⁹², *barley-based breakfast cereals

incidence: 11/11*, conc. range: ≤0.975 µg/kg, Ø conc.: 0.362 µg/kg, sample year: unknown, country: Spain⁶⁰⁹, *high fiber content

incidence: 8/10*, conc. range: ≤0.368 µg/kg, sample year: unknown, country: Spain⁶⁰⁹, *normal fiber content

incidence: 7/22*, conc. range: 0.2–0.5 µg/kg (4 sa), 0.6–1.0 µg/kg (2 sa), 1.9 µg/kg (1 sa), sample year: unknown, country: UK⁷⁴⁰, *raw materials

incidence: 9/24, conc. range: 0.172–1.84 µg/kg, sample year: 2007, country: Turkey¹¹⁸⁴

incidence: 37/54, conc. range: <LOQ–8.4 µg/kg, sample year: unknown, country: France¹²⁷⁹

incidence: 6/34*, conc. range: ≤0.15 µg/kg, Ø conc.: 0.12 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *corn-based breakfast cereals

incidence: 16/36*, conc. range: ≤1.0 µg/kg, Ø conc.: 0.33 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *multi-grain breakfast cereals

incidence: 17/27*, conc. range: ≤1.4 µg/kg, Ø conc.: 0.61 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *oat-based breakfast cereals

incidence: 3/29*, conc. range: ≤0.22 µg/kg, Ø conc.: 0.13 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *rice-based breakfast cereals

incidence: 11/29*, conc. range: ≤0.64 µg/kg, Ø conc.: 0.3 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *wheat-based breakfast cereals

incidence: 2/71*, conc. range: 0.188–1.268 µg/kg, Ø conc.: 0.728 µg/kg, sample year: 2008, country: Spain¹⁵⁴², *corn-based breakfast cereals

incidence: 7/28*, conc. range: 0.180–0.570 µg/kg, Ø conc.: 0.293 µg/kg, sample year: 2008, country: Spain¹⁵⁴², *wheat/rice-based breakfast cereals

Fusarium Toxins

DEOXYNIVALENOL

incidence: 18/32, conc. range: 15–238 µg/kg, Ø conc.: 75 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 14/25*, conc. range: ≤530 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *wheat breakfast cereals

incidence: 10/24*, conc. range: ≤210 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *corn & grits breakfast cereals

incidence: 10/10*, conc. range: 30–160 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *bran breakfast cereals

incidence: 2/7*, conc. range: 31–347 µg/kg, Ø conc.: 189 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 42/60, conc. range: 10–100 µg/kg (30 sa), >100–250 µg/kg (10 sa), >500–750 µg/kg (1 sa), 2,261 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, NIV, and ZEA, 4 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and NIV, 3 sa co-contaminated with DON, HT-2, and NIV, 3 sa co-contaminated with DON, NIV, and ZEA, 11 sa co-contaminated with DON and NIV, 1 sa co-contaminated with DON and ZEA, 15 sa contaminated solely with DON)

incidence: ?/4*, conc. range: <100 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷,

sa from UK, *breakfast cereals–wheat

incidence: 6/18*, conc. range: 8.6–36.5 µg/kg, Ø conc.: 24.0 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸, *corn-based breakfast cereals

incidence: ?/28, conc. range: ≤1,110 µg/kg, Ø conc.: 90 µg/kg*, sample year: unknown, country: Germany⁹⁴⁵, *of pos sa?

incidence: 22/55*, conc. range: 30.1–121.1 µg/kg, sample year: 2005, country: Spain⁹⁷⁸, *corn-based breakfast cereals

incidence: 2/3*, conc. range: tr, sample year: 1981, country: UK¹²⁴³, *maize-based breakfast cereals

incidence: 7/7*, conc. range: 30–100 µg/kg, sample year: 1982, country: UK¹²⁴³, *bran-based breakfast cereal

incidence: 12/34*, conc. range: ≤420 µg/kg, Ø conc.: 70 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *corn-based breakfast cereals

incidence: 21/36*, conc. range: ≤770 µg/kg, Ø conc.: 130 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *multi-grain breakfast cereals

incidence: 17/27*, conc. range: ≤80 µg/kg, Ø conc.: 30 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *oat-based breakfast cereals

incidence: 1/29*, conc.: 40 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *rice-based breakfast cereals

incidence: 21/29*, conc. range: ≤940 µg/kg, Ø conc.: 160 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *wheat-based breakfast cereals

incidence: 1/1?, conc.: 400 µg/kg, sample year: unknown, country: USA¹⁵⁹⁶

incidence: 36/62, conc. range: ≤718 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

3-ACETYLDEOXYNIVALENOL

incidence: 4/32, conc. range: 16–40 µg/kg, Ø conc.: 25 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 2/60, conc. range: 11–36 µg/kg, Ø conc.: 23.5 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, NIV, and ZEA)

incidence: 34/62, conc. range: ≤431 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

15-ACETYLDEOXYNIVALENOL

incidence: 9/32, conc. range: 15–37 µg/kg, Ø conc.: 23 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 8/60, conc. range: 10–100 µg/kg (6 sa), >100–250 µg/kg (1 sa), 806 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, NIV, and ZEA, 4 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and NIV)

incidence: 30/62, conc. range: ≤194 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 6/7*, conc. range: 19–66 µg/kg, Ø conc.: 35 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 31/62, conc. range: ≤63 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

ENNIATIN A

incidence: 7/7*, conc. range: 36–278 µg/kg, Ø conc.: 74 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

ENNIATIN A₁

incidence: 2/7*, conc. range: 18–410 µg/kg, Ø conc.: 214 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 4?/4, conc. range: ≤464,300 µg/kg, Ø conc.: 156,100 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia, *processed wheat

incidence: 7?/17*, conc. range: ≤423,600 µg/kg, Ø conc.: 113,000 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco, *maize-based breakfast cereals

incidence: 1/7*, conc.: 46,900 µg/kg, sample year: unknown, country:

Morocco/Spain¹⁴⁶⁷, sa from Morocco,
*wheat-based breakfast cereals

incidence: 2?/9*, conc. range: 61,400 µg/
kg, Ø conc.: 55,100 µg/kg, sample year:
unknown, country: Morocco/Spain¹⁴⁶⁷, sa
from Morocco, *rice-based breakfast
cereals

incidence: 1/1*, conc.: 99,100 µg/kg,
sample year: unknown, country:
Morocco/Spain¹⁴⁶⁷, sa from Morocco, *oat-
based breakfast cereals

ENNIATIN B

incidence: 7/7*, conc. range: 18–941 µg/
kg, Ø conc.: 163 µg/kg, sample year: 2010,
country: Czech Republic⁶⁸⁸

incidence: 4?/4, conc. range: ≤110,900 µg/
kg, Ø conc.: 57,400 µg/kg, sample year:
2010, country: Tunisia/Spain¹⁴⁶⁶, sa from
Tunisia, *processed wheat

incidence: 2?/9*, conc. range: 1,050 µg/kg,
Ø conc.: 1,050 µg/kg, sample year:
unknown, country: Morocco/Spain¹⁴⁶⁷, sa
from Morocco, *rice-based breakfast
cereals

incidence: 1/1*, conc.: 81,100 µg/kg,
sample year: unknown, country:
Morocco/Spain¹⁴⁶⁷, sa from Morocco, *oat-
based breakfast cereals

ENNIATIN B₁

incidence: 6/7*, conc. range: 10–785 µg/
kg, Ø conc.: 144 µg/kg, sample year: 2010,
country: Czech Republic⁶⁸⁸

incidence: 4?/4, conc. range:
≤29,700 µg/kg, Ø conc.: 25,100 µg/kg,
sample year: 2010, country: Tunisia/
Spain¹⁴⁶⁶, sa from Tunisia, *processed
wheat

incidence: 7?/17*, conc. range: ≤20,100 µg/
kg, Ø conc.: 20,100 µg/kg, sample year:
unknown, country: Morocco/Spain¹⁴⁶⁷, sa
from Morocco, *maise-based breakfast
cereals

incidence: 1/7*, conc.: 79,500 µg/kg,
sample year: unknown, country:
Morocco/Spain¹⁴⁶⁷, sa from Morocco,
*wheat-based breakfast cereals

incidence: 2?/9*, conc. range: 600 µg/kg, Ø
conc.: 600 µg/kg, sample year: unknown,
country: Morocco/Spain¹⁴⁶⁷, sa from
Morocco, *rice-based breakfast cereals
incidence: 1/1*, conc.: 21,400 µg/kg,
sample year: unknown, country:
Morocco/Spain¹⁴⁶⁷, sa from Morocco, *oat-
based breakfast cereals

FUMONISIN B₁

incidence: 3/4*, conc. range: 18–237 µg/
kg, Ø conc.: 117 µg/kg, sample year:
2003/2004, country: Canada⁶¹⁴, *maize-
based breakfast cereals

incidence: 30/41?, conc. range: <LOQ–
1,113 µg/kg, sample year: unknown,
country: France¹²⁷⁹

incidence: 19/534* **, conc. range: <LOQ–
204.7 µg/kg, sample year: 2009–2011,
country: Spain¹⁶⁶¹, sa from
France, Germany, and Spain, *breakfast
cereals and cereal bars, **conventional;
for detailed information please see the
article

incidence: 82/716* **, conc. range: <LOQ–
1,201.7 µg/kg, sample year: 2009–2011,
country: Spain¹⁶⁶¹, sa from France,
Germany, and Spain, *breakfast cereals
and cereal bars, **organic; for detailed
information please see the article

FUMONISIN B₂

incidence: 1/4*, conc.: 21 µg/kg, sample
year: 2003/2004, country: Canada⁶¹⁴,
*maize-based breakfast cereals

incidence: 1/3*, conc.: 5.0 µg/kg, sample
year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa
from Tunisia, *wheat-based breakfast
cereals

incidence: 19/534* **, conc. range: <LOQ–
199.9 µg/kg, sample year: 2009–2011,
country: Spain¹⁶⁶¹, sa from France,
Germany, and Spain, *breakfast cereals
and cereal bars, **conventional; for
detailed information please see the article

incidence: 81/716* **, conc. range: <LOQ–
1,010.5 µg/kg, sample year: 2009–2011,
country: Spain¹⁶⁶¹, sa from France,

Germany, and Spain, *breakfast cereals and cereal bars, **organic; for detailed information please see the article

FUMONISINS (B₁, B₂, B₃)
incidence: 12/50, conc. range: 11–194 µg/kg, sample year: 1994/1995, country: UK³⁸³

FUMONISINS
incidence: 30/34*, conc. range: ≤1,980 µg/kg, Ø conc.: 129 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *corn-based breakfast cereals

incidence: 11/24*, conc. range: ≤88 µg/kg, Ø conc.: 27 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *multi-grain breakfast cereals

incidence: 5/19*, conc. range: ≤57 µg/kg, Ø conc.: 23 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *oat-based breakfast cereals

incidence: 2/29*, conc. range: 5 µg/kg, Ø conc.: 5 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *rice-based breakfast cereals

incidence: 5/29*, conc. range: ≤51 µg/kg, Ø conc.: 16 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *wheat-based breakfast cereals

incidence: 1/1*, conc.: 5 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *buckwheat-based breakfast cereals

FUSAPROLIFERIN
incidence: 1/9*, conc. range: 3,900 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco, *rice-based breakfast cereals

incidence: 1/1*, conc.: 4,400 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco, *oat-based breakfast cereals

FUSARENON-X (4-ACETYLNIVALENOL)
incidence: 1/60, conc.: 34 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2,

NEO, NIV, T-2, and ZEA)

HT-2 TOXIN
incidence: 10/32, conc. range: 12–22 µg/kg, Ø conc.: 13 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 7/60, conc. range: 11–77 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, NIV, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, and ZEA, 3 sa co-contaminated with DON, HT-2, and NIV, 1 sa contaminated solely with HT-2)

incidence: 1/27*, conc.: 20 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *oat-based breakfast cereals

incidence: 40/62, conc. range: ≤42 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

MONILIFORMIN
incidence: 17/56*, conc. range: <15–76 µg/kg, sample year: unknown, country: UK⁷⁴³, *maize-based breakfast cereals

NEOSOLANIOL
incidence: 1/60, conc.: 11 µg/kg, sample year: 2000, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NEO, NIV, T-2, and ZEA)

NIVALENOL
incidence: 1/7*, conc.: 31 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 26/60, conc. range: 10–100 µg/kg (21 sa), >100–250 µg/kg (4 sa), 260 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, NIV, and ZEA, 4 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 1 sa

co-contaminated with DON, HT-2, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and NIV, 3 sa co-contaminated with DON, HT-2, and NIV, 3 sa co-contaminated with DON, NIV, and ZEA, 11 sa co-contaminated with DON and NIV)

incidence: 6/55*, conc. range: 51.5–106.5 µg/kg, sample year: 2005, country: Spain⁹⁷⁸, *corn-based breakfast cereals

incidence: 1/36*, conc.: 60 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *multi-grain breakfast cereals

T-2 TOXIN

incidence: 2/32, conc. range: 4–7 µg/kg, Ø conc.: 6 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 1/60, conc.: 31 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NIV, NEO, T-2, and ZEA)

incidence: ?/28, conc. range: ≤5.9 µg/kg, Ø conc.: 0.70 µg/kg*, sample year: unknown, country: Germany⁹⁴⁵, *of pos sa?

incidence: 38/62, conc. range: ≤33 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

α-ZEARALENOL

incidence: 32/62, conc. range: ≤515 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

α-ZEARALENOL-4-GLUCOSIDE

incidence: 16/62, conc. range: ≤192 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

β-ZEARALENOL

incidence: 26/62, conc. range: ≤147 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

β-ZEARALENOL-4-GLUCOSIDE

incidence: 18/62, conc. range: ≤206 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

ZEARALENONE

incidence: 4/39, conc. range: 2.6–8.6 µg/kg, Ø conc.: 4.6 µg/kg, sample year: 1985, country: USA⁸³¹

incidence: 11/60, conc. range: 8–25 µg/kg (6 sa), 25.1–50 µg/kg (2 sa), 50.1–75 µg/kg (1 sa), >100–231.8 µg/kg (2 sa), sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, NIV, and ZEA, 4 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, and ZEA, 3 sa co-contaminated with DON, NIV, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: ?/4*, conc. range: <10 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *breakfast cereals - wheat

incidence: 7/34*, conc. range: ≤21 µg/kg, Ø conc.: 6.1 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *corn-based breakfast cereals

incidence: 11/36*, conc. range: ≤100 µg/kg, Ø conc.: 15 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *multi-grain breakfast cereals

incidence: 3/27*, conc. range: ≤6.9 µg/kg, Ø conc.: 4.7 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *oat-based breakfast cereals

incidence: 2/29*, conc. range: ≤3.6 µg/kg, Ø conc.: 2.9 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *rice-based breakfast cereals

incidence: 11/29*, conc. range: ≤5.5 µg/kg, Ø conc.: 2.4 µg/kg, sample year: 1999–2001, country: Canada¹³⁷¹, *wheat-based breakfast cereals

incidence: 32/62, conc. range: ≤450 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

ZEARALENONE-4-GLUCOSIDE

incidence: 25/62, conc. range: ≤369 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

ZEARALENONE-4-SULFATE

incidence: 1/4*, conc.: 1.8 µg/kg, sample year: unknown, country: Austria/UK³²⁷, sa from UK, *breakfast cereals - wheat

incidence: 17/62, conc. range: ≤417 µg/kg, sample year: 2010/2011, country: Belgium¹⁶²²

Cereal (infant cereals) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 57/91, conc. range: ≤3.11 µg/kg*, sample year: unknown, country: Spain¹⁵⁶¹, *outlier; for detailed information please see the article

AFLATOXIN B₂

incidence: 36/91, conc. range: ≤0.41 µg/kg*, sample year: unknown, country: Spain¹⁵⁶¹, *outlier; for detailed information please see the article

AFLATOXIN G₁

incidence: 60/91, conc. range: ≤0.42 µg/kg*, sample year: unknown, country: Spain¹⁵⁶¹, *outlier; for detailed information please see the article

AFLATOXIN G₂

incidence: 39/91, conc. range: ≤0.07 µg/kg*, sample year: unknown, country: Spain¹⁵⁶¹, *outlier; for detailed information please see the article

Fusarium Toxins

BEAUVERICIN

incidence: 1/5*, conc.: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and NIV)

incidence: 1/1*, conc.: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, ENB₁, and NIV)

incidence: 2/6*, conc. range: 600–10,600 µg/kg, Ø conc.: 5,600 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco, *rice flour infant cereals

DEOXYNIVALENOL

incidence: 5/5*, conc. range: <10–21 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa co-contaminated with DON, ENA₁, ENB, ENB₁, and HT-2, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and NIV, 1 sa co-contaminated with DON, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENB, and ENB₁, 1 sa contaminated solely with DON)

incidence: 1/1*, conc.: 13 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, ENB₁, and NIV)

3-ACETYLDEOXYNIVALENOL

incidence: 0/5*, conc. range: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *conventional

incidence: 1/1*, conc.: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, ENB₁, and NIV)

ENNIATIN A₁

incidence: 3/5*, conc. range: <4 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa co-contaminated with DON, ENA₁, ENB, ENB₁, and HT-2, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and NIV, 1 sa co-contaminated with DON, ENA₁, ENB, and ENB₁)

incidence: 1/1*, conc.: <4 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, ENB₁, and NIV)

incidence: 2/6*, conc. range:
 ≤52,000 µg/kg, Ø conc.: 52,000 µg/kg,
 sample year: unknown, country:
 Morocco/Spain¹⁴⁶⁷, sa from Morocco,
 *rice-based infant cereals

ENNIATIN B

incidence: 4/5*, conc. range: <3.8 µg/
 kg, sample year: 2002, country: Finland/
 Italy¹¹⁶³, *conventional (1 sa co-
 contaminated with DON, ENA₁, ENB,
 ENB₁, and HT-2, 1 sa co-contaminated
 with BEA, DON, ENA₁, ENB, ENB₁,
 and NIV, 1 sa co-contaminated with
 DON, ENA₁, ENB, and ENB₁, 1 sa
 co-contaminated with DON, ENB,
 and ENB₁)

incidence: 1/1*, conc.: <3.8 µg/kg, sample
 year: 2002, country: Finland/Italy¹¹⁶³, sa
 from Italy, *organic (1 sa co-contaminated
 with BEA, DON, 3-AcDON, ENA₁, ENB,
 ENB₁, and NIV)

incidence: 2/6*, conc. range: ≤5,700 µg/
 kg, Ø conc.: 5,700 µg/kg, sample year:
 unknown, country: Morocco/Spain¹⁴⁶⁷, sa
 from Morocco, *rice-based infant cereals

ENNIATIN B₁

incidence: 4/5*, conc. range: <10.8 µg/
 kg, sample year: 2002, country: Finland/
 Italy¹¹⁶³, *conventional (1 sa co-
 contaminated with DON, ENA₁, ENB,
 ENB₁, and HT-2, 1 sa co-contaminated
 with BEA, DON, ENA₁, ENB, ENB₁,
 and NIV, 1 sa co-contaminated with
 DON, ENA₁, ENB, and ENB₁, 1 sa co-
 contaminated with DON, ENB, and ENB₁)

incidence: 1/1*, conc.: <10.8 µg/kg,
 sample year: 2002, country: Finland/
 Italy¹¹⁶³, sa from Italy, *organic (1 sa
 co-contaminated with BEA, DON,
 3-AcDON, ENA₁, ENB, ENB₁, and NIV)

incidence: 2/6*, conc. range:
 ≤14,500 µg/kg, Ø conc.: 11,200 µg/kg,
 sample year: unknown, country:
 Morocco/Spain¹⁴⁶⁷, sa from Morocco,
 *rice-based infant cereals

FUMONISIN

incidence: 1/1*, conc.: 200 µg/kg, sample
 year: unknown, country: USA³⁵⁷, *maize-
 based infant cereals

FUSAPROLIFERIN

incidence: 2/6*, conc. range: ≤7,400 µg/kg,
 Ø conc.: 7,400 µg/kg, sample year: unknown,
 country: Morocco/Spain¹⁴⁶⁷, sa from
 Morocco, *rice flour infant cereals

HT-2 TOXIN

incidence: 1/5*, conc.: <20 µg/kg, sample
 year: 2002, country: Finland/Italy¹¹⁶³,
 *conventional (1 sa co-contaminated with
 DON, ENA₁, ENB, ENB₁, and HT-2)

incidence: 0/1*, conc.: no contamination,
 sample year: 2002, country: Finland/
 Italy¹¹⁶³, *organic

NIVALENOL

incidence: 0/5*, conc. range: no
 contamination, sample year: 2002, country:
 Finland/Italy¹¹⁶³, *conventional

incidence: 1/1*, conc.: <30 µg/kg, sample
 year: 2002, country: Finland/Italy¹¹⁶³, sa
 from Italy, *organic (1 sa co-contaminated
 with BEA, DON, 3-AcDON, ENA₁, ENB,
 ENB₁, and NIV)

Cereal and pulse products see Cereal

Cereal bar may contain the following
 mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 1/3, conc.: 2–5 µg/kg, sample
 year: 1999–2001, country: Switzerland¹³⁶⁰
 see also Cereal (breakfast cereals)

Cereal flakes see Flakes (cereal)

Cereal meal see Meal (cereal)

Cereal products see Product (cereal
 products)

Chamomile see Medicinal plant

Cheddar cheese see Cheese
(Cheddar cheese)

Cheese may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/248, conc.: 1 µg/kg, sample year: unknown, country: Tunisia/USA²⁰, sa from Tunisia

incidence: 6?/26, conc. range: 7.9–15.0 µg/kg, sample year: 1974/1975, country: India³²¹

AFLATOXIN B₂

incidence: 1/26, conc.: 1 µg/kg, sample year: 1974/1975, country: India³²¹

AFLATOXIN M₁

incidence: 27/80*, conc. range: 0.1–0.51 µg/kg, Ø conc.: 0.23 µg/kg, sample year: 1972–1974, country: Germany⁶, *fresh cheese

incidence: 58/77*, conc. range: 0.1–1.30 µg/kg, Ø conc.: 0.43 µg/kg, sample year: 1972–1974, country: Germany⁶, *hard cheese

incidence: 54/134*, conc. range: 0.1–0.55 µg/kg, Ø conc.: 0.26 µg/kg, sample year: 1972–1974, country: Germany⁶, *farmer's cheese

incidence: 2/248, conc. range: 6.2–10.6 µg/kg, Ø conc.: 8.4 µg/kg, sample year: unknown, country: Tunisia/USA²⁰, sa from Tunisia

incidence: 9*/279, conc. range: 0.4–1.1 µg/kg, Ø conc.: 0.8 µg/kg, sample year: unknown, country: Japan⁷⁸, sa imported, *included Cheddar, Comte, Emmental, Gouda, Maribo, and Mozzarella

incidence: 8/118, conc. range: 0.1–1.0 µg/kg, Ø conc.: 0.4 µg/kg, sample year: before 1985, country: USA⁸⁴, contaminated sa from England, France, Holland, and Switzerland

incidence: 4/41, conc. range: 0.0795–0.389 µg/l, Ø conc.: 0.257 µg/kg, sample year: 2004, country: Italy⁸⁵

incidence: 4/42*, conc. range: 0.050–0.100 µg/kg, sample year: 1983, country: Italy¹⁰⁵, *cow cheese

incidence: 16/82, conc. range: 0.005–0.050 µg/kg (9 sa), 0.051–0.100 µg/kg (1 sa), 0.101–0.250 µg/kg (4 sa), 0.251–0.400 µg/kg (2 sa), sample year: 1984, country: Italy¹⁴², sa from France

incidence: 9/34, conc. range: 0.005–0.050 µg/kg (8 sa), 0.051–0.100 µg/kg (1 sa), sample year: 1984, country: Italy¹⁴², sa from FR Germany

incidence: 23/43, conc. range: 0.005–0.050 µg/kg (4 sa), 0.051–0.100 µg/kg (8 sa), 0.101–0.250 µg/kg (11 sa), sample year: 1984, country: Italy¹⁴², sa from Netherlands

incidence: 130/416, conc. range: 0.005–0.050 µg/kg (68 sa), 0.051–0.100 µg/kg (26 sa), 0.101–0.250 µg/kg (27 sa), 0.251–0.400 µg/kg (7 sa), >0.400 µg/kg (2 sa), sample year: 1985, country: Italy¹⁴²

incidence: 44/272*, conc. range: 0.1–1.2 µg/kg, sample year: unknown, country: Japan¹⁸⁴, sa from Australia, Denmark (11 sa contaminated), France, Netherlands (8 sa contaminated), New Zealand, Sweden, Switzerland, UK (1 sa contaminated), W. Germany (5 sa contaminated), and other countries (19 sa contaminated), *natural cheese

incidence: 46/51*, conc. range: ≤0.810 µg/kg, sample year: unknown, country: Turkey²²⁶

incidence: 5/9* **, conc. range: 20–72 µg/kg, Ø conc.: 42.6 µg/kg, sample year: unknown, country: Spain²⁸⁷, *fresh cheese, **made of different types of milk

incidence: 5/9* **, conc. range: 20–130 µg/kg, Ø conc.: 73.8 µg/kg, sample year: unknown, country: Spain²⁸⁷, *semiripened cheese, **made of different types of milk

incidence: 6/17* **, conc. range: 20–200 µg/kg, Ø conc.: 105.33 µg/kg, sample year: unknown, country: Spain²⁸⁷, *ripened cheese, **made of different types of milk

incidence: 79/100*, conc. range: 0.051–0.150 µg/kg (30 sa), 0.151–0.250 µg/kg (24 sa), 0.251–0.450 µg/kg (16 sa), 0.451–0.650 µg/kg (9 sa), sample year: 2001/2002, country: Turkey²⁹⁸, *processed cheese

incidence: 4/4, conc. range: 0.16–0.32 µg/l, sample year: 2008, country: China/Russia/Korea¹⁰⁴⁰, sa from China

incidence: 8/25*, conc. range: 0.015–0.050 µg/kg (4 sa), 0.051–0.100 µg/kg (3 sa), 0.160 µg/kg (1 sa), sample year: 1996, country: Italy¹⁰⁸⁸, *goat cheese

incidence: 11/20*, conc. range: 0.015–0.050 µg/kg (5 sa), 0.051–0.100 µg/kg (3 sa), 0.101–0.200 µg/kg (3 sa, maximum: 0.200 µg/kg), sample year: 1996, country: Italy¹⁰⁸⁸, sa from France, Greece, Italy, and Netherlands, *goat cheese

incidence: 4/30*, conc. range: 0.021–0.101 µg/kg, Ø conc.: 0.0483 µg/kg, sample year: 2001/2002, country: Italy¹⁰⁸⁹, *sheep cheese and ricotta

incidence: 11/39, conc. range: 0.051–0.080 µg/kg (1 sa), 0.081–0.110 µg/kg (2 sa), >0.110 µg/kg (8 sa, maximum: 0.18844 µg/kg), sample year: 2004, country: Turkey¹¹⁰²

incidence: 47/88*, conc. range: 0.082–1.254 µg/kg, Ø conc.: 0.412 µg/kg, sample year: unknown, country: Iran¹¹⁰⁵, *traditional cheese

incidence: 2/13*, conc. range: 0.039–0.223 µg/kg, Ø conc.: 0.131 µg/kg, sample year: 2004/2005, country: Slovenia¹¹⁰⁸, *fresh salted and non-salted cheese

incidence: 2/13*, conc. range: 0.025–0.068 µg/kg, Ø conc.: 0.0465 µg/kg, sample year: 2004/2005, country: Slovenia¹¹⁰⁸, *semi-hard cheese

incidence: 32/40, conc. range: 0.0238–0.452 µg/kg, sample year: 2005–2007,

country: Kuwait¹¹⁰⁹, sa from different countries; for detailed information please see the article

incidence: 2/5*, conc. range: 0.1–0.9 µg/kg, Ø conc.: 0.5 µg/kg, sample year: unknown, country: Japan¹¹²¹, *all sa imported

incidence: 12/94* **, conc. range: 0.050–0.215 µg/kg, sample year: unknown, country: Italy¹²⁸⁴, *sheep cheese, **short, medium, and long ripening term

incidence: 25/92* **, conc. range: 0.050–0.160 µg/kg, sample year: unknown, country: Italy¹²⁸⁴, *cow cheese, **short, medium, and long ripening term

incidence: 2/12* **, conc. range: 0.090–0.250 µg/kg, Ø conc.: 0.170 µg/kg, sample year: unknown, country: Italy¹²⁸⁴, *goat cheese, **short, and medium ripening term

incidence: 5/16* **, conc. range: 0.050–0.140 µg/kg, sample year: unknown, country: Italy¹²⁸⁴, *sheep–goat cheese, **short, medium, and long ripening term

incidence: 24/24*, conc. range: >0.003–0.012 µg/kg (4 sa), 0.013–0.304 µg/kg (20 sa), sample year: unknown, country: Brazil/USA¹³⁹⁹, sa from Brazil, *included Minas Frescal light, Minas Frescal, Minas Padrão, and Prato cheese

incidence: 15/19, conc. range: 10–50 µg/kg (7 sa), 50–100 µg/kg (4 sa), 100–150 µg/kg (4 sa), sample year: unknown, country: Belgium¹⁴⁷²

AFLATOXIN M₂

incidence: 1/5*, conc.: tr, sample year: unknown, country: Japan¹¹²¹, *all sa imported

STERIGMATOCYSTIN

incidence: 7/21*, conc. range: 0.03–1.23 µg/kg, Ø conc.: 0.28 µg/kg, sample year: 2008, country: Belgium/Latvia⁷⁶, *different varieties of cheeses; for detailed information please see the article

incidence: 3/66* **, conc. range: 7.5–17.5 µg/kg, Ø conc.: 10.8 µg/kg, sample

year: unknown, country:

Czechoslovakia⁷⁵⁴, *hard cheese, **outer surface layer (1 cm)

incidence: 9/39* **, conc. range: 5–600 µg/kg **, Ø conc.: 80.7 µg/kg, sample year: unknown, country: Netherlands⁷⁵⁵, *hard cheese, **outer surface layer (1 cm)

incidence: 3/48* **, conc. range: 45–330 µg/kg, Ø conc.: 166.7 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the peripheral zone of the cheese

incidence: 3/48* **, conc. range: 45–330 µg/kg, Ø conc.: 166.7 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the whole cheese

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/25*, conc. range: ≤50 µg/kg, sample year: 1980, country: UK⁷⁷³, *mold-spoiled cheese

incidence: 15/19*, conc. range: ≤50 µg/kg, sample year: 1981/1982, country: UK⁷⁷³, *mold-spoiled cheese

CYCLOPIAZONIC ACID

incidence: 11/20*, conc. range: 0.05–0.1 µg/kg (3 sa), 0.1–0.2 µg/kg (5 sa), 0.2–1.5 µg/kg (3 sa), sample year: unknown, country: France⁷¹⁶, *cheese crust

incidence: 6/6*, conc. range: 20–80 µg/kg, sample year: unknown, country: Italy¹¹⁴¹, *white surface cheese

OCHRATOXIN A

incidence: 2/33, conc. range: ≤0.110 µg/kg, sample year: unknown, country: Germany⁵⁹²

incidence: 8/38*, conc. range: ≤0.860 µg/kg, sample year: unknown, country: Germany⁵⁹², *cheese with ingredients (spices etc.)

incidence: 12/92*, conc. range: ≤0.060 µg/kg, sample year: unknown, country: Germany⁵⁹², *fresh cheese, yoghurt with ingredients

incidence: 15/25*, conc. range:

≤260 µg/kg, sample year: 1980, country: UK⁷⁷³, *mold spoiled-cheese

incidence: 3/19*, conc. range: ≤7 µg/kg, sample year: 1981/1982, country: UK⁷⁷³, *mold spoiled-cheese

PATULIN

incidence: 1/48* **, conc.: 90 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the peripheral zone of the cheese

incidence: 1/48* **, conc.: 90 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the whole cheese

incidence: 4/39*, conc. range: 45–335 µg/kg, Ø conc.: 155 µg/kg, sample year: unknown, country: France¹³³⁰, *mold-ripened hard cheese

incidence: 1/18*, conc.: 30 µg/kg, sample year: unknown, country: France¹³³⁰, *goat cheese

PENICILLIC ACID

incidence: 4/48* **, conc. range: 45–950 µg/kg, Ø conc.: 380 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the peripheral zone of the cheese

incidence: 2/48* **, conc. range: tr–45 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the central zone of the cheese

incidence: 4/48* **, conc. range: 45–385 µg/kg, Ø conc.: 177.5 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the whole cheese

incidence: 5/39*, conc. range: tr–710 µg/kg, sample year: unknown, country: France¹³³⁰, *mold-ripened hard cheese

incidence: 2/18*, conc. range: 45–210 µg/kg, 127.5 µg/kg, sample year: unknown, country: France¹³³⁰, *goat cheese

Penicillium Toxins

MYCOPHENOLIC ACID

incidence: 6/15*, conc. range: 10–100 µg/kg (1 sa), 100–1,000 µg/kg (3 sa), 1,000–5,000 µg/kg (2 sa), sample year: unknown, country: France⁷¹⁸, *industrial French cheeses

incidence: 4/48* **, conc. range: 100–280 µg/kg, Ø conc.: 155 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the peripheral zone of the cheese

incidence: 4/48* **, conc. range: 100–280 µg/kg, Ø conc.: 155 µg/kg, sample year: unknown, country: France¹³³⁰, *hard cheese, **in the whole cheese

incidence: 7/39*, conc. range: 50–2,900 µg/kg, Ø conc.: 854.3 µg/kg, sample year: unknown, country: France¹³³⁰, *mold-ripened hard cheese

Cheese (Bhutanese cheese) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/19, conc. range: 68–212 µg/kg, Ø conc.: 156 µg/kg, sample year: unknown, country: India⁶⁰¹

AFLATOXIN B₂

incidence: 1/19, conc.: 56 µg/kg, sample year: unknown, country: India⁶⁰¹

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 6/19, conc. range: 74–224 µg/kg, Ø conc.: 125 µg/kg, sample year: unknown, country: India⁶⁰¹

OCHRATOXIN A

incidence: 5/19, conc. range: 42–116 µg/kg, Ø conc.: 84.2 µg/kg, sample year: unknown, country: India⁶⁰¹

Cheese (Blue cheese) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN M₁

incidence: 7/7, conc. range: 0.084–0.556 µg/kg, Ø conc.: 0.233 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 30/92, conc. range: 0.1–3.0 µg/kg, sample year: unknown, country: Italy¹⁶⁵¹, *included 54 sa Gorgonzola (Italy, 23 sa contaminated), 20 sa Bleu (France), 14 sa Roquefort (France, 7 contaminated), and 4 sa Bergader (Germany)

PENICILLIC ACID

incidence: 1/110, conc.: 820 µg/kg, sample year: unknown, country: France¹³³⁰

Penicillium Toxins

ISOFUIMIGACLAVINE A

incidence: 5/12*, conc. range: 20–4,700 µg/kg, sample year: unknown, country: Canada⁸⁰⁵, sa from Denmark, England, Finland, France, Germany, and Italy, *included “mold-free” and “high-mold” sa

ISOFUIMIGACLAVINE B

incidence: 6/12*, conc. range: tr, sample year: unknown, country: Canada⁸⁰⁵, sa from Denmark, England, Finland, France, Germany, and Italy, *included “mold-free” and “high-mold” sa

MYCOPHENOLIC ACID

incidence: 3/12*, conc. range: 10–100 µg/kg, sample year: unknown, country: France⁷¹⁸, *Gorgonzola

incidence: 3/12*, conc. range: 10–100 µg/kg (2 sa), 100–1,000 µg/kg (1 sa), sample year: unknown, country: France⁷¹⁸,

*German blue cheeses

incidence: 3/6*, conc. range: 10–100 µg/kg (1 sa), 100–1,000 µg/kg (2 sa), sample year: unknown, country: France⁷¹⁸, *Bleu des Causses

incidence: 21/25*, conc. range: 10–100 µg/kg (1 sa), 100–1,000 µg/kg (2 sa), 1,000–5,000 µg/kg (10 sa), 5,000–10,000 µg/kg (5 sa), 10,000–15,000 µg/kg (3 sa), maximum 14,300 µg/kg, sample year: unknown, country: France⁷¹⁸, *Roquefort

incidence: 2/2*, conc. range: 1,000–5,000 µg/kg, sample year: unknown, country: France⁷¹⁸, *melted cheese (Roquefort)

incidence: 1/11*, conc.: 300 µg/kg, sample year: 2003, country: Finland¹²⁰², sa from Denmark, Finland, France, and Germany, *10 blue and 1 blue–white mold cheese(s)

incidence: 4/110, conc. range: 10–100 µg/kg (9 sa), 100–1,000 µg/kg (8 sa), 1,000–5,000 µg/kg (15 sa), 5,000–10,000 µg/kg (5 sa), 10,000–15,000 µg/kg (4 sa), sample year: unknown, country: France¹³³⁰

PR IMINE

incidence: 50/60, conc. range: 19.1–41.9 µg/kg, Ø conc.: 29.5 µg/kg, sample year: unknown, country: Canada⁸¹⁴

ROQUEFORTINE

incidence: 2/2*, conc. range: 210–650 µg/kg, Ø conc.: 430 µg/kg, sample year: unknown, country: Italy³⁰⁸, sa from Great Britain and Ireland, *Stilton

incidence: 3/3, conc. range: 50–690 µg/kg, Ø conc.: 420 µg/kg, sample year: unknown, country: Italy³⁰⁸, sa from France and Greece

incidence: 3/3*, conc. range: 970–1,470 µg/kg, Ø conc.: 1,257 µg/kg, sample year: unknown, country: Italy³⁰⁸, sa from Denmark and Iceland, *Danablu

incidence: 2/2*, conc. range: 240–300 µg/kg, Ø conc.: 270 µg/kg, sample year: unknown, country: Italy³⁰⁸, sa from Austria and Germany, *Edelpilzkäse

incidence: 20/20*, conc. range: 70–1,440 µg/kg, Ø conc.: 367 µg/kg, sample year: unknown, country: Italy³⁰⁸, *‘dolce’ and ‘naturale’ Gorgonzola

incidence: 10/12*, conc. range: 60–6,800 µg/kg, sample year: unknown, country: Canada⁸⁰⁵, sa from Denmark, England, Finland, France, Germany, and Italy, *included ‘mold-free’ and ‘high-mold’ sa

incidence: 12/12, conc. range: 162–651 µg/kg, Ø conc.: 424 µg/kg, sample year: unknown, country: USA⁸²⁹

incidence: 2/2*, conc. range: 18–72 µg/kg, Ø conc.: 45 µg/kg, sample year: unknown, country: USA⁸²⁹, *blue cheese dressing

incidence: 11/11*, conc. range: 800–12,000 µg/kg, Ø conc.: 3,336 µg/kg, sample year: 2003, country: Finland¹²⁰², sa from Denmark, Finland, France, and Germany, *10 blue and 1 blue–white mold cheese(s)

incidence: 3/3*, conc. range: 705–1,883.3 µg/kg, Ø conc.: 1,179.4 µg/kg, sample year: unknown, country: Netherlands¹³⁰¹, *included Danish Blue, Gorgonzola, and Roquefort

Cheese (Brie cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 6/6, conc. range: 0.058–0.414 µg/kg, Ø conc.: 0.195 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

incidence: 5/5, conc. range: 0.100–0.714 µg/kg, Ø conc.: 0.299 µg/kg, sample year: 1981, country: Japan⁷¹, sa from France

incidence: 1/9, conc.: 0.050 µg/kg, sample year: 1983, country: Japan⁷¹, sa from France

incidence: 2/2, conc. range: 0.024–0.029 µg/kg, Ø conc.: 0.0265 µg/kg, sample

year: unknown, country: Japan⁷¹, sa from Germany

Cheese (Butter cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 5/5, conc. range: 0.025–0.041 µg/kg, Ø conc.: 0.037 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Germany

Cheese (Camembert cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 33/65*, conc. range: 0.1–0.73 µg/kg, Ø conc.: 0.31 µg/kg, sample year: 1972–1974, country: Germany⁶, *Camembert and Brie cheese

incidence: 7/7, conc. range: 0.055–0.479 µg/kg, Ø conc.: 0.207 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

incidence: 12/13, conc. range: 0.150–0.565 µg/kg, Ø conc.: 0.327 µg/kg, sample year: 1981, country: Japan⁷¹, sa from France

incidence: 6/12, conc. range: 0.013–0.023 µg/kg, Ø conc.: 0.019 µg/kg, sample year: 1983, country: Japan⁷¹, sa from France

incidence: 1/1, conc.: 0.018 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Germany

incidence: 1/100, conc.: tr, sample year: 1976, country: France¹¹⁷

incidence: 1/1, conc.: 0.312 µg/kg, sample year: unknown, country: Japan⁶⁸³

incidence: 1/1, conc.: 0.68 µg/kg*, sample year: unknown, country: France/UK¹⁰⁶⁴, *measured after 15 days' ripening

Cheese (Cecil cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 6/30, conc. range: 0.0531–0.1150 µg/kg, Ø conc.: 0.08258 µg/kg, sample year: 2003, country: Turkey⁴²⁹

Cheese (Cheddar cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 4/4, conc. range: 0.015–0.030 µg/kg, Ø conc.: 0.020 µg/kg, sample year: unknown, country: Japan⁷¹, sa from UK

incidence: 12/12, conc. range: 0.02–0.05 µg/kg (8 sa), 0.06–0.1 µg/kg (4 sa, maximum: 0.09 µg/kg), sample year: unknown, country: UK⁷³⁵

Cheese (Cheshire cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 13/13, conc. range: 0.02–0.05 µg/kg (3 sa), 0.06–0.1 µg/kg (5 sa), 0.11–0.2 µg/kg (5 sa, maximum: 0.17 µg/kg), sample year: unknown, country: UK⁷³⁵

Cheese (Civil cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 21/25, conc. range: 0.51–0.250 µg/kg (1 sa), 0.251–0.400 µg/kg (20 sa), sample year: unknown, country: Turkey¹⁷⁰

incidence: 4/9, conc. range: 0.012–0.018 µg/kg, Ø conc.: 0.01232 µg/kg, sample year: unknown, country: Turkey¹¹³⁵

Cheese (Cottage cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/20, conc.: 104 µg/kg, sample year: unknown, country: Egypt⁶¹¹

AFLATOXIN B₂

incidence: 1/20, conc.: 89 µg/kg, sample year: unknown, country: Egypt⁶¹¹

Aspergillus and *Penicillium* Toxins

OCHRATOXINS (A, B)

incidence: 1/20, conc.: 112 µg/kg, sample year: unknown, country: Egypt⁶¹¹

Cheese (Cream cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 9/9, conc. range: 0.037–0.134 µg/kg, Ø conc.: 0.079 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

incidence: 8/200, conc. range: 0.100–0.700 µg/kg, Ø conc.: 0.285 µg/kg, sample year: 2001/2002, country: Turkey³¹⁹

incidence: 2/2, conc. range: 0.064–0.087 µg/kg, Ø conc.: 0.076 µg/kg, sample year: unknown, country: Japan⁶⁸³

incidence: 44/49, conc. range: <0.001 µg/kg (12 sa), 0.011–0.050 µg/kg (10 sa), 0.051–0.100 µg/kg (15 sa), 0.101–0.250 µg/kg (7 sa), sample year: 2002/2003, country: Turkey⁹²¹

incidence: 68/94, conc. range: 0.050–0.150 µg/kg (23 sa), 0.151–0.250 µg/kg (27 sa), 0.251–0.450 µg/kg (10 sa), 0.451–0.650 µg/kg (5 sa), 0.651–0.7854 µg/kg (3 sa), Ø conc.: 0.2301 µg/kg, sample year: 2007/2008, country: Iran¹⁰⁸²

incidence: 98/99, conc. range: 0.001–0.050 µg/kg (6 sa), 0.051–0.100 µg/kg (17 sa), 0.101–0.250 µg/kg (58 sa), >0.250 µg/kg (18

sa, maximum: 4.100 µg/kg, Ø conc.: 0.330 µg/kg*, sample year: 2005, country: Turkey¹¹⁰⁷, *of pos sa?

Penicillium Toxins

PENITREM A

incidence: 1/1*, conc.: nc, sample year: unknown, country: USA⁸⁰⁰, *visible moldy

Cheese (Domiat cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 1/10, conc.: 0.5 µg/kg, sample year: 1999/2000, country: Egypt²²¹

Cheese (Double Gloucester cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 13/13, conc. range: 0.02–0.05 µg/kg (4 sa), 0.06–0.1 µg/kg (8 sa), 0.13 µg/kg (1 sa), sample year: unknown, country: UK⁷³⁵

Cheese (Edam cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 4/4, conc. range: 0.073–0.117 µg/kg, Ø conc.: 0.099 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Netherlands

Cheese (Feta cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 66/80, conc. range: 0.15–2.41 µg/kg, sample year: 2003/2004, country: Iran¹¹¹¹

Cheese (Gouda cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 9/9, conc. range: 0.039–0.087 µg/kg, Ø conc.: 0.063 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Netherlands
incidence: 1/1, conc.: 0.051 µg/kg, sample year: unknown, country: Japan⁶⁸³

Cheese (Grana Padano cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 219/223, conc. range: 0.005–0.100 µg/kg (203 sa), 0.101–0.250 µg/kg (15 sa), 0.37 µg/kg (1 sa), sample year: 1991–1994, country: Italy¹⁴¹

Cheese (Gravier cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 5/5, conc. range: 0.51–0.250 µg/kg (3 sa), 0.251–0.400 µg/kg (2 sa), sample year: unknown, country: Turkey¹⁷⁰

Cheese (Hard Roume cheese) may contain the following mycotoxins:

Aspergillus Toxins

ZEARALENONE

incidence: 5/20, conc. range: 4.8–13.1 µg/kg, Ø conc.: 10.4 µg/kg, sample year: unknown, country: Egypt⁴⁴³

Cheese (Haverti cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 3/3, conc. range: 0.125–0.388 µg/kg, Ø conc.: 0.290 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

Cheese (Kariesh cheese) may contain the following mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 6/25*, conc. range: 2.2–11.2 µg/kg, Ø conc.: 8.9 µg/kg, sample year: unknown, country: Egypt⁴⁴³, *skim milk soft cheese

Cheese (Kashar cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 14/25*, conc. range: 0.51–0.250 µg/kg (9 sa), 0.251–0.400 µg/kg (4 sa), >0.400 µg/kg (1 sa), sample year: unknown, country: Turkey¹⁷⁰, *old Kashar cheese

incidence: 18/25*, conc. range: 0.51–0.250 µg/kg (12 sa), 0.251–0.400 µg/kg (4 sa), >0.400 µg/kg (2 sa), sample year: unknown, country: Turkey¹⁷⁰, *fresh Kashar cheese

incidence: 85/100, conc. range: 0.051–0.150 µg/kg (42 sa), 0.151–0.250 µg/kg (9 sa), 0.251–0.450 µg/kg (13 sa), 0.451–0.650 µg/kg (8 sa), 0.651–0.800 µg/kg (9 sa), >0.800 µg/kg (4 sa), sample year: 2001/2002, country: Turkey²⁹⁸

incidence: 12/200, conc. range: 0.120–0.800 µg/kg, Ø conc.: 0.272 µg/kg, sample year: 2001/2002, country: Turkey³¹⁹

incidence: 4/30*, conc. range: 0.05110–0.0745 µg/kg, Ø conc.: 0.06240 µg/kg, sample year: 2003, country: Turkey⁴²⁹, *Kars Kashar cheese

incidence: 47/53, conc. range: <0.001 µg/kg (8 sa), 0.011–0.050 µg/kg (2 sa), 0.051–0.100 µg/kg (7 sa), 0.101–0.250 µg/kg (23 sa), >0.250 µg/kg (7 sa), sample year: 2002/2003, country: Turkey⁹²¹

incidence: 10/20, conc. range: 0.025–0.050 µg/kg (1 sa), 0.051–0.100 µg/kg (4 sa), 0.101–0.150 µg/kg (3 sa), 0.151–0.250 µg/kg (1 sa), 0.388 µg/kg (1 sa),

Ø conc.: 0.119 µg/kg, sample year: unknown, country: Turkey¹¹⁰¹

incidence: 6/8, conc. range: 0.018–0.1243 µg/kg, Ø conc.: 0.0584 µg/kg, sample year: unknown, country: Turkey¹¹⁰³

incidence: 6/14*, conc. range: 0.007–0.068 µg/kg, Ø conc.: 0.0228 µg/kg, sample year: unknown, country: Turkey¹¹³⁵,

*Kaşar cheese

incidence: 109/132, conc. range: 0.050–0.100 µg/kg (26 sa), 0.101–0.250 µg/kg (47 sa), 0.251–0.500 µg/kg (26 sa), >0.500 µg/kg (10 sa, maximum: 0.690 µg/kg), sample year: 2007/2008, country: Turkey¹⁴⁵¹

incidence: 8/20, conc. range: 0.012–0.3695 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey

Cheese (Lancashire cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 11/11, conc. range: 0.02–0.05 µg/kg (1 sa), 0.06–0.1 µg/kg (5 sa), 0.11–0.2 µg/kg (4 sa), 0.21 µg/kg (1 sa), sample year: unknown, country: UK⁷³⁵

Cheese (Leicester cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 13/13, conc. range: 0.02–0.05 µg/kg (6 sa), 0.06–0.1 µg/kg (7 sa, maximum: 0.09 µg/kg), sample year: unknown, country: UK⁷³⁵

Cheese (Lor cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 2/6, conc. range: 0.013–0.019 µg/kg, Ø conc.: 0.01595 µg/kg, sample year: unknown, country: Turkey¹¹³⁵

Cheese (Maribo cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 3/3, conc. range: 0.087–0.412 µg/kg, Ø conc.: 0.264 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

Cheese (Minas cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 4/7*, conc. range: 0.03–0.18 µg/kg, Ø conc.: 0.08 µg/kg, sample year: 1996–1998, country: Brazil²⁷¹, *fresh Minas cheese

incidence: 11/18*, conc. range: 0.02–1.7 µg/kg, Ø conc.: 0.36 µg/kg, sample year: 1996–1998, country: Brazil²⁷¹, *Canastra

incidence: 41/50*, conc. range: 0.02–6.92 µg/kg, Ø conc.: 0.62 µg/kg, sample year: 1996–1998, country: Brazil²⁷¹, *standard Minas cheese

Cheese (Mozzarella cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 4/4, conc. range: 0.181–0.433 µg/kg, Ø conc.: 0.334 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

incidence: 5/5, conc. range: 0.028–0.252 µg/kg, Ø conc.: 0.091 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Germany

Cheese (Münster cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 1/1, conc.: 0.448 µg/kg, sample year: unknown, country: Japan⁶⁸³

Cheese (Parmesan cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 18/200, conc. range: 0.035–0.190 µg/kg, sample year: 1991, country: Italy¹⁵

Cheese (Ras cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/10, conc.: 10 µg/kg, sample year: 1999/2000, country: Egypt²²¹

AFLATOXIN G₁

incidence: 1/10, conc.: 4 µg/kg, sample year: 1999/2000, country: Egypt²²¹

AFLATOXIN M₁

incidence: 2/10, conc. range: 3–6 µg/kg, Ø conc.: 4.6 µg/kg, sample year: 1999/2000, country: Egypt²²¹

STERIGMATOCYSTIN

incidence: 35/100*, conc. range: 14.9–32.8 µg/kg, Ø conc.: 23.5 µg/kg, sample year: unknown, country: Egypt⁷⁵³, *outer surface layer (1 cm thick)

Cheese (Samsøe cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 5/5, conc. range: 0.070–0.504 µg/kg, Ø conc.: 0.214 µg/kg, sample year: unknown, country: Japan⁷¹, sa from Denmark

Cheese (Surk cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 72?/120, conc. range: 0.010–0.050 µg/kg (1 sa), 0.051–0.150 µg/kg (38 sa), 0.151–0.250 µg/kg (18 sa), 0.251–

0.800 µg/kg (13 sa), 0.801–1.043 µg/kg (3 sa), Ø conc.: 0.2213 µg/kg, sample year: 2006, country: Turkey⁹²²

Cheese (Tulum cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 81/100, conc. range: 0.051–0.150 µg/kg (41 sa), 0.151–0.250 µg/kg (16 sa), 0.251–0.450 µg/kg (18 sa), 0.451–0.650 µg/kg (5 sa), >0.800 µg/kg (1 sa), sample year: 2001/2002, country: Turkey²⁹⁸

incidence: 6/8, conc. range: 0.012–0.3314 µg/kg, Ø conc.: 0.1496 µg/kg, sample year: unknown, country: Turkey¹⁰³

incidence: 7/11, conc. range: 0.011–0.202 µg/kg, Ø conc.: 0.07405 µg/kg, sample year: unknown, country: Turkey¹³⁵

incidence: 16/20, conc. range: 0.013–0.378 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey

Cheese (Van Otlu cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 52/60, conc. range: 0.151–0.250 µg/kg (4 sa), 0.251–0.450 µg/kg (3 sa), 0.451–0.650 µg/kg (7 sa), 0.651–0.800 µg/kg (4 sa), >0.800 µg/kg (34 sa), maximum: 7.26 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁵²

Cheese (Wensleydale cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 11/11, conc. range: 0.02–0.05 µg/kg (2 sa), 0.06–0.1 µg/kg (5 sa), 0.11–0.2 µg/kg (3 sa), 0.22 µg/kg (1sa), sample year: unknown, country: UK⁷³⁵

Cheese (White cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 17/25, conc. range: 0.51–0.250 µg/kg (10 sa), 0.251–0.400 µg/kg (7 sa), sample year: unknown, country: Turkey¹⁷⁰

incidence: 82/100, conc. range: 0.051–0.150 µg/kg (44 sa), 0.151–0.250 µg/kg (11 sa), 0.251–0.450 µg/kg (18 sa), 0.451–0.650 µg/kg (7 sa), 0.651–0.800 µg/kg (2 sa), sample year: 2001/2002, country: Turkey²⁹⁸

incidence: 121/186, conc. range: 0.011–0.050 µg/kg (2 sa), 0.051–0.100 µg/kg (12 sa), 0.101–0.250 µg/kg (72 sa), >0.250 µg/kg (35 sa, maximum: 4.89 µg/kg), sample year: 2001, country: Turkey¹²

incidence: 10/200, conc. range: 0.100–0.600 µg/kg, Ø conc.: 0.253 µg/kg, sample year: 2001/2002, country: Turkey³¹⁹

incidence: 86/94, conc. range: <0.001 µg/kg (3 sa), 0.001–0.010 µg/kg (5 sa), 0.011–0.050 µg/kg (9 sa), 0.051–0.100 µg/kg (21 sa), 0.101–0.250 µg/kg (36 sa), >0.250 µg/kg (12 sa), sample year: 2002/2003, country: Turkey⁹²¹

incidence: 15/20*, conc. range: 0.11–0.52 µg/kg, Ø conc.: 0.27 µg/kg, sample year: 2002, country: UK¹⁰⁶⁹, sa from Libya, *fresh white soft cheese

incidence: 93/116, conc. range: 0.050–0.150 µg/kg (32 sa), 0.151–0.250 µg/kg (28 sa), 0.251–0.450 µg/kg (21 sa), 0.451–0.650 µg/kg (8 sa), 0.651–0.7445 µg/kg (4 sa), Ø conc.: 0.2477 µg/kg, sample year: 2007/2008, country: Iran¹⁰⁸²

incidence: 16/20, conc. range: 0.051–0.100 µg/kg (4 sa), 0.101–0.150 µg/kg (7 sa), 0.151–0.250 µg/kg (4 sa), 0.263 µg/kg (1 sa), Ø conc.: 0.142 µg/kg, sample year: unknown, country: Turkey¹¹⁰¹

incidence: 5/8, conc. range: 0.0221–0.2082 µg/kg, Ø conc.: 0.1042 µg/kg, sample year: unknown, country: Turkey¹¹⁰³

incidence: 159/193*, conc. range: 0.050–0.250 µg/kg (108 sa), 0.251–0.500 µg/kg (27 sa), 0.501–0.750 µg/kg (15 sa), >0.750 µg/kg (9 sa, maximum: 0.860 µg/kg), Ø conc.: 0.2846 µg/kg, sample year: 2006, country: Turkey¹¹¹⁰, *white brined cheese

incidence: 9/23, conc. range: 0.011–0.106 µg/kg, Ø conc.: 0.02808 µg/kg, sample year: unknown, country: Turkey¹¹³⁵

incidence: 14/20, conc. range: 0.0156–0.1546 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey

Cheese (White Pickle cheese) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 31/50, conc. range: 0.100–0.150 µg/kg (5 sa), 0.151–0.250 µg/kg (6 sa), 0.251–0.450 µg/kg (5 sa), 0.451–0.650 µg/kg (2 sa), >0.800 µg/kg (13 sa, maximum: 5.20 µg/kg), sample year: 2002/2003, country: Turkey¹⁴⁵²

Cheese crust see Cheese

Cheese curd see Curd (cheese)

Cherry see Fruits (cherry)

Cheshire cheese see Cheese (Cheshire)

Chester cheese see Cheese (Chester cheese)

Chestnut may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 10/118, conc. range: <0.4 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

AFLATOXINS (B₁, G₁)

incidence: 3/5, conc. range: 20–60 µg/kg, sample year: 1992, country: Saudi Arabia²²

Chicken may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 36/65, conc. range: ≤ 0.18 $\mu\text{g}/\text{kg}$, sample year: 1993/1994, country: Denmark⁶²⁴

Chicken liver see Liver (chicken liver)

Chickpea may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 0.876 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/Sudan¹¹³³, sa from Sudan

incidence: 1/11*, conc.: 1.7 $\mu\text{g}/\text{kg}$, sample year: 2001/2002, country: Turkey¹⁵⁷⁵, *roasted chickpea (Leblebi)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/10, conc. range: 0.1 – 5 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Sweden¹⁵⁶⁵

Fusarium Toxins

T-2 TOXIN

incidence: 2/2*, conc. range: 660 – 700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 680 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Turkey³³⁶, *bought from bazar

Chilli see Spice (cayenne pepper, chilli)

Chilli pickle see Spice (chilli pickle)

Chilli powder see Spice (cayenne pepper, chilli)

Chilli sauce see Sauce (chilli sauce)

Chillies/cayenne see Spice (cayenne pepper, chillies)

Chips (cassava chips) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 6/6, conc. range: 0.4 – 4.38 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Congo

incidence: 7?/7*, conc. range: ≤ 1.58 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Tanzania, *fresh sa

incidence: 13/13*, conc. range: 0.12 – 2.08 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Tanzania, *stored sa

incidence: 5/5*, conc. range: 0.9 – 1.44 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Tanzania, *smoked sa

incidence: 6/6*, conc. range: 0.86 – 6.98 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Tanzania, *fresh sa

incidence: 24/24*, conc. range: 0.1 – 17.11 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Tanzania, *stored sa (3–7 days)

incidence: 9/9*, conc. range: 2.3 – 33.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Tanzania, *stored sa (1–4 months)

Chips (maize chips) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/6, conc. range: $2,000$ – $3,000$ $\mu\text{g}/\text{kg}$, \emptyset conc.: $2,500$ $\mu\text{g}/\text{kg}$, sample year: 1989, country: USA⁴²⁴

FUMONISIN B₁

incidence: 3/9, conc. range: ≤ 160 $\mu\text{g}/\text{kg}$, sample year: 1995, country: Netherlands³⁸⁰

incidence: 2/2, conc.: tr–37 µg/kg, sample year: unknown, country: Canada⁴⁰⁵

incidence: 1/2, conc.: 73 µg/kg, sample year: 2003/2004, country: Canada⁶¹⁴

incidence: 7/7*, conc. range: 17–260 µg/kg, Ø conc.: 143 µg/kg, sample year: unknown, country: Sweden⁶⁸²

FUMONISIN B₂

incidence: 5/7*, conc. range: 18–71 µg/kg, Ø conc.: 38 µg/kg, sample year: unknown, country: Sweden⁶⁸²

FUMONISINS (TOTAL)

incidence: 1/11, conc.: 2,100 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹

Chips (nacho chips) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 3/3, conc. range: 42.2–194.0 µg/kg, Ø conc.: 128 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

HYDROLYZED FUMONISIN B₁

incidence: 3/3, conc. range: 15.5–115.2 µg/kg, Ø conc.: 63.7 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

N-(CARBOXYMETHYL) FUMONISIN B₁

incidence: 3/3, conc. range: 9.6–26.5 µg/kg, Ø conc.: 18.1 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

Chips (tortilla chips) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 1/2, conc.: 60 µg/kg, sample year: 1992/1993, country: Italy³⁶²

incidence: 2/2, conc. range: 310–320 µg/kg, Ø conc.: 315 µg/kg, sample year: 1989/1990, country: USA³⁶⁹ (2 sa co-contaminated with FB₁ and HFB₁)

incidence: 8/12, conc. range: tr–216 µg/kg, sample year: unknown, country: Canada⁴⁰⁵

incidence: 1/1, conc.: 30 µg/kg, sample year: 1990, country: USA⁴¹⁰

incidence: 6/13, conc. range: 48–134 µg/kg, Ø conc.: 79.3 µg/kg, sample year: 2003/2004, country: Canada⁶¹⁴

incidence: 7/13* **, conc. range: 32–769 µg/kg, Ø conc.: 202.9 µg/kg, sample year: unknown, country: Italy¹¹⁶⁶, sa from Mexico and USA, *corn tortilla chips, **included white and yellow corn phenotypes

incidence: 3/3, conc. range: 21.9–124.1 µg/kg, Ø conc.: 87.9 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

HYDROLYZED FUMONISIN B₁

incidence: 2/2, conc. range: pr, sample year: 1989/1990, country: USA³⁶⁹ (2 sa co-contaminated with FB₁ and HFB₁)

incidence: 3/13, conc. range: 13–47 µg/kg, Ø conc.: 28.6 µg/kg, sample year: 2003/2004, country: Canada⁶¹⁴

incidence: 3/3, conc. range: 5.4–246.5 µg/kg, Ø conc.: 139.2 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

N-(CARBOXYMETHYL) FUMONISIN B₁

incidence: 2/3, conc. range: 16.6–21.3 µg/kg, Ø conc.: 19 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

FUMONISIN B₂

incidence: 1/2, conc.: 10 µg/kg, sample year: 1992/1993, country: Italy³⁶²

incidence: 6/13* **, conc. range: 26–191 µg/kg, Ø conc.: 82.8 µg/kg, sample year: unknown, country: Italy¹¹⁶⁶, sa from Mexico and USA, *corn tortilla chips, **included white and yellow corn phenotypes

FUMONISINS

incidence: 14/14*, conc. range: 200–1,450 µg/kg, sample year: unknown, country: USA³⁵⁷, *white tortilla chips

incidence: 1/1*, conc.: 400 µg/kg, sample year: unknown, country: USA³⁵⁷, *yellow tortilla chips

incidence: 2/2*, conc. range: 400–1,000 µg/kg, Ø conc.: 700 µg/kg, sample year: unknown, country: USA³⁵⁷, *blue tortilla chips

incidence: 2/2*, conc. range: 300–400 µg/kg, Ø conc.: 350 µg/kg, sample year: unknown, country: USA³⁵⁷, *organic blue tortilla chips

Chips (yam chips) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 17/76, conc. range: 8.5–80.4 µg/kg, Ø conc.: 27.1 µg/kg, sample year: unknown, country: Nigeria⁸⁷⁴

incidence: 52/96*, conc. range: 4–186 µg/kg, Ø conc.: 23 µg/kg, sample year: 2001, country: Nigeria¹⁶³³, *dried yam chips

AFLATOXIN B₂

incidence: 31/96*, conc. range: 2–55 µg/kg, Ø conc.: 11 µg/kg, sample year: 2001, country: Nigeria¹⁶³³, *dried yam chips

AFLATOXIN G₁

incidence: 5/96*, conc. range: 4–18 µg/kg, Ø conc.: 6 µg/kg, sample year: 2001, country: Nigeria¹⁶³³, *dried yam chips

AFLATOXIN G₂

incidence: 2/96*, conc. range: 5–11 µg/kg, Ø conc.: 8 µg/kg, sample year: 2001, country: Nigeria¹⁶³³, *dried yam chips

AFLATOXIN

incidence: 86/107*, conc. range: ≤200 µg/kg, sample year: 2000/2001, country: France/Benin¹²⁶⁸, sa from Benin

AFLATOXINS

incidence: 50/50*, conc. range: 2.2–200 µg/kg, Ø conc.: 14 µg/kg, sample year: 2000, country: Benin/france⁹²⁹, sa from Benin, *dried yam chips

Chocolate may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1*/?, conc.: 15 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶, *cake mix

incidence: 22/42*, conc. range: 0.11–0.60 µg/kg, Ø conc.: 0.18 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵, *bitter chocolate

incidence: 24/25*, conc. range: ≤0.96 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *powdered chocolate (24 sa co-contaminated with AFB₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 25/25*, conc. range: 0.10–0.87 µg/kg, Ø conc.: 0.33 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *bitter chocolate (25 sa co-contaminated with AFB₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 25/25*, conc. range: 0.04–0.91 µg/kg, Ø conc.: 0.43 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *dark chocolate (25 sa co-contaminated with AFB₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 18/25*, conc. range: ≤0.27 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *milk chocolate (18 sa co-contaminated with AFB₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 5/25*, conc. range: ≤0.10 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *white chocolate (5 sa co-contaminated with AFB₁ and OTA)

AFLATOXIN B₂

incidence: 1*/?, conc.: 15 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶, *cake mix

incidence: 20/25*, conc. range: ≤0.60 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *powdered chocolate (20 sa co-contaminated with AFB₂ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 19/25*, conc. range: ≤0.15 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *bitter chocolate (19 sa co-contaminated with AFB₁, AFB₂, and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 22/25*, conc. range: ≤0.11 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *dark chocolate (22 sa co-contaminated with AFB₁, AFB₂, and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 15/25*, conc. range: ≤0.07 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *milk chocolate (15 sa co-contaminated with AFB₂ and OTA (only co-contamination with OTA enumerated); no further information available)

AFLATOXIN G₁

incidence: 11/25*, conc. range: ≤0.48 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *powdered chocolate (11 sa co-contaminated with AFG₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 24/25*, conc. range: ≤0.63 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *bitter chocolate (24 sa co-contaminated with AFB₁, AFG₁, and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 2/25*, conc. range:

≤0.06 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *dark chocolate (2 sa co-contaminated with AFB₁, AFG₁, and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 5/25*, conc. range: ≤0.07 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *milk chocolate (5 sa co-contaminated with AFG₁ and OTA (only co-contamination with OTA enumerated); no further information available)

AFLATOXIN G₂

incidence: 3/25*, conc. range: ≤0.10 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *powdered chocolate (3 sa co-contaminated with AFG₂ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 5/25*, conc. range: ≤0.03 µg/kg, sample year: unknown, country: Brazil¹⁵⁴⁷, *bitter chocolate (5 sa co-contaminated with AFB₁, AFG₂, and OTA (only co-contamination with OTA enumerated); no further information available)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 8/11*, conc. range: 0.1–1.59 µg/kg, Ø conc.: 0.63 µg/kg, sample year: unknown, country: Spain²⁴³, *chocolate and chocolate cream

incidence: 36/39*, conc. range: ≤0.410 µg/kg, sample year: unknown, country: Germany⁵⁹², *whole milk chocolate

incidence: 78/78*, conc. range: 0.020–0.660 µg/kg, sample year: unknown, country: Germany⁵⁹², *half bitter/bitter chocolate

incidence: 31/35*, conc. range: ≤0.160 µg/kg, sample year: unknown, country: Germany⁵⁹², *chocolate with nuts

incidence: 55/58*, conc. range: ≤ 0.340 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹², *filled chocolate

incidence: 30/40*, conc. range: 0.1 $\mu\text{g}/\text{kg}$ (12 sa), 0.2–4.0 $\mu\text{g}/\text{kg}$ (18 sa, maximum: 0.6 $\mu\text{g}/\text{kg}$), sample year: 1998, country: UK⁶³⁸, sa from UK and different countries

incidence: 86/87, conc. range: 0.025–4.289 $\mu\text{g}/\text{kg}$, sample year: 2001–2003, country: Spain⁶⁷⁸, sa from Spain and different countries

incidence: 169/169, conc. range: 0.012–0.693 $\mu\text{g}/\text{kg}$, sample year: 2001–2003, country: Spain⁶⁷⁸, sa from Spain and different countries, *milk chocolate

incidence: 14/14, conc. range: 0.016–0.190 $\mu\text{g}/\text{kg}$, sample year: 2001–2003, country: Spain⁶⁷⁸, sa from Spain and different countries, *white chocolate

incidence: 7/7*, conc. range: 0.12–1.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.63 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁹⁶, sa available in Canada, *baking chocolate

incidence: 14/14*, conc. range: 0.17–0.88 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.38 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁹⁶, sa available in Canada, *dark chocolate

incidence: 5/7*, conc. range: ≤ 0.19 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁹⁶, sa available in Canada, *milk chocolate

incidence: 84/115, conc. range: ≤ 1.75 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.31 $\mu\text{g}/\text{kg}$, sample year: 2005–2007, country: Japan⁹⁰⁰

incidence: 27/41, conc. range: 0.10–0.94 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.35 $\mu\text{g}/\text{kg}$, sample year: 2004/2005, country: Japan¹²¹⁵

incidence: 25/25*, conc. range: 0.03–0.92 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.39 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴⁷, *powdered chocolate (24 sa co-contaminated with AFB₁ and OTA, 20 sa co-contaminated with AFB₂ and OTA, 11 sa co-contaminated with AFG₁ and OTA, 3 sa co-contaminated with AFG₂ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 25/25*, conc. range: 0.06–0.60 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.31 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴⁷, *bitter chocolate (25 sa co-contaminated with AFB₁ and OTA, 19 sa co-contaminated with AFB₂ and OTA, 24 sa co-contaminated with AFG₁ and OTA, 5 sa co-contaminated with AFG₂ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 25/25*, conc. range: 0.09–0.87 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.34 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴⁷, *dark chocolate (25 sa co-contaminated with AFB₁ and OTA, 22 sa co-contaminated with AFB₂ and OTA, 2 sa co-contaminated with AFG₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 25/25*, conc. range: 0.08–0.45 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.15 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴⁷, *milk chocolate (18 sa co-contaminated with AFB₁ and OTA, 15 sa co-contaminated with AFB₂ and OTA, 5 sa co-contaminated with AFG₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 23/25*, conc. range: ≤ 0.45 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴⁷, *white chocolate (5 sa co-contaminated with AFB₁ and OTA (only co-contamination with OTA enumerated); no further information available)

incidence: 92/120*, conc. range: ≤ 0.74 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy¹⁵⁶⁴, *dark chocolate bar

incidence: 21/78*, conc. range: ≤ 0.26 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy¹⁵⁶⁴, *milk chocolate bar

incidence: 21/47*, conc. range: ≤ 0.42 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy¹⁵⁶⁴, *chocolate candies

incidence: 5/15*, conc. range: ≤ 0.50 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy¹⁵⁶⁴, *easter egg

Cider see Apple cider

Cocoa may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/30, conc.: 5 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN B₂

incidence: 1/30, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₁

incidence: 1/30, conc.: 4 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 1/30, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN

incidence: 19/27*, Ø conc.: 50.6 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *cocoa and products, **of pos sa?

AFLATOXINS (B₁, B₂)

incidence: 2/20, conc. range: 12.6–21.7 µg/kg, Ø conc.: 17.15 µg/kg, sample year: unknown, country: Egypt⁷⁰²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 37/38, conc. range: ≤3.45 µg/kg, Ø conc.: 0.89 µg/kg, sample year: 2006/2007, country: Japan⁹⁰⁰

incidence: 5/8, conc. range: 0.11–0.35 µg/kg, Ø conc.: 0.46 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

OCHRATOXIN B

incidence: 1/8, conc.: 0.10 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

Cocoa bean may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 14/200, conc. range: 1–10 µg/kg (14 sa), sample year: during the 1990s, country: Cuba⁴⁷

incidence: 4/151*, conc. range: ≤2.6 µg/kg, sample year: unknown, country: USSR¹⁹¹, sa imported, *cocoa beans and products

incidence: 1/1, conc.: 0.6 µg/kg, sample year: 1985, country: Japan³⁴⁶, sa imported

incidence: 2/51*, conc. range: ≤0.1 µg/kg, sample year: unknown, country: Brazil¹¹⁷⁰, *during fermentation

incidence: 11/85*, conc. range: ≤6.66 µg/kg, sample year: unknown, country: Brazil¹¹⁷⁰, *during sun drying

incidence: 3/65*, conc. range: ≤0.14 µg/kg, sample year: unknown, country: Brazil¹¹⁷⁰, *during storage

AFLATOXIN B₂

incidence: 1/51*, conc.: 0.04 µg/kg, sample year: unknown, country: Brazil¹¹⁷⁰, *during fermentation

incidence: 4/85*, conc. range: ≤0.37 µg/kg, sample year: unknown, country: Brazil¹¹⁷⁰, *during sun drying

AFLATOXIN G₁

incidence: 1/51*, conc.: 0.06 µg/kg, sample year: unknown, country: Brazil¹¹⁷⁰, *during fermentation

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/47, conc. range: 5.0–9.9 µg/kg, sample year: 1970–1975, country: Canada⁵⁹

incidence: 3/91*, conc. range: 2–20 µg/kg (1 sa), >20 µg/kg (2 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *cocoa beans and by-products

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 16/21, conc. range: 0.1–3.5 µg/kg, Ø conc.: 0.45 µg/kg, sample year: unknown, country: Spain²⁴³, sa from Ivory Coast, Guinea, Cameroon, Nigeria, and Senegal

incidence: 24/33, conc. range: 0.041–14.8 µg/kg, Ø conc.: 1.85 µg/kg, sample year: 2003/2004, country: Spain²⁴⁸, sa from Ivory Coast

incidence: 3/7, conc. range: 0.055–3.88 µg/kg, Ø conc.: 1.55 µg/kg, sample year: 2003/2004, country: Spain²⁴⁸, sa from Cameroon

incidence: 2/6, conc. range: 0.107–0.416 µg/kg, Ø conc.: 0.26 µg/kg, sample year: 2003/2004, country: Spain²⁴⁸, sa from Equatorial Guinea

incidence: 22/22, conc. range: 0.349–14.8 µg/kg, Ø conc.: 2.19 µg/kg, sample year: 2003/2004, country: Spain⁸⁹²

incidence: 14/51*, conc. range: ≤1.7 µg/kg**, sample year: 2006–2008, country: Brazil/Australia¹⁰⁵¹, sa from Brazil, *different times of fermentation in wooden boxes (1–6 days), **only 3 sa above 0.10 µg/kg

incidence: 41/81*, conc. range: ≤5.54 µg/kg**, sample year: 2006–2008, country: Brazil/Australia¹⁰⁵¹, sa from Brazil, *different times of sun drying on wooden floor platforms with movable roofs (1–12 days), **30 sa lower than 0.10 µg/kg

incidence: 33/65*, conc. range: ≤4.64 µg/kg**, sample year: 2006–2008, country: Brazil/Australia¹⁰⁵¹, sa from Brazil, *dried beans in storage, **only 1 sa with the high value of 4.64 µg/kg

incidence: 54/59*, conc. range: 1.0–277.5 µg/kg, Ø conc.: 37.7 µg/kg, sample

year: unknown, country: Nigeria¹⁰⁶², *ready for sale cocoa beans

Cocoa butter see Butter (cocoa butter)

Cocoa cake see Cake (cocoa cake)

Cocoa drinks see Drink (cocoa drink)

Cocoa hazelnut cream may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 38/40, conc. range: <1 µg/kg (20 sa), 1–5 µg/kg (18 sa), sample year: 2002/2003, country: Turkey⁹²¹

AFLATOXIN (TOTAL)

incidence: 39/40, conc. range: <1 µg/kg (1 sa), 1–5 µg/kg (13 sa), 5–10 µg/kg (24 sa), >10 µg/kg (1 sa), sample year: 2002/2003, country: Turkey⁹²¹

Cocoa mass may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 10/25, conc. range: ≤6.14 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

AFLATOXIN B₂

incidence: 7/25, conc. range: ≤0.35 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

AFLATOXIN G₁

incidence: 4/25, conc. range: ≤2.58 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

AFLATOXIN G₂

incidence: 1/25, conc.: 0.73 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 4/8, conc. range: 0.1–3.5 µg/kg, Ø conc.: 1.07 µg/kg, sample year: unknown, country: Spain²⁴³, sa from Ivory Coast and Cameroon

incidence: 25/25, conc. range: 0.03–1.09 µg/kg, Ø conc.: 0.34 µg/kg, sample year: unknown, country: Brazil¹⁶⁴⁴

Cocoa nib may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 13/29, conc. range: ≤11.21 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

AFLATOXIN B₂

incidence: 9/29, conc. range: ≤1.66 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

AFLATOXIN G₁

incidence: 6/29, conc. range: ≤2.48 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

AFLATOXIN G₂

incidence: 2/29, conc. range: ≤0.68 µg/kg, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 12/22, conc. range: 0.043–2.02 µg/kg, Ø conc.: 0.34 µg/kg, sample year: 2003/2004, country: Spain⁸⁹²

incidence: 24/29, conc. range: ≤0.38 µg/kg, sample year: unknown, country: Brazil¹⁶⁴⁴

Cocoa powder see Powder (cocoa powder)

Coconuts see Nut (coconuts)

Coconut oil see Oil (coconut oil)

Coconut products see Product (coconut products)

Coffee may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 2/4*, conc. range: 21–100 µg/kg (2 sa, maximum: 37 µg/kg), sample year: 1976, country: Guatemala³⁴, *sa stored for 6 months during dry season

incidence: 9/30*, conc. range: 0.36–3.01 µg/kg, Ø conc.: 1.4 µg/kg, sample year: unknown, country: Egypt¹⁴²⁴, *ground roasted coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 3 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₂)

AFLATOXIN B₂

incidence: 7/30*, conc. range: 0.52–1.52 µg/kg, Ø conc.: 0.8 µg/kg, sample year: unknown, country: Egypt¹⁴²⁴, *ground roasted coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 3 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 5/30*, conc. range: 0.80–2.91 µg/kg, Ø conc.: 1.53 µg/kg, sample year: unknown, country: Egypt¹⁴²⁴, *ground roasted coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁, 1 sa co-contaminated with AFG₁ and AFG₂)

AFLATOXIN G₂

incidence: 7/30*, conc. range: 0.13–2.68 µg/kg, Ø conc.: 1.2 µg/kg, sample year: unknown, country: Egypt¹⁴²⁴, *ground roasted coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 1 sa co-contaminated with AFB₁ and AFG₂, 1 sa co-contaminated with AFG₁ and AFG₂, 1 sa contaminated solely with AFG₂)

AFLATOXIN

incidence: 9/17*, Ø conc.: 11.2 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *instant coffee, **of pos sa?

AFLATOXINS (B₁, B₂, G₁)

incidence: 1/1*, conc.: 8 µg/kg, sample year: 1975/1976-?, country: Guatemala³³, *unroasted coffee

STERIGMATOCYSTIN

incidence: 1/2*, conc.: 1,143 µg/kg, sample year: unknown, country: South Africa⁷⁵⁶, *condemned as unfit for human consumption

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/4*, conc. range: 10–90 µg/kg, Ø conc.: 50 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *moldy

incidence: 16/16*, conc. range: 0.5–5.1 µg/kg, Ø conc.: 2.2 µg/kg, sample year: unknown, country: Brazil²¹⁶, *instant coffee

incidence: 23/34* **, conc. range: 0.3–6.5 µg/kg, Ø conc.: 1.4 µg/kg, sample year: unknown, country: Brazil²¹⁶, *2 sa decaffeinated and not contaminated, **roasted, ground coffee

incidence: 52/113*, conc. range: ≤6.32 µg/kg, Ø conc.: 1.15 µg/kg, sample year: unknown, country: Germany⁵⁸¹, sa imported, *ground roasted coffee

incidence: 32/67*, conc. range: ≤3.34 µg/kg, Ø conc.: 1.01 µg/kg, sample year: unknown, country: Germany⁵⁸¹, sa imported, *roasted, ground, decaffeinated coffee

incidence: 21/60*, conc. range: ≤4.75 µg/kg, Ø conc.: 1 µg/kg, sample year: unknown, country: Germany⁵⁸¹, sa imported, *roasted, ground, mild coffee

incidence: 46/52*, conc. range: ≤9.47 µg/kg, Ø conc.: 2.05 µg/kg, sample year: unknown, country: Germany⁵⁸¹, sa imported, *instant coffee

incidence: 19/32*, conc. range: ≤1.8 µg/kg, Ø conc.: 0.89 µg/kg, sample year: unknown, country: Germany⁵⁸¹, sa imported, *instant, decaffeinated coffee

incidence: 5/33*, conc. range: ≤0.96 µg/kg, Ø conc.: 0.65 µg/kg, sample year: unknown, country: Germany⁵⁸¹, sa imported, *malt coffee

incidence: 2/2*, conc. range: 3.8–23.0 µg/kg, Ø conc.: 13.4 µg/kg, sample year: unknown, country: Italy⁵⁸⁴, sa from Ivory Coast and Uganda, *roasted coffee

incidence: 22/38*, conc. range: 0.17–0.91 µg/kg, Ø conc.: 0.5 µg/kg, sample year: 2001, country: Hungary⁵⁹³, sa imported, *roasted coffee

incidence: 11/12*, conc. range: 0.34–1.3 µg/kg, Ø conc.: 0.72 µg/kg, sample year: 2001, country: Hungary⁵⁹³, sa imported, *real coffee blended with Ersatz coffee (Ersatz coffee = roasted barley)

incidence: 5/16*, conc. range: 0.1–0.3 µg/kg (2 sa), 0.3–0.5 µg/kg (3 sa), sample year: 2003, country: Taiwan⁶⁰⁷, *instant coffee

incidence: 8/19*, conc. range: 0.1–0.3 µg/kg (5 sa), 0.3–0.5 µg/kg (3 sa), sample year: 2003, country: Taiwan⁶⁰⁷, *ready-to-drink coffee

incidence: 11/11*, conc. range: ≤3.2 µg/kg, sample year: 1995, country: Denmark⁶²⁴, *roasted coffee

incidence: 25/30*, conc. range: ≤0.3 µg/kg (5 sa), 0.3–1.0 µg/kg (11 sa), 1.0–5.0 µg/kg (6 sa), 5.0–8.0 µg/kg (3 sa, maximum: 7.54 µg/kg), sample year: unknown, country: Germany⁶²⁷, *roasted coffee

incidence: 38/59*, conc. range: <0.1–2.3 µg/kg, Ø conc.: 0.63 µg/kg, sample year: unknown, country: Canada⁶³², sa imported, *roasted, non-decaffeinated ground coffee

incidence: 4/12*, conc. range: <0.1–1.3 µg/kg, Ø conc.: 0.55 µg/kg, sample year: unknown, country: Canada⁶³², sa imported, *roasted, ground, decaffeinated coffee

incidence: 15/21*, conc. range: <0.1–3.1 µg/kg, Ø conc.: 1.11 µg/kg, sample year: unknown, country: Canada⁶³², sa imported, *instant, non-decaffeinated coffee

incidence: 5/9*, conc. range: <0.1–2.5 µg/kg, Ø conc.: 0.9 µg/kg, sample year: unknown, country: Canada⁶³², sa imported, *instant, decaffeinated coffee

incidence: 191/419*, conc. range: 0.21–12.1 µg/kg, sample year: 1995–1999, country: Germany⁶⁵⁰, *roasted coffee

incidence: 26/71* **, conc. range: 0.15–2.7 µg/kg, sample year: 1995–1999, country: Germany⁶⁵⁰, *decaffeinated roasted coffee and low acid decaffeinated roasted coffee

incidence: 29/41*, conc. range: 0.28–4.8 µg/kg, sample year: 1995–1999, country: Germany⁶⁵⁰, *instant coffee

incidence: 11/12* **, conc. range: 0.2–8.0 µg/kg, sample year: 1995, country: UK⁶⁵¹, *powder, **decaffeinated and non-decaffeinated coffee

incidence: 31/36* **, conc. range: 0.1–4.9 µg/kg, sample year: 1995, country: UK⁶⁵¹, *granules, **decaffeinated and non-decaffeinated coffee

incidence: 22/32* **, conc. range: 0.2–3.0 µg/kg, sample year: 1995, country: UK⁶⁵¹, *freeze-dried, **decaffeinated and non-decaffeinated coffee

incidence: 17/20*, conc. range: 0.2–2.1 µg/kg, sample year: 1995, country: UK⁶⁵¹, *roast and ground, non-decaffeinated coffee

incidence: 75/101*, conc. range: 0.2–6.5 µg/kg, sample year: unknown, country: Switzerland⁶⁵⁴, sa from different countries, *pure soluble coffee

incidence: 15/15*, conc. range: 1.2–15.9 µg/kg, Ø conc.: 5.9 µg/kg, sample year: unknown, country: Switzerland⁶⁵⁴, sa from different countries, *adulterated soluble coffee

incidence: 334/633*, conc. range: ≤27.2 µg/kg, sample year: 1995, country: Germany⁶⁶⁶, sa from different countries, *partly roasted and ground, partly decaffeinated, partly instant, partly mixed coffee

incidence: 9/13*, conc. range: 0.1–1.2 µg/kg, Ø conc.: 0.41 µg/kg, sample year: unknown, country: USA⁶⁸⁵, sa from South America, *roasted coffee

incidence: 5/68, conc. range: 3.2–17.0 µg/kg*, Ø conc.: 7.6 µg/kg*, sample year: 1987, country: Japan⁶⁸⁶, sa from different countries, *contaminated sa from Indonesia and Yemen

incidence: 1/3*, conc.: 0.20 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *instant coffee

incidence: 81/82*, conc. range: 0.16–0.50 µg/kg (13 sa), 0.51–1.00 µg/kg (20 sa), 1.01–1.50 µg/kg (22 sa), 1.51–2.00 µg/kg (18 sa), 2.01–2.50 µg/kg (3 sa), 2.51–5.00 µg/kg (3 sa), 6.29 µg/kg (1 sa), sample year: 2004, country: Brazil⁸⁸⁸, sa from supermarkets, *instant coffee

incidence: 18/49*, conc. range: ≤2.75 µg/kg, Ø conc.: 0.55 µg/kg, sample year: 2004–2007, country: Japan⁹⁰⁰, *roasted coffee beans

incidence: 63/66*, conc. range: ≤4.23 µg/kg, Ø conc.: 0.72 µg/kg, sample year: 2005–2007, country: Japan⁹⁰⁰, *instant coffee

incidence: 2/10*, conc. range: 0.51–0.81 µg/kg, Ø conc.: 0.66 µg/kg, sample year: unknown, country: Japan¹⁰²⁵, *raw coffee

incidence: 3/23*, conc. range: 0.25–0.43 µg/kg, sample year: unknown, country: Japan¹⁰²⁵, *roasted coffee

incidence: 5/7*, conc. range: 0.16–1.1 µg/kg, sample year: unknown, country: Japan¹⁰²⁵, *instant coffee

incidence: 64/80*, conc. range: LOD/LOQ–4.9 µg/kg (61 sa), 5.5–9.9 µg/kg (3 sa, maximum: 8.0 µg/kg), sample year: 1995, country: EU¹⁰³⁴, sa from UK, *soluble coffee

incidence: 17/20*, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 2.1 µg/kg), sample year: 1995, country: EU¹⁰³⁴, sa from UK, *roasted and ground coffee

incidence: 3/9*, conc. range: 0.11–0.33 µg/kg, Ø conc.: 0.22 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵, *roast coffee

incidence: 11/24*, conc. range: 0.3–9.4 µg/kg, Ø conc.: 1.75 µg/kg, sample year: unknown, country: France¹²⁸⁷, *commercially available roasted, ground coffee

incidence: 28/28*, conc. range: 0.22–5.64 µg/kg, Ø conc.: 0.88 µg/kg, sample year: 1997, country: Spain¹³⁴³, *roasted coffee

incidence: 9/9*, conc. range: 0.19–1.08 µg/kg, Ø conc.: 0.50 µg/kg, sample year: 1997, country: Spain¹³⁴³, *soluble coffee

incidence: 2/2, conc. range: 15.2*–53.6** µg/kg, sample year: unknown, country: Taiwan/Russia¹⁵⁰², sa from Taiwan, *instant and **roasted coffee

incidence: 2/3, conc. range: 0.96*–3.36** µg/kg, sample year: unknown, country: Taiwan/Russia¹⁵⁰², sa from Taiwan, *unroasted and **instant coffee

incidence: 29/30*, conc. range: ≤15.08** µg/kg, sample year: unknown, country: France¹⁵²⁸, *ground coffee, **evaluated with CEN 15141–1 Entwisle

incidence: 13/17*, conc. range: 0.1–1.0 µg/kg (10 sa), 1.1–2.0 µg/kg (1 sa), 2.1–3.0 µg/kg (2 sa), sample year: unknown, country: India¹⁵³³, *soluble coffee

incidence: 43/45*, conc. range: 1.30–5.24 µg/kg, Ø conc.: 2.07 µg/kg, sample year: 2008, country: Spain¹⁵⁴⁸, *ground coffee of different brands; for detailed information please see the article

incidence: 35/72*, conc. range: 1.21–4.21 µg/kg, Ø conc.: 2.17 µg/kg, sample year: 2008, country: Spain¹⁵⁴⁸, *ground coffee of Catalonia; for detailed information please see the article

incidence: 9/36*, conc. range: <1.0 µg/kg (2 sa), 1.0–2.0 µg/kg (2 sa), >2.0 µg/kg (5 sa, maximum: 12.4 µg/kg), sample year: unknown, country: India¹⁵⁴⁹, *roast, ground, and instant coffee

incidence: 1/10*, conc.: 0.5 µg/kg, sample year: unknown, country: China¹⁵⁵⁴, *soluble coffee

incidence: 12/12*, conc. range: 0.03–0.6 µg/kg, Ø conc.: 0.27 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴, *coffee (roasted)

OCHRATOXIN B

incidence: 1/10*, conc.: 0.10 µg/kg, sample year: unknown, country: Japan¹⁰²⁵, *raw coffee

Coffee bean may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 6/57*, conc. range: ≤3.5 µg/kg, sample year: unknown, country: USSR¹⁹¹, *green coffee

incidence: 5/10*, conc. range: 0.0024–0.0202 µg/kg, Ø conc.: 0.0076 µg/kg, sample year: 1988–1993, country: Japan²⁴⁷, sa from Yemen, *commercial green coffee beans (Arabica)

incidence: 3/9*, conc. range: 0.002–0.004 µg/kg, Ø conc.: 0.0027 µg/kg, sample year: 1988–1993, country: Japan²⁴⁷, sa from Tanzania, *commercial green coffee beans (Arabica)

incidence: 7/9*, conc. range: 0.0025–0.0329 µg/kg, Ø conc.: 0.0010 µg/kg,

sample year: 1988–1993, country: Japan²⁴⁷, sa from Indonesia, *commercial green coffee beans (Robusta)

incidence: 13/30*, conc. range: 0.57–6.00 µg/kg, Ø conc.: 2.75 µg/kg, sample year: unknown, country: Egypt¹⁴²⁴, *green coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 6 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFB₁)

AFLATOXIN B₂

incidence: 11/30*, conc. range: 0.13–1.56 µg/kg, Ø conc.: 0.72 µg/kg, sample year: unknown, country: Egypt¹⁴²⁴, *green coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 6 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 9/30*, conc. range: 0.19–2.72 µg/kg, Ø conc.: 1.23 µg/kg, country: Egypt¹⁴²⁴ sample year: unknown, country: Egypt¹⁴²⁴, *green coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 6 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁)

AFLATOXIN G₂

incidence: 3/30*, conc. range: 0.13–0.39 µg/kg, Ø conc.: 0.26 µg/kg, sample year: unknown, country: Egypt¹⁴²⁴, *green coffee beans (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

AFLATOXIN

incidence: 29/30*, conc. range: 0.7–72.0 µg/kg, Ø conc.: 8.44 µg/kg, sample year: unknown, country: Germany⁵⁵, sa from different countries and unknown origin, *green coffee

STERIGMATOCYSTIN

incidence: 1*/502**, conc.: 12,000 µg/kg, sample year: unknown, country: Italy¹³¹⁵, sa from unknown origin, *no longer marketable, **green coffee

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 27/132*, conc. range: 0.7–47.8 µg/kg, Ø conc.: 7.1 µg/kg, sample year: unknown, country: Brazil²¹², *green coffee

incidence: 7/10*, conc. range: 0.0007–0.0174 µg/kg, Ø conc.: 0.004 µg/kg, sample year: 1988–1993, country: Japan²⁴⁷, sa from Yemen, *commercial green coffee beans (Arabica)

incidence: 5/9*, conc. range: 0.0001–0.007 µg/kg, Ø conc.: 0.0016 µg/kg, sample year: 1988–1993, country: Japan²⁴⁷, sa from Tanzania, *commercial green coffee beans (Arabica)

incidence: 2/9*, conc. range: 0.0002–0.001 µg/kg, Ø conc.: 0.0006 µg/kg, sample year: 1988–1993, country: Japan²⁴⁷, sa from Indonesia, *commercial green coffee beans (Robusta)

incidence: 13/25*, conc. range: 0.9–56 µg/kg, Ø conc.: 10.3 µg/kg, sample year: unknown, country: Switzerland³¹⁸, sa from different countries and of unknown origin, *green beans

incidence: 15/68*, conc. range: 0.84–4.7 µg/kg, Ø conc.: 2.85 µg/kg, sample year: 2003, country: Brazil/Japan⁵⁵⁵, sa from Brazil, *freshly harvested coffee

incidence: 9/40*, conc. range: 0.5–23.0 µg/kg, Ø conc.: 4.3 µg/kg, sample year: unknown, country: Italy⁵⁸⁴, sa from different countries, *green coffee beans

incidence: 2/13*, conc. range: 58–168 µg/kg, Ø conc.: 113 µg/kg, sample year: unknown, country: Belgium⁶⁰⁰, sa from different countries, *coffee Arabica (green)

incidence: 3/8*, conc. range: 4–27 µg/kg, Ø conc.: 15.7 µg/kg, sample year: unknown, country: Belgium⁶⁰⁰, sa from

different countries, *coffee Robusta (green)

incidence: 41/41*, conc. range: <5 µg/kg (22 sa), 5–10 µg/kg (10 sa), 10–20 µg/kg (6 sa), 31.5 µg/kg (3 sa), sample year: unknown, country: Spain⁶⁰⁶, sa from different countries, *coffee Arabica (green)

incidence: 16/16*, conc. range: <5 µg/kg (8 sa), 5–10 µg/kg (7 sa), 23.3 µg/kg (1 sa), sample year: unknown, country: Spain⁶⁰⁶, sa from different countries, *coffee Robusta (green)

incidence: 19/267*, conc. range: tr–360 µg/kg, sample year: unknown, country: USA⁶³¹, sa from different countries, *hand-cleaned green coffee beans

incidence: 3/68*, conc. range: tr–80** µg/kg, sample year: unknown, country: USA⁶³¹, sa from different countries, *commercial green coffee beans, **a 2nd subsample from the same batch did not show any OTA

incidence: 13/22*, conc. range: tr–5.5 µg/kg, sample year: unknown, country: Italy⁶⁴⁵, sa from Brazil, Colombia, Costa Rica, Mexico, and Kenya, *coffee Arabica (green)

incidence: 6/7*, conc. range: tr–15.0 µg/kg, sample year: unknown, country: Italy⁶⁴⁵, sa from Cameroon, Ivory Coast, Zaire, *coffee Robusta (green)

incidence: 22/82*, conc. range: 0.23–24.5 µg/kg, sample year: 1995–1999, country: Germany⁶⁵⁰, *green coffee

incidence: 106/162*, conc. range: 0.1–48 µg/kg, Ø conc.: 1.6 µg/kg, sample year: unknown, country: Italy⁶⁵⁷, sa from Africa, America, and Asia, *green coffee beans

incidence: 9/19, conc. range: 0.1–4.6 µg/kg, Ø conc.: 1.41 µg/kg, sample year: unknown, country: USA⁶⁸⁵, sa from South America, green coffee

incidence: 3/20*, conc. range: 13.7–124 µg/kg, sample year: unknown, country: Egypt⁷²¹, *green coffee?

incidence: 31/153*, conc. range: 0.26–1.0 µg/kg (19 sa), 1.0–5.0 µg/kg (8 sa), 5.0–10.0 µg/kg (4 sa, maximum 9.0 µg/kg), sample year: unknown, country: UK⁷³⁸, sa from different countries, *coffee Arabica (green)

incidence: 55/75*, conc. range: 0.26–1.0 µg/kg (34 sa), 1.0–5.0 µg/kg (15 sa), 5.0–10.0 µg/kg (3 sa), >10.0 µg/kg (3 sa, maximum 27.3 µg/kg), sample year: unknown, country: UK⁷³⁸, sa from different countries, *coffee Robusta (green)

incidence: 24/63*, conc. range: 0.26–1.0 µg/kg (14 sa), 1.0–5.0 µg/kg (7 sa), 5.0–10.0 µg/kg (3 sa), sample year: unknown, country: UK⁷³⁸, sa from different countries, *green coffee beans

incidence: 46/200*, conc. range: 22.8–66.0 µg/kg, Ø conc.: 33.8 µg/kg, sample year: 1993/1994, country: Egypt⁷⁴⁸, *green coffee beans

incidence: 5/21*, conc. range: ≤0.76 µg/kg, Ø conc.: 0.40 µg/kg, sample year: 2004/2005, country: Japan⁹⁰⁰, *green coffee beans

incidence: 7/11*, conc. range: 2.19–6.57 µg/kg, Ø conc.: 4.09 µg/kg, sample year: 2008/2009, country: Jordan⁹⁰⁸, *green coffee

incidence: 1/1*, conc.: 8 µg/kg, sample year: 1994, country: EU¹⁰³⁴, sa from Austria, *raw green coffee

incidence: 2/2*, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 2.2 µg/kg), sample year: 1995, country: EU¹⁰³⁴, sa from Ireland, *raw green coffee

incidence: 2/14*, conc. range: 5.0–9.9 µg/kg (2 sa, maximum: 7 µg/kg), sample year: 1995, country: EU¹⁰³⁴, sa from Netherlands, *green coffee beans

incidence: 75/75*, conc. range: tr (6 sa), <1 µg/kg (47 sa), 1–9.9 µg/kg (22 sa, maximum: 7.48 µg/kg), sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *sound beans not roasted

incidence: 62/62*, conc. range: tr (8 sa),

<1 µg/kg (19 sa), 1–9.9 µg/kg (21 sa), 10–99.9 µg/kg (11 sa), ≥100 µg/kg (3 sa), maximum: 152.6 µg/kg, sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *diseased beans not roasted

incidence: 32/32*, conc. range: tr (1 sa), <1 µg/kg (11 sa), 1–9.9 µg/kg (16 sa), 10–99.9 µg/kg (2 sa), ≥100 µg/kg (3 sa), maximum: 130 µg/kg, sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *black beans not roasted

incidence: 16/16*, conc. range: tr (3 sa), <1 µg/kg (4 sa), 1–9.9 µg/kg (4 sa), 10–99.9 µg/kg (4 sa), 499.3 µg/kg (1 sa), sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *insect damaged beans not roasted

incidence: 16/16*, conc. range: tr (2 sa), <1 µg/kg (2 sa), 1–9.9 µg/kg (4 sa), 10–99.9 µg/kg (3 sa), ≥100 µg/kg (4 sa), maximum: 727 µg/kg, sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *foxy beans not roasted

incidence: 10/10*, conc. range: <1 µg/kg (1 sa), 1–9.9 µg/kg (8 sa), 32.1 µg/kg (1 sa), sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *stinkers not roasted

incidence: 14/14*, conc. range: tr (1 sa), <1 µg/kg (10 sa), 1–9.9 µg/kg (2 sa), 29.6 µg/kg (1 sa), sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *hulled ears not roasted

incidence: 4/4*, conc. range: 1–9.9 µg/kg (3 sa), 2.5 µg/kg? (1 sa), sample year: unknown, country: France/Kenya/Italy¹⁰⁷⁸, sa from Kenya, *unroasted

incidence: 20/60*, conc. range: 0.2–1.0 µg/kg (10 sa), 1.1–5.0 µg/kg (6 sa), 5.3–7.3 µg/kg (4 sa), sample year: 2000, country: Portugal/USA¹²⁵⁹, sa from Brazil, *coffee Arabica (green)

incidence: 22/54*, conc. range: 0.3–160 µg/kg, sample year: 1999, country: Brazil¹³³⁵, *green coffee

incidence: 14/20*, conc. range: <1.0 µg/kg (6 sa), 1.0–5.0 µg/kg (5 sa), >10 µg/kg (3 sa), sample year: unknown, country: India¹⁴⁹², *robusta cherry (green coffee beans)

incidence: 8/21*, conc. range: <1.0 µg/kg (6 sa), 1.0–5.0 µg/kg (2 sa), sample year: unknown, country: India¹⁴⁹², *robusta parchment (green coffee beans)

incidence: 5/7*, conc. range: <1.0 µg/kg (1 sa), 1.0–5.0 µg/kg (3 sa), >10 µg/kg (1 sa), sample year: unknown, country: India¹⁴⁹², *arabica cherry (green coffee beans)

incidence: 35/74*, conc. range: <1.0 µg/kg (21 sa), 1.0–5.0 µg/kg (11 sa), 5–10 µg/kg (1 sa), >10 µg/kg (2 sa), sample year: unknown, country: India¹⁴⁹², *arabica parchment (green coffee beans)

incidence: 16/16*, conc. range: <1.0 µg/kg (7 sa), 1.0–5.0 µg/kg (8 sa), >10 µg/kg (1 sa), sample year: unknown, country: India¹⁴⁹², *whole cherry (green coffee beans)

incidence: 17/20*, conc. range: <1.0 µg/kg (6 sa), 1.0–5.0 µg/kg (8 sa), 5–10 µg/kg (1 sa), >10 µg/kg (2 sa), sample year: unknown, country: India¹⁴⁹², *monsooned coffee (green coffee beans)

incidence: 6/7*, conc. range: 0.1–0.8 µg/kg, sample year: unknown, country: India¹⁴⁹², *low grade/defective green coffee beans (blacks)

incidence: 11/13*, conc. range: 0.2–19.0 µg/kg, sample year: unknown, country: India¹⁴⁹², *low grade/defective green coffee beans (rejected beans; stored for >1 year with moisture level >13 % and rain affected sa)

incidence: 13/14*, conc. range: 0.4–103.0 µg/kg, sample year: unknown,

country: India¹⁴⁹², *low grade/defective green coffee beans (gleanings = windfall cherries)

incidence: 36/45*, conc. range: 0.1–1.0 µg/kg (34 sa), 1.1–2.0 µg/kg (1 sa), 2.1–3.0 µg/kg (1 sa), sample year: unknown, country: India¹⁵³³, *regular green coffee: “arabica” parchment

incidence: 17/18*, conc. range: 0.1–1.0 µg/kg (11 sa), 1.1–2.0 µg/kg (1 sa), 2.1–3.0 µg/kg (3 sa), 4.1–5.0 µg/kg (1 sa), 9.8 µg/kg (1 sa), sample year: unknown, country: India¹⁵³³, *regular green coffee: “arabica” cherry

incidence: 22/30*, conc. range: 0.1–1.0 µg/kg (20 sa), 1.1–2.0 µg/kg (2 sa), sample year: unknown, country: India¹⁵³³, *regular green coffee: “robusta” parchment

incidence: 7/7*, conc. range: 0.1–1.0 µg/kg (2 sa), 1.1–2.0 µg/kg (1 sa), 2.1–3.0 µg/kg (1 sa), 3.1–4.0 µg/kg (1 sa), 5.1–15 µg/kg (2 sa, maximum: 11.7 µg/kg), sample year: unknown, country: India¹⁵³³, *regular green coffee: “robusta” cherry

incidence: 23/25*, conc. range: 0.1–1.0 µg/kg (19 sa), 1.1–2.0 µg/kg (3 sa), 4.1–5.0 µg/kg (1 sa), sample year: unknown, country: India¹⁵³³, *speciality coffee: monsooned coffee

incidence: 4/4*, conc. range: 0.1–1.0 µg/kg sample year: unknown, country: India¹⁵³³, *speciality coffee: organic coffee

incidence: 10/21*, conc. range: 0.2–1.4 µg/kg, Ø conc.: 0.816 µg/kg, sample year: 2006/2007, country: India¹⁵³⁷, *“arabica” parchment destined for export

incidence: 15/18*, conc. range: 0.5–4.3 µg/kg, Ø conc.: 1.97 µg/kg, sample year: 2006/2007, country: India¹⁵³⁷, *“arabica” cherry destined for export

incidence: 9/14*, conc. range: 0.5–1.4 µg/kg, Ø conc.: 0.91 µg/kg, sample year: 2006/2007, country: India¹⁵³⁷, *“robusta” parchment destined for export

incidence: 25/27*, conc. range: 0.5–13.5 µg/kg, Ø conc.: 3.3 µg/kg, sample

year: 2006/2007, country: India¹⁵³⁷, *“robusta” cherry destined for export incidence: 14/20*, conc. range: <1.0 µg/kg (6 sa), 1.0–5.0 µg/kg (5 sa), >10 µg/kg (3 sa), sample year: unknown, country: India¹⁵⁴⁹, *robusta cherry

incidence: 8/21*, conc. range: <1.0 µg/kg (6 sa), 1.0–5.0 µg/kg (2 sa), sample year: unknown, country: India¹⁵⁴⁹, *robusta parchment

incidence: 5/7*, conc. range: <1.0 µg/kg (1 sa), 1.0–5.0 µg/kg (3 sa), >10 µg/kg (1 sa), sample year: unknown, country: India¹⁵⁴⁹, *arabica cherry

incidence: 35/74*, conc. range: <1.0 µg/kg (21 sa), 1.0–5.0 µg/kg (11 sa), 5–10 µg/kg (1 sa), >10 µg/kg (2 sa), sample year: unknown, country: India¹⁵⁴⁹, *arabica parchment

incidence: 16/16*, conc. range: <1.0 µg/kg (7 sa), 1.0–5.0 µg/kg (8 sa), >10 µg/kg (1 sa), sample year: unknown, country: India¹⁵⁴⁹, *cherry with hull

incidence: 17/20*, conc. range: <1.0 µg/kg (6 sa), 1.0–5.0 µg/kg (8 sa), 5–10 µg/kg (1 sa), >10 µg/kg (2 sa), sample year: unknown, country: India¹⁵⁴⁹, *monsooned coffee

incidence: 6/7*, conc. range: 0.1–0.8 µg/kg, sample year: unknown, country: India¹⁵⁴⁹, *low grade/defective coffee beans (plantation blacks)

incidence: 11/13*, conc. range: 0.2–19.0 µg/kg, sample year: unknown, country: India¹⁵⁴⁹, *low grade/defective coffee beans (rejected beans)

incidence: 13/14*, conc. range: 0.4–103.0 µg/kg, sample year: unknown, country: India¹⁵⁴⁹, *low grade/defective coffee beans (gleanings = windfall cherries)

incidence: 1*/9**, conc.: 23.70 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, imported from Brazil, *Costa Rica, Ghana, India, Indonesia, and Uganda, **green coffee

Coffee beverage see Beverage

Coix seed see Job's-tears

Confectionery may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 2/16, conc. range: 12.6–13.8 µg/kg,
Ø conc.: 13.2 µg/kg, sample year: unknown,
country: Malaysia¹⁵³¹ (2 sa
co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂
incidence: 2/16, conc. range:
4.44–7.62 µg/kg, Ø conc.: 6.03 µg/
kg, sample year: unknown, country:
Malaysia¹⁵³¹ (2 sa co-contaminated with
AFB₁ and AFB₂)

Aspergillus and *Penicillium* Toxins

CITRININ
incidence: 1/1* **, conc.: tr (<100 µg/kg),
sample year: unknown, country: UK¹⁰⁴⁸,
*sugar confectionery, **mold damaged

OCHRATOXIN A
incidence: 1/1* **, conc.: tr, sample
year: unknown, country: UK¹⁰⁴⁸, *sugar
confectionery, **mold damaged
incidence: 1/8*, conc.: 0.3 µg/kg, sample
year: 2001, country: Poland¹¹⁵⁶, *cereal
confectionery

Congressbele may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 9/41, conc. range: 6–1,100 µg/
kg, sample year: 1991/1992, country:
India¹⁴⁸

AFLATOXIN B₂
incidence: 5/41, conc. range:
4–700 µg/kg, sample year: 1991/1992,
country: India¹⁴⁸

Congressbele is a groundnut– based (only the cotyledons are used), spiced snack product.

Cookie may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL
incidence: 3/6*, conc. range: ≤625 µg/
kg, sample year: unknown, country:
Austria¹⁵⁴⁶, *conventional
incidence: 0/7*, conc. range: no
contamination, sample year: unknown,
country: Austria¹⁵⁴⁶, *organic

Coppa may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 5/18, conc. range: ≤0.24 µg/
kg, Ø conc.: 0.12 µg/kg, sample year:
2001/2002, country: Italy³²²

Copra may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 40/62*, conc. range: 10–
4,000 µg/kg, sample year: 1982, country:
India¹²⁰⁸, *dry copra

AFLATOXIN B₂
incidence: 20/62*, conc. range: 10–
1,000 µg/kg, sample year: 1982, country:
India¹²⁰⁸, *dry copra

AFLATOXIN G₁
incidence: 20/62*, conc. range: 20–416 µg/
kg, sample year: 1982, country: India¹²⁰⁸,
*dry copra

AFLATOXIN G₂
incidence: 16/62*, conc. range: 20–400 µg/
kg, sample year: 1982, country: India¹²⁰⁸,
*dry copra

AFLATOXIN

incidence: 2/2, conc. range: 4 µg/kg,
 Ø conc.: 4 µg/kg, sample year: unknown,
 country: Fiji/Zambia¹²⁴¹, sa from Tonga

Copra meal see Meal (copra meal)

Copra powder see Powder (copra powder)

Coriander see Spice (coriander)

Corn see Maize

Corn flour see Flour (maize flour)

Corn foods see Food

Corn instant porridge see Porridge

Corn kernels see Maize

Corn on the Cob see Maize

Corn pastas see Pasta

Corn products see Product (maize products)

Corn starch see Starch (maize)

Corn soup see Maize soup

Cornflakes see Flakes (cornflakes)

Corn-based thickeners see Maize-based thickeners

Corn-extruded products see Product

Cottage cheese see Cheese (Cottage cheese)

Cottonseed may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 25/60, conc. range: ≤153 µg/kg,
 sample year: unknown, country:
 USSR¹⁹¹

Cottonseed meal see Meal (cottonseed meal)

Cow liver see Liver (cow liver)

Cowpea may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 5/16, conc. range: 26–68 µg/kg,
 sample year: 1987, country: India³⁹⁸

incidence: 6/92*, conc. range: 0.40–
 8.04 µg/kg, Ø conc.: 3.58 µg/kg, sample
 year: 2005/2006, country: Benin/Ghana/
 Denmark¹⁶⁵⁷, sa from Benin, *collected
 after 3 month of storage

AFLATOXIN

incidence: 7/101, Ø conc.: 14.1 µg/kg,
 sample year: unknown, country: South
 Africa/France/Kenya/Netherlands¹³¹⁹, sa
 from Swaziland

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 4/20*, conc. range: 45–112 µg/
 kg, Ø conc.: 75.8 µg/kg, sample year:
 1987/1988, country: Egypt⁴⁸⁶, *ncac

Fusarium Toxins**FUMONISIN B₁**

incidence: 4/4*, conc. range:
 120–610 µg/kg, Ø conc.: 255 µg/kg, sample
 year: unknown, country: South Africa¹²⁰⁹,
 *ncac

incidence: 3/92*, conc. range: 10–68 µg/kg,
 Ø conc.: 30 µg/kg, sample year: 2005/2006,
 country: Benin/Ghana/Denmark¹⁶⁵⁷, sa
 from Benin, *collected at harvest

Crackers may contain the following mycotoxins:

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 6/18*, conc. range: 1,600–
 5,400 µg/kg, Ø conc.: 2,800 µg/kg, sample
 year: 1989, country: USA⁴²⁴, *wheat and
 oat crackers/cookies

incidence: 1/3, conc.: 248 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK

ZEARALENONE

incidence: 3/18*, conc. range: 10–16 µg/kg, Ø conc.: 12 µg/kg, sample year: 1989, country: USA⁴²⁴, *wheat and oat crackers/cookies

incidence: ?/3, conc. range: <10 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK

ZEARALENONE-4-SULFATE

incidence: 1/3, conc.: 2.3 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK

see also Bread

Cream cheese see Cheese (Cream cheese)

Croissant may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 8/8*, conc. range: 326–648 µg/kg, sample year: 1993/1994, country: Argentina⁵⁰⁵, *butter croissants

incidence: 4/5*, conc. range: 336–563 µg/kg, sample year: 1993/1994, country: Argentina⁵⁰⁵, *fat croissants

Cuddapah almond see Nut (almonds)

Cumin see Spice (cumin)

Curd (bean curd) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/10*, conc.: 210 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *salted bean curd (tao-hoo-ye) (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 15/45*, conc. range: 0.3–4.3 µg/kg, Ø conc.: 1.10 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China, *fermented bean curd

AFLATOXIN G₁

incidence: 2/10*, conc. range: 110–270 µg/kg, Ø conc.: 190 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *salted bean curd (tao-hoo-ye) (1 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFG₁)

Curd (cheese curd) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: ?/82*, conc. range: <0.005 µg/kg (8 sa), 0.005–0.010 µg/kg (4 sa), >0.010–0.020 µg/kg (11 sa), >0.020–0.050 µg/kg (58 sa), 0.5223 µg/kg (1 sa), sample year: 2007/2008, country: Spain¹¹⁷⁴, *curd (ewe) from Manchego cheese production

incidence: 2/14, conc. range: 0.051–0.127 µg/kg, Ø conc.: 0.089 µg/kg, sample year: 2004/2005, country: Slovenia¹¹⁰⁸

Currant may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 9/12, conc. range: ≤12.4 µg/kg, sample year: 1998, country: Greece²⁶³

incidence: 24/32, conc. range: ≤13.8 µg/kg, sample year: 1999, country: Greece²⁶³

incidence: 10/10, conc. range: 0.6–4.9 µg/kg, Ø conc.: 2.3 µg/kg, sample year: 2000, country: Greece²⁶³

incidence: 13/20, conc. range: 2.9–74.7 µg/kg, Ø conc.: 12.2 µg/kg, sample year: unknown, country: UK⁶³⁵, sa from Greece

incidence: 96/100, conc. range: 0.2–4.0 µg/kg (62 sa), 4.1–10 µg/kg (22 sa), 10.1–

20 µg/kg (7 sa), 20.1–30 µg/kg (4 sa), 40.8 µg/kg (1 sa), sample year: 1998, country: UK⁶³⁸, sa from different countries

incidence: 2/2, conc. range: 0.8–4.85 µg/kg, Ø conc.: 2.81 µg/kg, sample year: 1998/1999, country: Canada¹²³⁸, sa from unknown origin
see also Raisin and Sultana

Curry see Spice (curry)

Curry paste see Paste (curry paste)

Curry powder see Spice (curry)

Dairy products see Product (dairy products)

Danish blue cheese see Cheese (Blue cheese)

Date may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 2/26, conc. range: 0.05–0.1 µg/kg (2 sa), Ø conc.: 0.09 µg/kg, sample year: 1989/1990, country: France³⁹⁷

incidence: 1/6*, conc.: 19 µg/kg, sample year: 1983–1985, country: India⁸⁰², *date palm

incidence: 2/20*, conc. range: 110–180 µg/kg, Ø conc.: 145 µg/kg, sample year: 2002/2003, country: Yemen¹⁵²⁴, *dried dates

AFLATOXIN B₂
incidence: 1/6*, conc.: 15 µg/kg, sample year: 1983–1985, country: India⁸⁰², *date palm

AFLATOXIN G₁
incidence: 1/6*, conc.: 14 µg/kg, sample year: 1983–1985, country: India⁸⁰², *date palm

AFLATOXINS (B₁, B₂, G₁, G₂)
incidence: 2/20, conc. range: 2.1–2.9 µg/kg, Ø conc.: 2.5 µg/kg, sample year: 2009, country: Pakistan¹⁵³²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1/20, conc.: 0.2 µg/kg, sample year: 1996, country: UK⁷⁴²
incidence: 1/6*, conc.: pr, sample year: 1983–1985, country: India⁸⁰², *date palm
incidence: 1/12, conc.: 0.9 µg/kg, sample year: 2000/2001, country: UK⁸³⁴
incidence: 2/22*, conc. range: 0.1–5.0 µg/kg, sample year: 2002/2003, country: Brazil⁸⁶⁵, sa from worldwide, *dried dates

Dessert may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁
incidence: 6/10*, conc. range: 0.0025–0.0783 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey, *keskul (milk pudding containing coconut)
incidence: 5/10*, conc. range: 0.0015–0.043 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey, *muhallebi (milk pudding containing starch)
incidence: 6/10*, conc. range: 0.0024–0.030 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey, *kazandibi (milk pudding slightly burned on the bottom)
incidence: 9/10*, conc. range: 0.0018–0.080 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey, *sutlac (milk pudding containing rice)
incidence: 15/21*, conc. range: ≤0.2061 µg/kg, sample year: unknown, country: Turkey¹⁵²⁶, *traditional Turkish desserts (Muhallebi and Sutlac = milky desserts)

incidence: 10/10*, conc. range: 0.0124–0.3529 µg/kg, Ø conc.: 0.03425 µg/kg, sample year: unknown, country: Turkey¹⁵²⁶, *traditional Turkish desserts (Gullac = milky desserts)

Dessert wine see Wine

Dietary supplement may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/6*, conc. range: 95–98 µg/kg, Ø conc.: 96.5 µg/kg, sample year: unknown, country: Croatia¹⁶¹⁴, *included capsules, liquid capsules, softgel, and tablet of red mold rice

Domiat cheese see Cheese (Domiat cheese)

Double Gloucester cheese see Cheese (Double Gloucester cheese)

Dough (maize dough) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 7/7, conc. range: 19.58–63.91 µg/kg*, sample year: unknown, country: Ghana/Denmark²⁷⁸, sa from Ghana, *values measured during fermentation; for detailed information please see the article

incidence: 12/12*, conc. range: 0.5–293 µg/kg**, Ø conc.: 106.1 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *fermented maize dough, **expressed on dry weight basis

AFLATOXIN B₂

incidence: 7/7, conc. range: 2.93–5.59 µg/kg*, sample year: unknown, country: Ghana/Denmark²⁷⁸, sa from Ghana, *values measured during fermentation; for detailed information please see the article

incidence: 12/12*, conc. range: 0.1–19.8 µg/kg**, Ø conc.: 7 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *fermented maize dough, **expressed on dry weight basis

AFLATOXIN G₁

incidence: 7/7, conc. range: 72.75–106.46 µg/kg*, sample year: unknown, country: Ghana/Denmark²⁷⁸, sa from Ghana, *values measured during fermentation; for detailed information please see the article

incidence: 11/12*, conc. range: 0.4–102 µg/kg**, Ø conc.: 21.6 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *fermented maize dough, **expressed on dry weight basis

AFLATOXIN G₂

incidence: 7/7, conc. range: 3.87–7.78 µg/kg*, sample year: unknown, country: Ghana/Denmark²⁷⁸, sa from Ghana, *values measured during fermentation; for detailed information please see the article

incidence: 9/12*, conc. range: 0.1–12.3 µg/kg**, Ø conc.: 2.66 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *fermented maize dough, **expressed on dry weight basis

AFLATOXINS (TOTAL)

incidence: 19/20, conc. range: 0.6–249.0 µg/kg, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 15/16*, conc. range: 5–1,082 µg/kg, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *included fresh and fermented dough 24 h, 48 h, and 72 h; for detailed information please see the article

incidence: 20/20, conc. range: 0.7585 µg/kg, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana

OCHRATOXIN A

incidence: 5/20, conc. range: ≤ 6.4 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: Ghana/
Denmark²⁸⁰, sa from Ghana

Dried fruits see Fruit, dried

Drink may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/22* **, conc.: 0.06 $\mu\text{g}/\text{l}$,
sample year: 2004, country: Belgium/
Germany²⁸³, sa from Belgium and
Spain *soft drink, **tiger nut-based
("horchata")

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/2*, conc. range: 0.10–0.30 $\mu\text{g}/\text{kg}$
(dry matter), \emptyset conc.: 0.2 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Switzerland⁶⁹²,
*malt-based breakfast drink

incidence: 30/30*, conc. range:
tr–0.037 $\mu\text{g}/\text{kg}$, sample year: 2007,
country: Japan¹⁵⁶⁶, *ready-to-drink coffee

Drink (alcoholic drink) may contain
the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 26/55, \emptyset conc.: 1.9 $\mu\text{g}/\text{kg}$ *,
sample year: unknown, country:
Philippines⁹⁵⁶, *of pos sa?

Drink (cocoa drink) may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 51/56*, conc. range: ≤ 0.630 $\mu\text{g}/\text{kg}$,
sample year: unknown, country:
Germany⁵⁹², *chocolate drinks

incidence: 34/34*, conc. range: ≤ 0.050 $\mu\text{g}/\text{kg}$,
sample year: unknown, country:
Germany⁵⁹², *ready-mixed drinks

Dried vegetables see Vegetables

Duck may contain the following
mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 11/19, conc. range: ≤ 0.09 $\mu\text{g}/\text{kg}$,
sample year: 1993/1994, country:
Denmark⁶²⁴

Duck liver see Liver (duck liver)

Durum grits see Grit (durum grits)

Durum wheat see Wheat

Durum wheat flour see Flour (wheat)

Edam cheese see Cheese (Edam cheese)

Edelpilzkäse see Cheese (Blue cheese)

Egg may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/7, conc.: < 1 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Spain¹⁰¹³
(1 sa co-contaminated with AFB₁
and AFB₂)

AFLATOXIN B₂

incidence: 2/7, conc. range: < 1 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: Spain¹⁰¹³
(1 sa co-contaminated with AFB₁ and
AFB₂, 1 sa co-contaminated with AFB₂
and AFG₁)

AFLATOXIN G₁

incidence: 3/7, conc. range: < 1 $\mu\text{g}/\text{kg}$,
sample year: unknown, country:
Spain¹⁰¹³ (1 sa co-contaminated with AFB₂
and AFG₁, 1 sa co-contaminated with
AFG₁ and BEA; no further information
available)

AFLATOXIN G₂

incidence: 1/7, conc.: < 2 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Spain¹⁰¹³

AFLATOXINS (B₁, B₂, B_{2a}, G₁, M₁)

incidence: 28/62, conc. range: 0.002–7.200 µg/l, sample year: 1991–1995, country: Cameroon¹⁴⁴⁹

AFLATOXINS

incidence: 5/40, conc. range: 0.20–5.80 µg/kg, sample year: 2007, country: Jordan¹⁵⁰⁶

Fusarium Toxins

BEAUVERICIN

incidence: 1/7, conc.: <2 µg/kg, sample year: unknown, country: Spain¹⁰¹³ (1 sa co-contaminated with AFG₁ and BEA)

incidence: ?/3*, conc. range: nd to <1 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *organic eggs

incidence: ?/11*, conc. range: nd to <1 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *barn eggs

incidence: ?/48*, conc. range: nd to <1 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *cage eggs

incidence: ?/32*, conc. range: nd to <1 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *cage eggs

incidence: ?/138*, conc. range: nd–1.3 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *organic egg yolk

incidence: ?/112*, conc. range: nd to <1 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *barn egg yolk

incidence: ?/117*, conc. range: nd to <1 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *cage egg yolk

DEOXYNIVALENOL

incidence: 17/20, conc. range: tr–17.9 µg/kg, sample year: 2006/2007, country: Belgium¹⁴⁴⁷; for detailed information please see the article

ENNIATIN A

incidence: ?/138*, conc. range: nd–0.07 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *organic egg yolk

incidence: ?/112*, conc. range: nd–1.3 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *barn egg yolk

incidence: ?/117*, conc. range: nd to <0.03 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *cage egg yolk

ENNIATIN A₁

incidence: ?/138*, conc. range: nd to <0.42 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *organic egg yolk

incidence: ?/112*, conc. range: nd–7.5 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *barn egg yolk

incidence: ?/117*, conc. range: nd to <0.42 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *cage egg yolk

ENNIATIN B

incidence: ?/3*, conc. range: nd–0.7 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *organic eggs

incidence: ?/3*, conc. range: nd to <0.4 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *organic eggs

incidence: ?/11*, conc. range: nd–0.7 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *barn eggs

incidence: ?/15*, conc. range: nd to <0.4 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *barn eggs

incidence: ?/48*, conc. range: nd–1 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *cage eggs

incidence: ?/32*, conc. range: nd–0.5 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *cage eggs

incidence: ?/138*, conc. range: nd–1.5 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *organic egg yolk

incidence: ?/112*, conc. range: nd–3.8 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *barn egg yolk

incidence: ?/117*, conc. range: nd–1.8 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *cage egg yolk

ENNIATIN B₁

incidence: ?/3*, conc. range: nd to <1.12 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *organic eggs

incidence: ?/48*, conc. range: nd to <1.12 µg/kg, sample year: 2004, country: Finland¹³⁴⁷, *cage eggs

incidence: ?/138*, conc. range: nd to <1.12 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *organic egg yolk

incidence: ?/112*, conc. range: nd–7.0 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *barn egg yolk

incidence: ?/117*, conc. range: nd to <1.12 µg/kg, sample year: 2005, country: Finland¹³⁴⁷, *cage egg yolk

Egusi meal see Meal (egusi meal)

Emu aran may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B

incidence: 2/2, conc. range: 83–86 µg/kg, Ø conc.: 84.5 µg/kg, sample year: unknown, country: Nigeria⁴

Emu aran is a beverage from fermented sap of the *Raphia* palm.

Enchilada see Tortillas

Export beer see Beer

Extract (malt extract) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/3*, conc. range: 16 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Australia, Chile, and India (sa contaminated), *ncac (1 sa co-contaminated with DON and DON3G)

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 1/3*, conc. range: 6 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Australia, Chile, and India (sa contaminated), *ncac (1 sa co-contaminated with DON and DON3G)

Extrudates may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 10/33*, conc. range: ≤2.100 µg/kg, sample year: unknown, country: Germany⁵⁹², *extrudates, chips, popcorn

Fusarium Toxins

DEOXYNIVALENOL

incidence: 7/7*, conc. range: <100 µg/kg (1 sa), 100–200 µg/kg (3 sa), 200–400 µg/kg (3 sa, maximum: 308.3 µg/kg), Ø conc.: 181.6 µg/kg, sample year: unknown, country: Indonesia/Austria¹⁶²⁶, sa from Indonesia, *extruded maize

FUMONISINS

incidence: 26/26*, conc. range: 14–1,178 µg/kg, Ø conc.: 301 µg/kg, sample year: 1995/1996, country: Czech Republic⁶⁷⁰, *gluten-free corn extruded products

Farmer's cheese see Cheese

Farro may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 4/4, conc. range: tr–0.21 µg/kg, sample year: 2000, country: Italy⁹⁹⁸ (2 sa co-contaminated with BEA, FB₁, and OTA, 2 sa contaminated solely OTA)

Fusarium Toxins

BEAUVERICIN

incidence: 2/4, conc. range: 1,010–1,800 µg/kg, Ø conc.: 1,405 µg/kg, sample

year: 2000, country: Italy⁹⁹⁸
(2 sa co-contaminated with BEA, FB₁,
and OTA)

FUMONISIN B₁

incidence: 2/4, conc. range: 30.12–
40.21 µg/kg, Ø conc.: 35.17 µg/kg, sample
year: 2000, country: Italy⁹⁹⁸ (2 sa co-
contaminated with BEA, FB₁, and OTA)

Farro is a type of wheat grain.

Fat may contain the following
mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/10*, conc. range: 0.1232–
0.4265 µg/kg, Ø conc.: 0.1048 µg/kg?,
sample year: unknown, country: China¹⁶⁰⁸,
*pig back fat

T-2 TOXIN

incidence: 5/10*, conc. range: 0.0240–
0.0906 µg/kg, Ø conc.: 0.0231 µg/kg?,
sample year: unknown, country: China¹⁶⁰⁸,
*pig back fat

Fennel see Spice (fennel)

Fenugreek see Spice (fenugreek)

Feta cheese see Cheese (Feta cheese)

Figazzas see Bread

Fig may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/284*, conc. range: 3.6–
320.0 µg/kg, Ø conc.: 112.3 µg/kg, sample
year: 1986, country: Turkey³⁰, *lower grade
dried figs collected from the drying stage
(2 sa co-contaminated with AFB₁, AFB₂,
and AFG₁, 2 sa co-contaminated with AFB₁
and AFB₂, 1 sa co-contaminated with AFB₁
and AFG₁)

incidence: 2/4*, conc. range: 2.5–11.8 µg/kg, Ø
conc.: 7.2 µg/kg, sample year: 1989, country:
Italy⁶⁸, sa from Syria, *dried figs

incidence: 4/24*, conc. range: 1.4–6 µg/
kg, Ø conc.: 3.7 µg/kg, sample year:
1992–1996, country: Cyprus⁷⁴, sa domestic
and imported, *figs and figgie

incidence: 94/386*, conc. range: 0.2–1 µg/
kg (48 sa), 1–5 µg/kg (37 sa), 5–10 µg/kg
(7 sa), 10–20 µg/kg (1 sa), 20–30 µg/kg
(1 sa), sample year: 1985, country:
Switzerland¹⁷⁵, sa from Turkey, *randomly
selected, dried figs

incidence: 52/62*, conc range: 0.2–1 µg/
kg (4 sa), 1–10 µg/kg (14 sa), 10–100 µg/
kg (8 sa), 100–1,000 µg/kg (14 sa), 1,000–
10,000 µg/kg (11 sa), >10,000 µg/kg
(1 sa), sample year: 1985, country:
Switzerland¹⁷⁵, sa from Turkey,
*fluorescent (BGY) figs

incidence: 4/4, conc. range: 1.1–4.4 µg/kg,
Ø conc.: 3.5 µg/kg, sample year: unknown,
country: Denmark¹⁹³

incidence: 8/15, conc. range: 0.05–0.1 µg/
kg (3 sa), 0.11–1 µg/kg (3 sa), 1.1–5 µg/kg
(1 sa), 11–40 µg/kg (1 sa), Ø conc.: 1.9 µg/
kg, sample year: 1989/1990, country:
France³⁹⁷

incidence: 9/49*, conc. range: <0.1–1.0 µg/
kg (2 sa), 1.0–5.0 µg/kg (4 sa), 5.0–10.0 µg/
kg (1 sa), 10.0–15.0 µg/kg (1 sa), >15.0 µg/
kg (1 sa, maximum: 35.1 µg/kg), sample
year: 2003, country: Turkey⁶⁷³,

sa for export, *dried figs (2 sa
co-contaminated with AFB₁ and OTA;
no further information available)

incidence: 17/24*, conc. range: <0.1–
1.0 µg/kg (8 sa), 1.0–5.0 µg/kg (7 sa), 5.0–
10.0 µg/kg (1 sa), 20.6 µg/kg (1 sa), sample
year: 2004, country: Turkey⁶⁷³, sa for
export, *dried figs (2 sa co-contaminated
with AFB₁ and OTA;
no further information available)

incidence: 37/52*, conc. range:
5–76,000 µg/kg, Ø conc.: 6,341.3 µg/kg,

sample year: 1991/1992, country: Switzerland⁸¹⁸, sa from Turkey, *selected dried figs, fluorescent (BGY) (3 sa co-contaminated with AFB₁, AFG₁, KA, and OTA, 11 sa co-contaminated with AFB₁, AFG₁, and KA, 4 sa co-contaminated with AFB₁, KA, and OTA, 19 sa co-contaminated with AFB₁ and KA)

incidence: 9?/24*, conc. range: 3.7–60.0 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs from the tree

incidence: 4?/19*, conc. range: 1.8–63.0 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs on the ground

incidence: 2?/8*, conc. range: 0.5–3.7 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs during (sun) drying

incidence: 1/3*, conc.: 0.5 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs in farmer store house

incidence: 7?/12*, conc. range: 0.5–12.5 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs before processing

incidence: 4?/32*, conc. range: 0.5–4.2 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs during processing

incidence: 1/20*, conc.: 0.28 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco, *dried figs

incidence: 11/48*, conc. range: 0.1–696.3 µg/kg, Ø conc.: 113.7 µg/kg, sample year: unknown, country: Turkey¹³⁴⁴, *dried figs positive for *Aspergillus* section *Flavi* contamination (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 4 sa co-contaminated with AFB₁, AFB₂, AFG₁ and CPA, 4 sa co-contaminated with AFB₁, AFB₂, and CPA, 2 sa co-contaminated with AFB₁ and CPA)

incidence: 49/49*, conc. range: 0.7–2,221 µg/kg, Ø conc.: 284.6 µg/kg, sample year: 2005, country: Turkey/Netherlands¹³⁷⁵, sa from Turkey, *49 individual figs unsuitable for food (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 11 sa

co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 6 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 7 sa co-contaminated with AFB₁, AFB₂, and OTA, 4 sa co-contaminated with AFB₁, AFG₁, and OTA, 3 sa co-contaminated with AFB₁ and AFB₂, 4 sa co-contaminated with AFB₁ and AFG₁, 5 sa co-contaminated with AFB₁ and OTA, 5 sa contaminated solely with AFB₁)

incidence: 104/2,550*, conc. range: <0.1–1.0 µg/kg (76 sa), 1.0–2.0 µg/kg (10 sa), 2.0–10.0 µg/kg (13 sa), 10.0–20.0 µg/kg (3 sa), >20.0 µg/kg (2 sa, maximum: 32.0 µg/kg), sample year: 2003, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 386/3,096*, conc. range: <0.1–1.0 µg/kg (261 sa), 1.0–2.0 µg/kg (61 sa), 2.0–10.0 µg/kg (54 sa), 10.0–20.0 µg/kg (10 sa), >20.0 µg/kg (14 sa, maximum: 115.3 µg/kg), sample year: 2004, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 740/3,920*, conc. range: <0.1–1.0 µg/kg (460 sa), 1.0–2.0 µg/kg (99 sa), 2.0–10.0 µg/kg (127 sa), 10.0–20.0 µg/kg (31 sa), >20.0 µg/kg (23 sa, maximum: 288.2 µg/kg), sample year: 2005, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 132/830*, conc. range: <0.1–1.0 µg/kg (99 sa), 1.0–2.0 µg/kg (13 sa), 2.0–10.0 µg/kg (17 sa), 10.0–20.0 µg/kg (3 sa), sample year: 2006, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 2/20*, conc. range: 120–250 µg/kg, Ø conc.: 185 µg/kg, sample year: 2002/2003, country: Yemen¹⁵²⁴, *dried figs

AFLATOXIN B₂

incidence: 4/284*, conc. range: 23.5–71.8 µg/kg, Ø conc.: 50.6 µg/kg, sample year: 1986, country: Turkey³⁰, *lower grade dried figs collected from the drying stage (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4?/24*, conc. range: 0.9–1.5 µg/kg, Ø conc.: 1.2 µg/kg, sample year:

1992–1996, country: Cyprus⁷⁴,
sa domestic and imported, *figs
and figpie

incidence: 4/4, conc. range: 0.5–1.1 µg/kg,
∅ conc.: 0.73 µg/kg, sample year:
unknown, country: Denmark¹⁹³

incidence: 9?/24*, conc. range: 9.0–
37.7 µg/kg, sample year: 1988, country:
Turkey⁸⁴⁵, *figs from the tree

incidence: 7?/12*, conc. range: 0.5–
4.16 µg/kg, sample year: 1988, country:
Turkey⁸⁴⁵, *figs before processing

incidence: 4?/32*, conc. range: 0.5–2.2 µg/
kg, sample year: 1988, country: Turkey⁸⁴⁵,
*figs during processing

incidence: 9/48*, conc. range: 0.1–16.7 µg/
kg, ∅ conc.: 2.92 µg/kg, sample year:
unknown, country: Turkey¹³⁴⁴, *dried figs
positive for *Aspergillus* section *Flavi*
contamination (1 sa co-contaminated
with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 4
sa co-contaminated with AFB₁, AFB₂,
AFG₁ and CPA, 4 sa co-contaminated with
AFB₁, AFB₂,
and CPA)

incidence: 30/49*, conc. range: 0.1–
74.4 µg/kg, ∅ conc.: 6.18 µg/kg, sample
year: 2005, country: Turkey/
Netherlands¹³⁷⁵, sa from Turkey, *49
individual figs unsuitable for food (3 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
AFG₂, and OTA, 11 sa co-contaminated
with AFB₁, AFB₂, AFG₁, and OTA, 6 sa
co-contaminated with AFB₁, AFB₂, and
AFG₁, 7 sa co-contaminated with AFB₁,
AFB₂, and OTA, 3 sa co-contaminated
with AFB₁ and AFB₂)

AFATOXIN G₁

incidence: 3/284*, conc. range: 12.4–
97.5 µg/kg, ∅ conc.: 61.4 µg/kg, sample
year: 1986, country: Turkey³⁰, *lower grade
dried figs collected from the drying stage
(2 sa co-contaminated with AFB₁, AFB₂,
and AFG₁, 1 sa co-contaminated with AFB₁
and AFG₁)

incidence: 4?/24*, conc. range: 0.8–2.1 µg/
kg, ∅ conc.: 1.4 µg/kg, sample year:

1992–1996, country: Cyprus⁷⁴, sa domestic
and imported, *figs and figpie

incidence: 49/386*, conc. range: 0.2–1 µg/
kg (28 sa), 1–5 µg/kg (17 sa), 5–10 µg/kg
(2 sa), 20–30 µg/kg (2 sa), sample year:

1985, country: Switzerland¹⁷⁵, sa from
Turkey, *randomly selected, dried figs

incidence: 21/62*, conc. range: 0.2–1 µg/
kg (2 sa), 1–10 µg/kg (5 sa), 10–100 µg/kg
(4 sa), 100–1,000 µg/kg (4 sa), 1,000–
10,000 µg/kg (4 sa), >10,000 µg/kg
(2 sa), sample year: 1985, country:

Switzerland¹⁷⁵, sa from Turkey,
*fluorescent (BGY) figs

incidence: 4/4, conc. range: 0.9–1.3 µg/kg,
∅ conc.: 1.1 µg/kg, sample year: unknown,
country: Denmark¹⁹³

incidence: 14/52* **, conc. range:
24–180,000 µg/kg, ∅ conc.: 15,518 µg/kg,
sample year: 1991/1992, country:
Switzerland⁸¹⁸, sa from Turkey, *selected
dried figs, fluorescent (BGY)
(3 sa co-contaminated with AFB₁, AFG₁,
KA, and OTA, 11 sa co-contaminated with
AFB₁, AFG₁, and KA)

incidence: 9?/24*, conc. range: 3.2–
37.7 µg/kg, sample year: 1988, country:
Turkey⁸⁴⁵, *figs from the tree

incidence: 4?/19*, conc. range: 15.2–
78.3 µg/kg, sample year: 1988, country:
Turkey⁸⁴⁵, *figs on the ground

incidence: 2?/8*, conc. range: 0.5–4.0 µg/
kg, sample year: 1988, country: Turkey⁸⁴⁵,
*figs during (sun) drying

incidence: 7?/12*, conc. range: 0.5–
16.6 µg/kg, sample year: 1988, country:
Turkey⁸⁴⁵, *figs before processing

incidence: 4?/32*, conc. range: 0.5–4.2 µg/
kg, sample year: 1988, country: Turkey⁸⁴⁵,
*figs during processing

incidence: 5/48*, conc. range: 0.4–
192.8 µg/kg, ∅ conc.: 51.98 µg/kg, sample
year: unknown, country: Turkey¹³⁴⁴,
*dried figs positive for *Aspergillus* section
Flavi contamination

(1 sa co-contaminated with AFB₁, AFB₂,
AFG₁, AFG₂, and CPA, 4 sa

co-contaminated with AFB₁, AFB₂, AFG₁ and CPA)

incidence: 29/49*, conc. range: 0.2–734.2 µg/kg, Ø conc.: 54 µg/kg, sample year: 2005, country: Turkey/Netherlands¹³⁷⁵, sa from Turkey, *49 individual figs unsuitable for food (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 6 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 4 sa co-contaminated with AFB₁, AFG₁, and OTA, 4 sa co-contaminated with AFB₁ and AFG₁)

AFLATOXIN G₂

incidence: 1/4, conc.: 0.7 µg/kg, sample year: unknown, country: Denmark¹⁹³

incidence: 1/24*, conc.: 4.2 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported, *figs and figpie

incidence: 9?/24*, conc. range: 0.5–15.0 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs from the tree

incidence: 4?/19*, conc. range: 0.5–8.6 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs on the ground

incidence: 7?/12*, conc. range: 0.5–12.5 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs before processing

incidence: 4?/32*, conc. range: 0.5–2.0 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs during processing

incidence: 1/48*, conc.: 0.3 µg/kg, sample year: unknown, country: Turkey¹³⁴⁴, *dried figs positive for *Aspergillus* section *Flavi* contamination

(1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA)

incidence: 4/49*, conc. range: 0.2–22.3 µg/kg, Ø conc.: 7.07 µg/kg, sample year: 2005, country: Turkey/Netherlands¹³⁷⁵, sa from Turkey, *49 individual figs unsuitable for food (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA,

1 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA)

AFLATOXIN

incidence: 7/98*, conc. range: 0.23–4.28 µg/kg, sample year: unknown, country: Turkey¹³⁴⁶, *dried figs (2 sa co-contaminated with AF and OTA; no further information available)

AFLATOXINS (B₁, B₂)

incidence: 11/19*, conc. range: 0.3–2.0 µg/kg (10 sa), 1,500 µg AFB₁/kg (1 sa), sample year: 2002–2003, country: Brazil⁹¹⁶, sa from Argentina, Chile, Iran, and Turkey, *dried figs

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 24/30, conc. range: 28–241 µg/kg, Ø conc.: 103.5 µg/kg, sample year: unknown, country: UK³⁰³, sa from France, Greece, Turkey, and unknown origin

incidence: 16/20* **, conc. range: 1.0–3.9 µg/kg (10 sa), 10.1–20.0 µg/kg (3 sa), 20.1–50.0 µg/kg (2 sa), 89 µg/kg (1 sa), sample year: unknown, country: UK⁷³⁹, *port sa, **dried figs

incidence: 1/29*, conc.: 1.0–3.9 µg/kg, sample year: unknown, country: UK⁷³⁹, *retail sa

incidence: 2/6*, conc. range: 0.70–11.8 µg/kg, Ø conc.: 6.25 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *dried figs

incidence: 462/2,550*, conc. range: <0.1–1.0 µg/kg (338 sa), 1.0–2.0 µg/kg (44 sa), 2.0–10.0 µg/kg (51 sa), 10.0–20.0 µg/kg (16 sa), >20.0 µg/kg (13 sa, maximum: 200 µg/kg), sample year: 2003, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 518/3,096*, conc. range: <0.1–1.0 µg/kg (340 sa), 1.0–2.0 µg/kg (65 sa), 2.0–10.0 µg/kg (76 sa), 10.0–20.0 µg/kg (18 sa), >20.0 µg/kg (19 sa, maximum: 155 µg/kg), sample year: 2004, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 897/3,920*, conc. range: <0.1–1.0 µg/kg (542 sa), 1.0–2.0 µg/kg (118 sa),

2.0–10.0 µg/kg (153 sa), 10.0–20.0 µg/kg (49 sa), >20.0 µg/kg (35 sa, maximum: 316 µg/kg), sample year: 2005, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 166/830*, conc. range: <0.1–1.0 µg/kg (107 sa), 1.0–2.0 µg/kg (33 sa), 2.0–10.0 µg/kg (18 sa), 10.0–20.0 µg/kg (5 sa), >20.0 µg/kg (3 sa, maximum: 33 µg/kg), sample year: 2006, country: Turkey¹⁴⁰⁵, *dried figs

incidence: 5/10*, conc. range: 0.8–12.5 µg/kg, Ø conc.: 5.81 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *dried figs

incidence: 1575/4917* **, conc. range: 0.2–259.46 µg/kg, sample year: 2007, country: Turkey/USA¹⁵³⁹, sa from Turkey, *dried figs, **destined for export (94 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 152 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 6 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 134 sa co-contaminated with AFB₁ and AFB₂, 444 sa co-contaminated with AFB₁ and AFG₁, 700 sa contaminated solely with AFB₁, 45 sa contaminated solely with AFG₁)

AFLATOXINS (TOTAL)

incidence: 11/29*, conc. range: 1.0–10.0 µg/kg (6 sa), >10.0 µg/kg (5 sa, maximum: 96 µg/kg), sample year: 1988, country: UK¹⁶⁴, sa from Turkey, *dried figs

incidence: 27/57*, conc. range: 1.0–10.0 µg/kg (21 sa), >10.0 µg/kg (6 sa, maximum: 34 µg/kg), sample year: 1989, country: UK¹⁶⁴, sa from Turkey, *dried figs

incidence: 18/36*, conc. range: 1.0–10.0 µg/kg (16 sa), >10.0 µg/kg (2 sa, maximum: 25 µg/kg), sample year: 1990, country: UK¹⁶⁴, sa from Turkey, *dried figs

incidence: 6/20*, conc. range: ≤32.9 µg/kg, Ø conc.: 8.70 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco, *dried figs

incidence: 1/49*, conc.: 0.62 µg/kg, sample year: 2008/2009, country: Spain¹⁵³⁶, *dried figs

incidence: 313/2,643* **, conc. range: 0.2–162.76 µg/kg, sample year: 2007, country: Turkey¹⁵⁵¹, *dried figs, **destined for export (14 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 13 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 20 sa co-contaminated with AFB₁ and AFB₂, 85 sa co-contaminated with AFB₁ and AFG₁, 159 sa contaminated solely with AFB₁, 22 sa contaminated solely with AFG₁)

AFLATOXINS

incidence: 16/110*, conc. range: <5–337 µg/kg, sample year: unknown, country: Italy⁸⁶, sa from Turkey, *dried figs

incidence: 11/111*, conc. range: 0.1–763.2 µg/kg, sample year: unknown, country: Turkey¹³³¹, *dried figs (5 sa co-contaminated with AFS and OTA; no further information available)

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 27/111*, conc. range: 25.0–187.0 µg/kg, sample year: unknown, country: Turkey¹³³¹, *dried figs (17 sa co-contaminated with CPA and FB₁; no further information available)

incidence: 28/48*, conc. range: 25–187 µg/kg, Ø conc.: 58.3 µg/kg, sample year: unknown, country: Turkey¹³⁴⁴, *dried figs positive for *Aspergillus* section *Flavi* contamination (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 4 sa co-contaminated with AFB₁, AFB₂, AFG₁ and CPA, 4 sa co-contaminated with AFB₁, AFB₂, and CPA, 2 sa co-contaminated with AFB₁ and CPA, 17 sa contaminated solely with CPA)

KOJIC ACID

incidence: 52/52*, conc. range: 8,000–6,900,000 µg/kg, Ø conc.: 1,336,000 µg/kg, sample year: 1991/1992, country: Switzerland⁸¹⁸, sa from Turkey, *selected dried figs, fluorescent (BGY) (3 sa co-contaminated with AFB₁, AFG₁, KA, and

OTA, 11 sa co-contaminated with AFB₁, AFG₁, and KA, 4 sa co-contaminated with AFB₁, KA, and OTA, 19 sa co-contaminated with AFB₁ and KA, 5 sa co-contaminated with KA and OTA, 10 sa contaminated solely with KA)

OCHRATOXIN A

incidence: 4/4*, conc. range: 60–120 µg/kg, sample year: 1992, country: Egypt²⁸¹, *dried figs

incidence: 1/9*, conc.: 160 µg/kg, sample year: unknown, country: Switzerland⁵⁷⁸, *dried figs

incidence: 27/34*, conc. range: ≤3.95 µg/kg, sample year: unknown, country: Germany⁵⁹², *dried figs

incidence: 2/20, conc. range: 0.2–0.8 µg/kg, Ø conc.: 0.5 µg/kg, sample year: 1998, country: UK⁶³⁸, sa from different countries

incidence: 7/51*, conc. range: <0.1–1.0 µg/kg (2 sa), 1.0–5.0 µg/kg (1 sa), 5.0–10.0 µg/kg (1 sa), 10.0–15.0 µg/kg (3 sa, maximum: 13.0 µg/kg), sample year: 2003, country: Turkey⁶⁷³, sa for export, *dried figs (2 sa co-contaminated with AFB₁ and OTA; no further information available)

incidence: 6/35*, conc. range: <0.1–1.0 µg/kg (2 sa), 1.0–5.0 µg/kg (1 sa), >15.0 µg/kg (3 sa, maximum: 26.3 µg/kg), sample year: 2004, country: Turkey⁶⁷³, sa for export, *dried figs (2 sa co-contaminated with AFB₁ and OTA; no further information available)

incidence: 1/19*, conc.: 2.0 µg/kg, sample year: 2004, country: Turkey⁶⁷³, sa for retail, *dried figs

incidence: 12/52*, conc. range: 5–12,300 µg/kg, Ø conc.: 1,680 µg/kg, sample year: 1991/1992, country: Switzerland⁸¹⁸, sa from Turkey, *selected dried figs, fluorescent (BGY) (3 sa co-contaminated with AFB₁, AFG₁, KA, and OTA, 4 sa co-contaminated with AFB₁, KA, and OTA, 5 sa co-contaminated with KA and OTA)

incidence: 4/21, conc. range: 0.4–151 µg/kg, Ø conc.: 38.9 µg/kg, sample year: 2000/2001, country: UK⁸³⁴, sa from different countries

incidence: 1/19*, conc.: 7.5 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs on the ground

incidence: 1/12*, conc.: 8.3 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵, *figs before processing

incidence: 13/20*, conc. range: 0.03–1.42 µg/kg, Ø conc.: 0.33 µg/kg, sample year: 2005, country: Morocco⁸⁵⁹, *dried figs

incidence: 18/19*, conc. range: 0.1–5.0 µg/kg (13 sa), 5.1–10.0 µg/kg (2 sa), 10.1–20.0 µg/kg (2 sa), 20.1–30.0 µg/kg (1 sa), sample year: 2002/2003, country: Brazil⁸⁶⁵, sa from worldwide, *dried figs

incidence: 31/38*, conc. range: 0.12–1.00 µg/kg (31 sa), >8.01 µg/kg (2 sa), sample year: 2003, country: Turkey¹¹⁹³, *dried figs

incidence: 20/22*, conc. range: 0.12–1.00 µg/kg (20 sa), >8.01 µg/kg (2 sa), sample year: 2004, country: Turkey¹¹⁹³, *dried figs

incidence: 53/111*, conc. range: 0.1–15.3 µg/kg, sample year: unknown, country: Turkey¹³³¹, *dried figs (5 sa co-contaminated with AFS and OTA; no further information available)

incidence: 18/98*, conc. range: 0.87–24.37 µg/kg, sample year: unknown, country: Turkey¹³⁴⁶, *dried figs (2 sa co-contaminated with AF and OTA; no further information available)

incidence: 32/50*, conc. range: 0.7–1,710 µg/kg, Ø conc.: 194.6 µg/kg, sample year: 2005, country: Turkey/Netherlands¹³⁷⁵, sa from Turkey, *50 individual figs unsuitable for food (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂,

and OTA, 7 sa co-contaminated with AFB₁, AFB₂, and OTA, 4 sa co-contaminated with AFB₁, AFG₁, and OTA, 5 sa co-contaminated with AFB₁ and OTA, 1 sa contaminated solely with OTA)

incidence: 2/20*, conc. range: 70–160 µg/kg, Ø conc.: 115 µg/kg, sample year: 2002/2003, country: Yemen¹⁵²⁴, *dried figs

incidence: 31/35*, conc. range: ≥0.06–0.49 µg/kg (25 sa), 0.5–0.99 µg/kg (3 sa), >9.9 µg/kg (3 sa**), maximum: 277 µg/kg), sample year: unknown, country: Spain¹⁵³⁰, sa from France (1 sa), Spain (29 sa), and Turkey (5 sa), *dried figs, **2 sa from Spain and 1 from Turkey

Fusarium Toxins

FUMONISIN B₁

incidence: 83/111*, conc. range: 50–3,650 µg/kg, sample year: unknown, country: Turkey¹³³¹, *dried figs (17 sa co-contaminated with CPA and FB₁; no further information available)

incidence: 64/125*, conc. range: LOD to ≤60 µg/kg (41 sa), 70–80 µg/kg (14 sa), 90–150 µg/kg (8 sa), 163 µg/kg (1 sa), sample year: 2004, country: Turkey¹⁶³⁴, *dried figs

incidence: 111/137*, conc. range: LOD to ≤60 µg/kg (45 sa), 70–80 µg/kg (20 sa), 90–150 µg/kg (32 sa), 160–200 µg/kg (11 sa), 210–400 µg/kg (3 sa, maximum: 332 µg/kg), sample year: 2005, country: Turkey¹⁶³⁴, *dried figs

FUMONISIN B₂

incidence: 12/125*, conc. range: LOD to ≤60 µg/kg (10 sa), 90–150 µg/kg (2 sa, maximum: 145 µg/kg), sample year: 2004, country: Turkey¹⁶³⁴, *dried figs

incidence: 44/137*, conc. range: LOD to ≤60 µg/kg (38 sa), 70–80 µg/kg (1 sa), 90–150 µg/kg (4 sa), 160–200 µg/kg (1 sa, maximum: 198 µg/kg), sample year: 2005, country: Turkey¹⁶³⁴, *dried figs

Fig paste see Paste (fig paste)

Filberts see Nut (hazel nuts)

Fish may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: ?/8, conc. range: 534–539 µg/kg, sample year: 1977, country: Nigeria¹⁷⁷

incidence: 5/20*, conc. range: tr–moderately high, sample year: unknown, country: Sierra Leone⁶⁷⁴, *smoke-dried fish (“Bonga”)

AFLATOXIN G₁

incidence: 6/20*, conc. range: tr–moderately high, sample year: unknown, country: Sierra Leone⁶⁷⁴, *smoke-dried fish (“Bonga”)

AFLATOXIN G₂

incidence: 2/20*, conc. range: tr, sample year: unknown, country: Sierra Leone⁶⁷⁴, *smoke-dried fish (“Bonga”)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/20*, conc. range: tr–moderately high, sample year: unknown, country: Sierra Leone⁶⁷⁴, *smoke-dried fish (“Bonga”)

Fish products see Product (fish products)

Fish/shrimp may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 7/139*, conc. range: ≤772 µg/kg, Ø conc.: 166 µg/kg, sample year: 1967–1969, country: Thailand¹⁶³, *dried fish/shrimp

Flakes (barley flakes) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/10, conc. range: 140–160 µg/kg, Ø conc.: 150 µg/kg, sample year: 1990–1992, country: Poland¹¹⁵⁶

Flakes (bran flakes) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/4, conc.: 254 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷

ZEARALENONE

incidence: 1/4, conc.: 44.2 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷

ZEARALENONE-4-SULFATE

incidence: 1/4, conc.: 6.1 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷

Flakes (cereal flakes) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/32, conc. range: 0.1–24.3 µg/kg, sample year: 2000, country: Poland¹¹⁵⁶

Flakes (cornflakes) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 1/?, conc.: 25 µg/kg, sample year: unknown, country: Italy¹¹⁰⁴

Aspergillus Toxins

AFLATOXIN B₁

incidence: 15*/57, conc. range: 60–163 µg/kg, sample year: 1995–2003, country: Nepal²³⁹, * >30 µg/kg

AFLATOXINS (TOTAL)

incidence: 19/22, conc. range: ≤5.3 µg/kg, Ø conc.: 3.6 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 1/?, conc.: 72 µg/kg, sample year: unknown, country: Italy¹¹⁰⁴

OCHRATOXIN A

incidence: 12/38, conc. range: ≤0.100 µg/kg, sample year: unknown, country: Germany⁵⁹²

Fusarium Toxins

DEOXYNIVALENOL

incidence: 49/65, conc. range: ≤580 µg/kg, Ø conc.: 109 µg/kg, sample year: 2008, country: Spain⁹⁷⁷

incidence: 4/5, conc. range: 37.6–195.1 µg/kg, Ø conc.: 91.3 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴

incidence: 5/6, conc. range: ≤207 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β-ZEL, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, ZEA, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, and β-ZEL)

incidence: 40/61, conc. range: ≤718 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

3-ACETYLDEOXYNIVALENOL

incidence: 5/6, conc. range: 29–52 µg/kg, Ø conc.: 37.6 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β-ZEL, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, ZEA, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, and β-ZEL)

incidence: 43/61, conc. range: ≤431 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

15-ACETYLDEOXYNIVALENOL

incidence: 5/6, conc. range: ≤17 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium

(1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β -ZEL, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, ZEA, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, and α -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, and β -ZEL)

incidence: 40/61, conc. range: ≤ 194 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country:

Belgium¹⁵⁹³

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 3/6, conc. range: 24–28 $\mu\text{g}/\text{kg}$, \emptyset conc.: 25.3 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β -ZEL, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, ZEA, and β -ZEL)

incidence: 31/61, conc. range: 12–63 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³

FUMONISIN B₁

incidence: 1/4, conc.: 660 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Brazil²¹⁵

incidence: 1/2, conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1992/1993, country: Italy³⁶²

incidence: 6/15, conc. range: 21–165 $\mu\text{g}/\text{kg}$, \emptyset conc.: 35.9 $\mu\text{g}/\text{kg}$, sample year: 1996, country: Korea³⁷⁵

incidence: 1/5, conc.: 1,430 $\mu\text{g}/\text{kg}$, sample year: 1995, country: Netherlands³⁸⁰

incidence: 6/10, conc. range: 5–1,030 $\mu\text{g}/\text{kg}$, sample year: 1996, country: Denmark³⁸⁵

incidence: 1/3, conc.: 218 $\mu\text{g}/\text{kg}$, sample year: 1995/1996, country: Uruguay/Canada/USA³⁹⁹, sa from Uruguay

incidence: 1/12, conc.: 55 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Switzerland⁴⁰⁰

incidence: 2/12, conc. range: ≤ 100 $\mu\text{g}/\text{kg}$, \emptyset conc.: 60 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Spain⁴⁰⁴

incidence: 7/8, conc. range: 23–1,092 $\mu\text{g}/\text{kg}$, \emptyset conc.: 266 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy⁴⁰⁷, sa from Europe (7 sa co-contaminated with FB₁ and FB₂)

incidence: 2/2, conc. range: 10 $\mu\text{g}/\text{kg}$, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1990, country: USA⁴¹⁰

incidence: 4/17, conc. range: 140–1,281 $\mu\text{g}/\text{kg}$, \emptyset conc.: 497.0 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Taiwan⁴¹⁸

incidence: 3/39, conc. range: 16.1–18.5 $\mu\text{g}/\text{kg}$, \emptyset conc.: 17.03 $\mu\text{g}/\text{kg}$, sample year: 1998–2000, country: Spain⁴²¹

incidence: 10/11, conc. range: 13–209 $\mu\text{g}/\text{kg}$, \emptyset conc.: 51.5 $\mu\text{g}/\text{kg}$, sample year: 2003/2004, country: Canada⁶¹⁴

incidence: 22/25, conc. range: 8–198 $\mu\text{g}/\text{kg}$, \emptyset conc.: 86.1 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁶¹⁸, sa from Canada and USA (1 sa co-contaminated with FB₁, FB₂, FB₃, PHFB₁, and PHFB₂, 2 sa co-contaminated with FB₁, FB₂, FB₃, and PHFB₁, 2 sa co-contaminated with FB₁, FB₂, PHFB₁, and PHFB₂, 1 sa co-contaminated with FB₁, FB₂, and PHFB₁, 1 sa co-contaminated with FB₁, PHFB₁, and PHFB₂, 6 sa co-contaminated with FB₁ and FB₂, 1 sa co-contaminated with FB₁ and PHFB₁, 8 sa contaminated solely with FB₁)

incidence: 4/6, conc. range: 14–35 $\mu\text{g}/\text{kg}$, \emptyset conc.: 25 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sweden⁶⁸²

incidence: 16/17, conc. range: 2–38 $\mu\text{g}/\text{kg}$, \emptyset conc.: 11 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Argentina⁸¹⁷

incidence: 15/81, conc. range: ≤ 59.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 24.6 $\mu\text{g}/\text{kg}$, year: 2004–2007, country: Japan⁹⁰⁰

incidence: 8/20, conc. range: tr–784 $\mu\text{g}/\text{kg}$, sample year: 2003–2005, country: Brazil⁹⁵⁸

incidence: 11/11*, conc. range: 157–4,528 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Brazil⁹⁶⁰, *pre-cooked cornflakes (3 sa co-contaminated with FB₁ and FB₂, 8 sa contaminated solely with FB₁)

incidence: 25/39, conc. range: <LOQ–292 µg/kg, sample year: unknown, country: Belgium¹⁰⁰² (25 sa co-contaminated with FB₁, FB₂, and FB₃)
 incidence: 4/5, conc. range: 7–32 µg/kg, Ø conc.: 21 µg/kg, sample year: unknown, country: Italy¹⁰⁷⁶
 incidence: 66/130*, conc. range: tr (8 sa), 40–100 µg/kg (21 sa), 101–200 µg/kg (17 sa), 201–300 µg/kg (8 sa), >300 µg/kg (12 sa, maximum: 393 µg/kg), sample year: 2003/2004, country: Belgium/Hungary¹³¹⁴ sa from Belgium, *conventional
 incidence: 69/75*, conc. range: tr (8 sa), 40–100 µg/kg (22 sa), 101–200 µg/kg (19 sa), 201–300 µg/kg (12 sa), >300 µg/kg (8 sa, maximum: 464 µg/kg), sample year: 2003/2004, country: Belgium/Hungary¹³¹⁴, sa from Belgium, *organic
 incidence: 4/4, conc. range: 25.3–76.4 µg/kg, Ø conc.: 53.7 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

HYDROLYZED FUMONISIN B₁

incidence: 3/3, conc. range: 39.8–102.0 µg/kg, Ø conc.: 69.4 µg/kg, sample year: unknown, country: Germany¹³⁹⁷

HYDROLYZED FUMONISIN B₁ (PARTIAL)

incidence: 8/25, conc. range: pr, sample year: unknown, country: Canada⁶¹⁸, sa from Canada and USA
 (1 sa co-contaminated with FB₁, FB₂, FB₃, PHFB₁, and PHFB₂, 2 sa co-contaminated with FB₁, FB₂, FB₃, and PHFB₁, 2 sa co-contaminated with FB₁, FB₂, PHFB₁, and PHFB₂, 1 sa co-contaminated with FB₁, FB₂, and PHFB₁, 1 sa co-contaminated with FB₁, PHFB₁, and PHFB₂, 1 sa co-contaminated with FB₁ and PHFB₁)

FUMONISIN B₂

incidence: 1/4, conc.: 30 µg/kg, sample year: 1999, country: Brazil²¹⁵
 incidence: 2/10, conc. range: 4–243 µg/kg, Ø conc.: 123.5 µg/kg, sample year: 1996, country: Denmark³⁸⁵

incidence: 7/8, conc. range: 8–235 µg/kg, Ø conc.: 61.4 µg/kg, sample year: unknown, country: Italy⁴⁰⁷, sa from Europe (7 sa co-contaminated with FB₁ and FB₂)

incidence: 3/17, conc. range: 120–466 µg/kg, Ø conc.: 165.6 µg/kg, sample year: unknown, country: Taiwan⁴¹⁸

incidence: 1/11, conc.: 23 µg/kg, sample year: 2003/2004, country: Canada⁶¹⁴

incidence: 12/25, conc. range: 11–26 µg/kg, Ø conc.: 18.4 µg/kg, sample year: unknown, country: Canada⁶¹⁸, sa from Canada and USA (1 sa co-contaminated with FB₁, FB₂, FB₃, PHFB₁, and PHFB₂, 2 sa co-contaminated with FB₁, FB₂, PHFB₁, and PHFB₂, 1 sa co-contaminated with FB₁, FB₂, and PHFB₁, 6 sa co-contaminated with FB₁ and FB₂)

incidence: 8/20, conc. range: tr–122 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸

incidence: 3/11*, conc. range: 84–1,328 µg/kg, country: Brazil⁹⁶⁰, *pre-cooked cornflakes (3 sa co-contaminated with FB₁ and FB₂)

incidence: 25/39, conc. range: <LOQ–26 µg/kg, sample year: unknown, country: Belgium¹⁰⁰² (25 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 64/130*, conc. range: tr (23 sa), 15–30 µg/kg (41 sa, maximum: 27 µg/kg), sample year: 2003/2004, country: Belgium/Hungary¹³¹⁴ sa from Belgium, *conventional

incidence: 70/75*, conc. range: tr (35 sa), 15–30 µg/kg (32 sa), 31–50 µg/kg (3 sa, maximum: 43 µg/kg), sample year: 2003/2004, country: Belgium/Hungary¹³¹⁴, sa from Belgium, *organic

HYDROLYZED FUMONISIN B₂ (PARTIAL)

incidence: 4/25, conc. range: pr, sample year: unknown, country: Canada⁶¹⁸, sa from Canada and USA (1 sa

co-contaminated with FB₁, FB₂, FB₃, PHFB₁, and PHFB₂, 2 sa co-contaminated with FB₁, FB₂, PHFB₁, and PHFB₂, 1 sa co-contaminated with FB₁, PHFB₁, and PHFB₂)

FUMONISIN B₃

incidence: 3/25, conc. range: pr, sample year: unknown country: Canada⁶¹⁸, sa from Canada and USA (1 sa co-contaminated with FB₁, FB₂, FB₃, PHFB₁, and PHFB₂, 2 sa co-contaminated with FB₁, FB₂, FB₃, and PHFB₁)

incidence: 25/39, conc. range: <LOQ–49 µg/kg, sample year: unknown, country: Belgium¹⁰⁰² (25 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 64/130*, conc. range: tr (23 sa), 25–50 µg/kg (39 sa), 51–60 µg/kg (2 sa, maximum: 50 µg/kg), sample year: 2003/2004, country: Belgium/Hungary¹³¹⁴ sa from Belgium, *conventional

incidence: 70/75*, conc. range: tr (45 sa), 25–50 µg/kg (18 sa), 51–60 µg/kg (3 sa), >60 µg/kg (4 sa, maximum: 90 µg/kg), sample year: 2003/2004, country: Belgium/Hungary¹³¹⁴, sa from Belgium, *organic

FUMONISINS (B₁, B₂)

incidence: 10/35, conc. range: 35–178 µg/kg, Ø conc.: 89 µg/kg, sample year: 2008/2009, country: Italy¹⁹²

incidence: 28/168, conc. range: ≤139.5 µg/kg, Ø conc.: 78.9 µg/kg, sample year: 2008/2009, country: Spain¹⁴³⁰

FUMONISINS

incidence: ?/6, conc. range: ≤400 µg/kg, sample year: unknown, country: USA³⁵⁷

incidence: 6/6*, conc. range: ≤245 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *gluten-free cornflakes, **bound fumonisins

FUMONISINS (TOTAL)

incidence: 21/47, conc. range: ≤67 µg/kg, Ø conc.: 42 µg/kg, sample year: 2001–2004,

country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina

HT-2 TOXIN

incidence: 4/65, conc. range: ≤65 µg/kg, Ø conc.: 41 µg/kg, sample year: 2008, country: Spain⁹⁷⁷

incidence: 5/6, conc. range: <LOQ, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β-ZEL, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, ZEA, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, and β-ZEL)

T-2 TOXIN

incidence: 1/4** **, conc.: 1,070 µg/kg, sample year: unknown, country: Turkey³³⁶, *bought from market, **those product ingredients were partially processed out of Turkey

incidence: 3/6, conc. range: <LOQ, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, and β-ZEL)

α-ZEARALENOL

incidence: 2/6, conc. range: 26–34 µg/kg, Ø conc.: 30 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated ZEA, α-ZEL, and β-ZEL)

incidence: 31/61, conc. range: ≤515 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

α -ZEARALENOL-4-GLUCOSIDE

incidence: 16/61, conc. range: ≤ 192 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³

 β -ZEARALENOL

incidence: 5/6, conc. range: ≤ 63 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β -ZEL, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, ZEA, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, and β -ZEL, 1 sa co-contaminated ZEA, α -ZEL, and β -ZEL)

incidence: 24/61, conc. range: ≤ 147 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³

 β -ZEARALENOL-4-GLUCOSIDE

incidence: 26/61, conc. range: ≤ 206 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³

ZEARALENONE

incidence: 3/5, conc. range: 3.88–6.81 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Qatar⁸⁷⁸

incidence: ?/3, conc. range: < 10 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Austria/UK⁹²⁷

incidence: 3/5, conc. range: 99.1–127.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 114.1 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain¹⁰⁰⁴

incidence: 5/6, conc. range: 31–90 $\mu\text{g}/\text{kg}$, \emptyset conc.: 59.8 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and β -ZEL, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, ZEA, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, and α -ZEL, 1 sa co-contaminated ZEA, α -ZEL, and β -ZEL)

incidence: 32/61, conc. range: ≤ 450 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³

ZEARALENONE-4-GLUCOSIDE

incidence: 26/61, conc. range: ≤ 369 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³

ZEARALENONE-4-SULFATE

incidence: 15/61, conc. range: ≤ 417 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium¹⁵⁹³

Flakes (maize flakes) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXINS (B₁, B₂, G₁, G₂)**

incidence: 1/5, conc.: 0.25 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 3/5, conc. range: 2.79–5.71 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.41 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 4/6, conc. range: 33–142 $\mu\text{g}/\text{kg}$, \emptyset conc.: 70 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 1/5, conc.: 59.83 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

FUMONISINS (B₁, B₂, B₃)

incidence: 1/5, conc.: 56.89 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

HT-2 TOXIN

incidence: 1/5, conc.: 69.82 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

T-2 TOXIN

incidence: 1/5, conc.: 63.82 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

ZEARALENONE

incidence: 2/6, conc. range: 2–3 µg/kg,
 Ø conc.: 3 µg/kg, sample year: 2000/2001,
 country: Germany⁵²⁰

incidence: 1/5, conc.: 5.17 µg/kg, sample
 year: 2009, country: Malaysia¹⁴²³

Flakes (oat flakes) may contain the
 following mycotoxins:

Alternaria Toxins

ALTERNARIOL METHYL ETHER

incidence: 2/3, conc. range: ~0.2*–0.6** µg/kg,
 sample year: unknown, country:
 Germany¹²¹², *crunchy and **quick
 oat flakes

TENUAZONIC ACID

incidence: 3/4, conc. range: 7–14 µg/kg,
 sample year: unknown, country:
 Germany⁷

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/19, conc. range: 1–5 µg/
 kg, sample year: unknown, country:
 Czechoslovakia³⁹⁵

incidence: 26/66, conc. range: ≤0.251 µg/
 kg, sample year: 1996–1998, country:
 Germany⁶⁹⁰

incidence: 1/12, conc.: 35 µg/kg, sample
 year: 1990–1992, country: Poland¹¹⁵⁶

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/7, conc.: 192 µg/kg, sample
 year: 2004, country: Germany²⁴⁴

incidence: 6/9, conc. range: 11–148 µg/kg,
 Ø conc.: 48 µg/kg, sample year: 2000/2001,
 country: Germany⁵²⁰

incidence: 27/31*, conc. range: ≤55 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 16/23, conc. range: ≤39 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

incidence: 1/5, conc.: 37 µg/kg, sample
 year: 2004, country: UK¹³⁹⁴, sa from
 England, Ireland, Scotland, and Sweden (1 sa
 co-contaminated with DON and HT-2)

incidence: 3/7, conc. range: 48–79 µg/kg, Ø
 conc.: 63.3 µg/kg, sample year: 2005, country:
 UK¹³⁹⁴, sa from England, Finland, and
 Scotland (1 sa co-contaminated with DON,
 HT-2, NIV, and T-2, 2 sa co-contaminated
 with DON, HT-2, and T-2)

3-ACETYLDEOXYNIVALENOL

incidence: 1/9, conc.: 14 µg/kg, sample
 year: 2000/2001, country: Germany⁵²⁰

incidence: 15/31*, conc. range: ≤8.2 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 3/23, conc. range: ≤3.6 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

15-ACETYLDEOXYNIVALENOL

incidence: 10/31*, conc. range: ≤1.3 µg/
 kg, sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 2/23, conc. range: ≤0.58 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 2/31*, conc. range: ≤0.18 µg/
 kg, sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 2/23, conc. range: ≤0.53 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

HT-2 TOXIN

incidence: 7/9, conc. range: 5–19 µg/kg,
 Ø conc.: 8 µg/kg, sample year: 2000/2001,
 country: Germany⁵²⁰

incidence: 31/31*, conc. range: ≤51 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 23/23, conc. range: ≤48 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

incidence: 4/5, conc. range: 10–23 µg/kg, Ø conc.: 16.8 µg/kg, sample year: 2004, country: UK¹³⁹⁴, sa from England, Ireland, Scotland, and Sweden (1 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with HT-2 and T-2, 2 sa contaminated solely with HT-2)

incidence: 6/7, conc. range: 18–41 µg/kg, Ø conc.: 29 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland (1 sa co-contaminated with DON, HT-2, NIV, and T-2, 2 sa co-contaminated with DON, HT-2, and T-2, 1 sa co-contaminated with HT-2 and T-2, 1 sa contaminated solely with HT-2)

incidence: 25/25*, conc. range: ≤51 µg/kg, Ø conc.: 21 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *conventional (25 sa co-contaminated with DAS, 15-AcDON, HT-2, NEO, T-2, and T-2TET; no further information available)

incidence: 18/18*, conc. range: ≤15 µg/kg, Ø conc.: 5.2 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *organic (18 sa co-contaminated with HT-2, NEO, and T-2; no further information available)

MONILIFORMIN

incidence: 3/3, conc. range: 5.4–10.0 µg/kg, Ø conc.: 7.1 µg/kg, sample year: unknown, country: Germany¹⁴⁶¹

NEOSOLANOL

incidence: 30/31*, conc. range: ≤2.7 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *fine oat flakes

incidence: 22/23, conc. range: ≤1.4 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 25/25*, conc. range: ≤2.7 µg/kg, Ø conc.: 0.85 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *conventional (25 sa co-contaminated with DAS, 15-AcDON, HT-2, NEO, T-2, and T-2TET; no further information available)

incidence: 18/18*, conc. range: ≤1.1 µg/kg, Ø conc.: 0.16 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *organic (18 sa

co-contaminated with HT-2, NEO, and T-2; no further information available)

NIVALENOL

incidence: 12/31*, conc. range: ≤17 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *fine oat flakes

incidence: 4/23, conc. range: ≤1.8 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 1/7, conc.: 10 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland (1 sa co-contaminated with DON, HT-2, NIV, and T-2)

MONOACETOXYSCIRPENOL

incidence: 30/31*, conc. range: ≤2.7 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *fine oat flakes

incidence: 21/23, conc. range: ≤0.18 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 24/25*, conc. range: ≤0.66 µg/kg, Ø conc.: 0.13 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *conventional

incidence: 17/18*, conc. range: ≤0.24 µg/kg, Ø conc.: 0.08 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *organic

DIACETOXYSCIRPENOL

incidence: 22/31*, conc. range: ≤0.38 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *fine oat flakes

incidence: 15/23, conc. range: ≤0.17 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 25/25*, conc. range: ≤0.38 µg/kg, Ø conc.: 0.11 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *conventional (25 sa co-contaminated with DAS, 15-AcDON, HT-2, NEO, T-2, and T-2TET; no further information available)

incidence: 12/18*, conc. range: ≤0.14 µg/kg, Ø conc.: 0.04 µg/kg, sample year: 2005, country: Germany¹⁵²¹, *organic

T-2 TOXIN

incidence: 2/9, conc. range: 6–12 µg/kg,
 Ø conc.: 8 µg/kg, sample year: 2000/2001,
 country: Germany⁵²⁰

incidence: 31/31*, conc. range: ≤34 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 23/23, conc. range: ≤17 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

incidence: 1/5, conc.: 14 µg/kg, sample
 year: 2004, country: UK¹³⁹⁴, sa from
 England, Ireland, Scotland, and Sweden
 (1 sa co-contaminated with HT-2 and T-2)

incidence: 4/7, conc. range: 12–18 µg/kg,
 Ø conc.: 15.5 µg/kg, sample year: 2005,
 country: UK¹³⁹⁴, sa from England, Finland,
 and Scotland (1 sa co-contaminated with
 DON, HT-2, NIV, and T-2, 2 sa
 co-contaminated with DON, HT-2,
 and T-2, 1 sa co-contaminated with HT-2
 and T-2)

incidence: 25/25*, conc. range: ≤34 µg/kg,
 Ø conc.: 9.8 µg/kg, sample year: 2005,
 country: Germany¹⁵²¹, *conventional (25
 sa co-contaminated with DAS, 15-AcDON,
 HT-2, NEO, T-2, and T-2TET; no further
 information available)

incidence: 18/18*, conc. range: ≤5.2 µg/
 kg, Ø conc.: 1.7 µg/kg, sample year: 2005,
 country: Germany¹⁵²¹, *organic (18 sa
 co-contaminated with HT-2, NEO, and
 T-2; no further information available)

T-2 TETRAOL

incidence: 29/31*, conc. range: ≤34 µg/
 kg, sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 20/23, conc. range: ≤27 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

incidence: 25/25*, conc. range: ≤34 µg/kg,
 Ø conc.: 14 µg/kg, sample year: 2005,
 country: Germany¹⁵²¹, *conventional (25
 sa co-contaminated with DAS, 15-AcDON,

HT-2, NEO, T-2, and T-2TET; no further
 information available)

incidence: 14/18*, conc. range: ≤27 µg/
 kg, Ø conc.: 5.2 µg/kg, sample year:
 2005, country: Germany¹⁵²¹, *organic

T-2 TRIOL

incidence: 23/31*, conc. range: ≤2.7 µg/
 kg, sample year: 2005/2006, country:
 Germany¹¹²², *fine oat flakes

incidence: 12/23, conc. range: ≤1.5 µg/kg,
 sample year: 2005/2006, country:
 Germany¹¹²²

incidence: 21/25*, conc. range: ≤2.7 µg/kg,
 Ø conc.: 0.85 µg/kg, sample year: 2005,
 country: Germany¹⁵²¹, *conventional

incidence: 7/18*, conc. range: ≤1.1 µg/
 kg, Ø conc.: 0.18 µg/kg, sample year:
 2005, country: Germany¹⁵²¹, *organic

Flakes (wheat flakes) may contain
 the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 16/20, conc. range: 101–
 1,000 µg/kg (14 sa), 1,001–5,000 µg/kg
 (2 sa), sample year: unknown, country:
 Portugal³¹⁵

incidence: 20/27, conc. range: ≤437 µg/kg,
 Ø conc.: 190 µg/kg, sample year: 2008,
 country: Spain⁹⁷⁷

HT-2 TOXIN

incidence: 4/27, conc. range: ≤183 µg/
 kg, Ø conc.: 87 µg/kg, sample year: 2008,
 country: Spain⁹⁷⁷

T-2 TOXIN

incidence: 2/27, conc. range: 69–75 µg/
 kg, Ø conc.: 72 µg/kg, sample year: 2008,
 country: Spain⁹⁷⁷

ZEARALENONE

incidence: 4/29, conc. range: ≤12.1 µg/kg,
 Ø conc.: 6.3 µg/kg*, sample year: 2008,
 country: Spain¹⁵³⁵, *of pos sa?

Flour may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1*/?, conc.: tr, sample year: 1979, country: Kenya⁷⁴⁶, *Jembe backing flour

AFLATOXIN B₂

incidence: 1*/?, conc.: tr, sample year: 1979, country: Kenya⁷⁴⁶, *Jembe backing flour

AFLATOXIN G₂

incidence: 2/8*, conc. range: <LOQ–1.2 µg/kg, sample year: unknown, country: Spain¹³⁸¹, *cereal flours for muffins, bread, pizza or similar (bakery preparation)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/7*, conc. range: 490–2,900 µg/kg, Ø conc.: 1,695 µg/kg, sample year: unknown, country: UK⁶⁴⁹, *moldy

incidence: 12/14*, conc. range: 0.2–0.5 µg/kg (7 sa), 0.6–1.0 µg/kg (3 sa), 1.1–4.0 µg/kg (1 sa), 5.3 µg/kg (1 sa), sample year: unknown, country: UK⁷⁴⁰, *flour for baking

incidence: 28/57, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 2.0 µg/kg), sample year: 1991, country: EU¹⁰³⁴, sa from UK

incidence: 49/57, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 1.6 µg/kg), sample year: 1992, country: EU¹⁰³⁴, sa from UK

incidence: 48/61, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 3.2 µg/kg), sample year: 1993, country: EU¹⁰³⁴, sa from UK

incidence: 21/31, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 1.0 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa from UK

incidence: 1/8*, conc.: <LOQ, sample year: unknown, country: Spain¹³⁸¹, *cereal flours for muffins, bread, pizza or similar (bakery preparation)

Claviceps Toxins

ERGOCORNINE

incidence: 2/2*, conc. range: 0.57–1.35 µg/kg**, Ø conc.: 0.96 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *enriched flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

ERGOCRISTINE

incidence: 2/2*, conc. range: 2.8–4.3 µg/kg**, Ø conc.: 3.55 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *enriched flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

ERGOMETRINE

incidence: 2/2*, conc. range: 0.54–0.63 µg/kg**, Ø conc.: 0.585 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *enriched flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

ERGOSINE

incidence: 2/2*, conc. range: tr–1.2 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *enriched flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

ERGOTAMINE

incidence: 2/2*, conc. range: 0.93–3.9 µg/kg**, Ø conc.: 2.057 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *enriched flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

α-ERGOKRYPTINE

incidence: 2/2*, conc. range: 0.78–1.3 µg/kg**, Ø conc.: 1.04 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *enriched flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

Fusarium Toxins

BEAUVERICIN

incidence: 2/4* **, conc. range: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours,

**conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and MON)
 incidence: 5/6* **, conc. range: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours,
 **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁, 2 sa co-contaminated with BEA, DON, ENB, and ENB₁)
 incidence: 3/8*, conc. range: 115–705 µg/kg, sample year: unknown, country: Spain¹³⁸¹,
 *cereal flours for muffins, bread, pizza or similar (bakery preparation)

DEOXYNIVALENOL

incidence: 1/20, conc.: 188 µg/kg, sample year: unknown, country: Egypt⁴²⁷
 incidence: 105/134*, conc. range: 15–624 µg/kg, Ø conc.: 90 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *white flour
 incidence: 51/77*, conc. range: 15–1,670 µg/kg, Ø conc.: 130 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *whole grain flour
 incidence: 44/50, conc. range: ≤500 µg/kg, sample year: 1983, country: USA⁵⁶¹
 incidence: 2/2*, conc. range: 23–720 µg/kg, Ø conc.: 371 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *wholemeal self-raising flour
 incidence: 2/2*, conc. range: 91–1,460 µg/kg, Ø conc.: 775 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *wholemeal plain flour
 incidence: 16/17*, conc. range: 13–350 µg/kg, Ø conc.: 125 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *white-flour products
 incidence: 32/36*, conc. range: 13–431 µg/kg, Ø conc.: 139 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *mixed-flour products

incidence: 16/22*, conc. range: 28–594 µg/kg, Ø conc.: 103 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 36/40*, conc. range: 10–100 µg/kg (33 sa), >100–250 µg/kg (2 sa), 531 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶, *different kinds of flours (14 sa co-contaminated with DON and NIV, 22 sa contaminated solely with DON)

incidence: ?/103, conc. range: ≤2,270 µg/kg, Ø conc.: 230 µg/kg*, sample year: unknown, country: Germany⁹⁴⁵, *of pos sa?

incidence: 4/4* **, conc. range: <10–42 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours,
 **conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

incidence: 6/6* **, conc. range: <10–107 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours,
 **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁, 2 sa co-contaminated with BEA, DON, ENB, and ENB₁)

incidence: 2/8*, conc. range: 32.5–180 µg/kg, Ø conc.: 106.25 µg/kg, sample year: unknown, country: Spain¹³⁸¹, *cereal flours for muffins, bread, pizza or similar (bakery preparation)

incidence: 2/2* **, conc. range: 5.5–6.3 µg/kg, Ø conc.: 5.9 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac, **barley and oat flour (2 sa co-contaminated with DON and DON3G)

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 14/17*, conc. range: 5–30 µg/kg, Ø conc.: 15 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *white-flour products

incidence: 28/36*, conc. range: 7–41 µg/kg, Ø conc.: 19 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *mixed-flour products

incidence: 15/22*, conc. range: 5–72 µg/kg, Ø conc.: 15 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 2/2* **, conc. range: 1.3–1.8 µg/kg, Ø conc.: 1.55 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac, **barley and oat flour (2 sa co-contaminated with DON and DON3G)

ENNIATIN A

incidence: 16/17*, conc. range: 23–325 µg/kg, Ø conc.: 112 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *white-flour products

incidence: 35/36*, conc. range: 31–1,493 µg/kg, Ø conc.: 230 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *mixed-flour products

incidence: 21/22*, conc. range: 27–2,532 µg/kg, Ø conc.: 300 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 3/4* **, conc. range: <0.6–10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flour, **conventional s (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

incidence: 3/6* **, conc. range: <0.6–5 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2,

and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

ENNIATIN A₁

incidence: 11/17*, conc. range: 6–39 µg/kg, Ø conc.: 17 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *white-flour products

incidence: 14/36*, conc. range: 6–851 µg/kg, Ø conc.: 77 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *mixed-flour products

incidence: 16/22*, conc. range: 7–100 µg/kg, Ø conc.: 21 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 4/4* **, conc. range: <4–20 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours,

**conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

incidence: 4/6* **, conc. range: <4–15 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

ENNIATIN B

incidence: 16/17*, conc. range: 15–89 µg/kg, Ø conc.: 40 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *white-flour products

incidence: 35/36*, conc. range: 22–227 µg/kg, Ø conc.: 62 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *mixed-flour products

incidence: 21/22*, conc. range: 26–256 µg/kg, Ø conc.: 59 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 4/4* **, conc. range: <3.8–170 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

incidence: 6/6* **, conc. range: <3.8–99 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁, 2 sa co-contaminated with BEA, DON, ENB, and ENB₁)

ENNIATIN B₁

incidence: 13/17*, conc. range: 9–82 µg/kg, Ø conc.: 20 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *white-flour products

incidence: 33/36*, conc. range: 8–115 µg/kg, Ø conc.: 33 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸, *mixed-flour products

incidence: 21/22*, conc. range: 7–71 µg/kg, Ø conc.: 22 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 4/4* **, conc. range: <10.8–71 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **conventional (1 sa co-contaminated with BEA, DON, ENA, ENA, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁, 1 sa

co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

incidence: 6/6* **, conc. range: <10.8–50 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁, 2 sa co-contaminated with BEA, DON, ENB, and ENB₁)

FUMONISIN B₁

incidence: 2/6*, conc. range: ≤tr, sample year: 1995, country: Netherlands³⁸⁰, *included children breakfast porridge

FUMONISIN B₂

incidence: 1/8*, conc.: <LOQ, sample year: unknown, country: Spain¹³⁸¹, *cereal flours for muffins, bread, pizza or similar (bakery preparation)

FUMONISINS (B₁, B₂, B₃)

incidence: 6/8, conc. range: 150–2,400 µg/kg, Ø conc.: 800 µg/kg, sample year: 1997, country: USA/Nepal¹⁵⁵², sa from Nepal

incidence: 7/7*, conc. range: ≤3,310 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *gluten-free flours, **free fumonisins

HYDROLIZED FUMONISINS (HFB₁, HFB₂, HFB₃)

incidence: 7/7*, conc. range: ≤621 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *gluten-free flours, **free fumonisins

FUMONISINS

incidence: 2/4*, conc. range: 122–210 µg/kg, Ø conc.: 166 µg/kg, country: Italy¹⁴⁶⁵, *gluten-free flour

HT-2 TOXIN

incidence: 0/4* **, conc. range: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **conventional

incidence: 1/6* **, conc.: <20 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2, and MON)

MONILIFORMIN

incidence: 2/4* **, conc. range: <20–42 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with DON, ENA, ENA₁, ENB, ENB₁, and MON) incidence: 2/6* **, conc. range: 21–25 µg/kg, Ø conc.: 23 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *different kinds of flours, **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, HT-2, and MON, 1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and MON)

NIVALENOL

incidence: 1/2*, conc.: 13 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *wholemeal self-raising flour
incidence: 1/2*, conc.: 1,375 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *wholemeal plain flour
incidence: 1/36*, conc.: pr, sample year: 2010, country: Czech Republic⁶⁸⁸, *mixed-flour products
incidence: 14/40*, conc. range: 11–21 µg/kg, sample year: 2000/2001, country: UK⁸³⁶, *different kinds of flours (14 sa co-contaminated with DON and NIV)
incidence: 1/8*, conc.: 76 µg/kg, sample year: unknown, country: Spain¹³⁸¹, *cereal flours for muffins, bread, pizza or similar (bakery preparation)

8-KETOTRICHOTHECENE

incidence: 1/8, conc.: 3,000 µg/kg, sample year: 1997, country: USA/Nepal¹⁵⁵², sa from Nepal

T-2 TOXIN

incidence: 1/20, conc.: 2.2 µg/kg, sample year: unknown, country: Egypt⁴²⁷
incidence: ?/103, conc. range: ≤0.95 µg/kg, Ø conc.: <0.2 µg/kg*, sample year: unknown, country: Germany⁹⁴⁵, *of pos sa?

ZEARALENONE

incidence: 4/20, conc. range: 95 µg/kg, sample year: unknown, country: Egypt⁴²⁷
incidence: 2/2*, conc. range: 1,450–2,150 µg/kg, Ø conc.: 1,800 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *wholemeal self-raising flour
incidence: 2/2*, conc. range: 1,400–2,570 µg/kg, Ø conc.: 1,985 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *wholemeal plain flour

Flour (barley flour) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₂

incidence: 1/1, conc.: 0.07 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₁

incidence: 1/1, conc.: 2.79 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₂, AFG₁, AFG₂, and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 4.07 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₂, AFG₁, AFG₂, and OTA)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/6, conc. range: 8–39 µg/kg,
 Ø conc.: 23 µg/kg, sample year: 1982–1985,
 country: Japan⁵³¹, sa from unknown origin
 (3 sa co-contaminated with DON, NIV,
 and ZEA)

incidence: 6/6*, conc. range: 27–85 µg/kg,
 Ø conc.: 53.8 µg/kg, sample year:
 unknown, country: Japan⁵⁷², *parched-
 barley flours (6 sa co-contaminated with
 DON and NIV)

NIVALENOL

incidence: 6/6, conc. range: 13–41 Ø
 conc.: 28 µg/kg, year: 1982–1985, country:
 Japan⁵³¹, sa from unknown origin (3 sa co-
 contaminated with DON, NIV, and ZEA, 3
 sa co-contaminated with NIV and ZEA)

incidence: 6/6*, conc. range: 37–190 µg/kg,
 Ø conc.: 97.7 µg/kg, sample year:
 unknown, country: Japan⁵⁷², *parched-
 barley flours (6 sa co-contaminated with
 DON and NIV)

ZEARALENONE

incidence: 6/6, conc. range: 1–4 µg/kg, Ø
 conc.: 2 µg/kg, sample year: 1982–1985,
 country: Japan⁵³¹, sa from unknown origin
 (3 sa co-contaminated with DON, NIV,
 and ZEA, 3 sa co-contaminated with NIV
 and ZEA)

see also Meal (barley meal)

Flour (buckwheat flour) may
 contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/2, conc. range: 0.55–0.62 µg/
 kg, Ø conc.: 0.585 µg/kg, sample year:
 unknown, country: Japan¹⁰²⁵ (2 sa co-
 contaminated with CIT and OTA)

OCHRATOXIN A

incidence: 15/35, conc. range: ≤1.79 µg/
 kg, Ø conc.: 0.50 µg/kg, sample year:
 2004–2006, country: Japan⁹⁰⁰

incidence: 2/2, conc. range: 0.12–0.45 µg/
 kg, Ø conc.: 0.285 µg/kg, sample year:
 unknown, country: Japan¹⁰²⁵ (2 sa
 co-contaminated with CIT and OTA)

incidence: 8/10, conc. range: 0.16–1.79 µg/
 kg, Ø conc.: 0.51 µg/kg, sample year:
 2004/2005, country: Japan¹²¹⁵

see also Meal (buckwheat meal)

Flour (cassava flour) may contain
 the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/4, conc. range: ≤9 µg/
 kg, sample year: unknown, country:
 Belgium¹⁰³⁹, sa from Benin (1 sa co-
 contaminated with AFB₁, AFB₂, DAS, FB₁,
 and ZEA, 1 sa co-contaminated with AFB₁,
 DAS, FB₁, and ZEA, 1 sa co-contaminated
 with AFB₁, FB₁, and ZEA)

incidence: 3/3, conc. range: 0.32–1.64 µg/kg,
 sample year: unknown, country: Nigeria/
 Benin/Tanzania¹⁶⁶⁰, sa from Congo

AFLATOXIN B₂

incidence: 2/4, conc. range: 4–8 µg/kg,
 Ø conc.: 6 µg/kg, sample year: unknown,
 country: Belgium¹⁰³⁹, sa from Benin (1 sa
 co-contaminated with AFB₁, AFB₂, DAS,
 FB₁, and ZEA, 1 sa co-contaminated with
 AFB₂, DAS, and FB₁)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/33*, conc. range: 32–65 µg/
 kg, Ø conc.: 48.5 µg/kg, sample year:
 1985/1986, country: Brazil⁸¹⁶, *raw cassava
 flour

Fusarium ToxinsFUMONISIN B₁

incidence: 4/4, conc. range: 4–21 µg/kg,
 Ø conc.: 9.5 µg/kg, sample year: unknown,
 country: Belgium¹⁰³⁹, sa from Benin (1 sa
 co-contaminated with AFB₁, AFB₂, DAS,
 FB₁, and ZEA, 1 sa co-contaminated with
 AFB₁, DAS, FB₁, and ZEA, 1 sa

co-contaminated with AFB₂, DAS, and FB₁, 1 sa co-contaminated with AFB₁, FB₁, and ZEA)

DIACETOXYSCIRPENOL

incidence: 3/4, conc. range: 1–9 µg/kg, Ø conc.: 5 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin (1 sa co-contaminated with AFB₁, AFB₂, DAS, FB₁, and ZEA, 1 sa co-contaminated with AFB₁, DAS, FB₁, and ZEA, 1 sa co-contaminated with AFB₂, DAS, and FB₁)

ZEARALENONE

incidence: 3/4, conc. range: 6–12 µg/kg, Ø conc.: 9 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin (1 sa co-contaminated with AFB₁, AFB₂, DAS, FB₁, and ZEA, 1 sa co-contaminated with AFB₁, DAS, FB₁, and ZEA, 1 sa co-contaminated with AFB₁, FB₁, and ZEA)

Flour (graham flour) may contain the following mycotoxins:

Claviceps Toxins

ERGOCORNINE

incidence: 1/1, conc.: 4.0 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (1 sa co-contaminated with ERC, ERRCR, α-ERK, ERM, ERS, and ERT)

ERGOCRISTINE

incidence: 1/1, conc.: 21.2 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (1 sa co-contaminated with ERC, ERRCR, α-ERK, ERM, ERS, and ERT)

ERGOMETRINE

incidence: 1/1, conc.: 2.3 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (1 sa co-contaminated with ERC, ERRCR, α-ERK, ERM, ERS, and ERT)

ERGOSINE

incidence: 1/1, conc.: 5.4 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (1 sa co-contaminated with ERC, ERRCR, α-ERK, ERM, ERS, and ERT)

ERGOTAMINE

incidence: 1/1, conc.: 12.15 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (1 sa co-contaminated with ERC, ERRCR, α-ERK, ERM, ERS, and ERT)

α-ERGOKRYPTINE

incidence: 1/1, conc.: 6.2 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (1 sa co-contaminated with ERC, ERRCR, α-ERK, ERM, ERS, and ERT)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/5, conc.: 981 µg/kg, sample year: 2007/2008, country: Hungary⁸⁹¹

Flour (gram flour) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 36/127, conc. range: <20 µg/kg (4 sa), 21–80 µg/kg (3 sa), 81–120 µg/kg (1 sa), 121–250 µg/kg (18 sa), 251–500 µg/kg (5 sa), 501–750 µg/kg (5 sa), sample year: 1987–1989, country: India³⁰¹

AFLATOXIN B₂

incidence: 9/127, conc. range: 21–80 µg/kg (2 sa), 81–120 µg/kg (2 sa), 121–250 µg/kg (5 sa), sample year: 1987–1989, country: India³⁰¹

Flour (lentil flour) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 0.57 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN B₂

incidence: 1/1, conc.: 0.05 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₁

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.06 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 0.83 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Flour (maize flour) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/2*, conc.: 15 µg/kg, sample year: unknown, country: Spain¹⁵⁷, *whole maize flour

incidence: 72/124, conc. range: <20 µg/kg (5 sa), 21–80 µg/kg (9 sa), 81–120 µg/kg (6 sa), 121–250 µg/kg (12 sa), 251–500 µg/kg (21 sa), 501–750 µg/kg (9 sa), 751–1,000 µg/kg (2 sa), 1,000–2,000 µg/kg (7 sa), >2,000 µg/kg (1 sa), sample year: 1987–1989, country: India³⁰¹

incidence: 1/5, conc.: 15 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (1 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 1/4, conc.: 31 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (1 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 11/11*, conc. range: 3.7–37 µg/kg, Ø conc.: 18.95 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², *corn as raw

material imported from Thailand (11 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 10/?, conc. range: 5–210 µg/kg, Ø conc.: 47 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 16/20, conc. range: 0.23–11.2 µg/kg, sample year: unknown, country: Morocco/Spain⁷⁹², sa from Morocco

incidence: 1/2, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

incidence: 1*/1*, conc.: 2.19 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, *sa from Colombia (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 1/2*, conc.: 4 µg/kg, sample year: unknown, country: Spain¹⁵⁷, *whole maize flour

incidence: 35/124, conc. range: 21–80 µg/kg (4 sa), 81–120 µg/kg (3 sa), 121–250 µg/kg (18 sa), 251–500 µg/kg (8 sa), 501–750 µg/kg (2 sa), sample year: 1987–1989, country: India³⁰¹

incidence: 1/5, conc.: 5.2 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (1 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 1/4, conc.: 5.3 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (1 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 11/11*, conc. range: 2.3–9.9 µg/kg, Ø conc.: 5.96 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², *corn as raw

material imported from Thailand (11 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 9/?, conc. range: tr–80 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 16/20, conc. range: 0.03–1.05 µg/kg, sample year: unknown, country: Morocco/Spain⁷⁹², sa from Morocco

incidence: 2/2, conc. range: 0.03–0.06 µg/kg, Ø conc.: 0.045 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₂ and AFG₂)

incidence: 1*/1*, conc.: 0.16 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, *sa from Colombia (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 8/124, conc. range: 121–250 µg/kg (1 sa), 251–500 µg/kg (1 sa), 501–750 µg/kg (4 sa), 1,000–2,000 µg/kg (2 sa), sample year: 1987–1989, country: India³⁰¹

incidence: 2/?, conc. range: 10 µg/kg, Ø conc.: 10 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 16*/20, conc. range: 0.21–0.41 µg/kg, sample year: unknown, country: Morocco/Spain⁷⁹², sa from Morocco

incidence: 1/2, conc.: 0.05 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₂

incidence: 2/?, conc. range: 5 µg/kg, Ø conc.: 5 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 16*/20, conc. range: 0.1–0.24 µg/kg, sample year: unknown, country: Morocco/Spain⁷⁹², sa from Morocco

incidence: 2/2, conc. range: 0.05–0.10 µg/kg, Ø conc.: 0.075 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₂ and AFG₂)

AFLATOXIN

incidence: 10/30*, conc. range: 1–5 µg/kg (6 sa), 5–10 µg/kg (3 sa), >10 µg/kg (11 sa, maximum: 14 µg/kg), sample year:

unknown, country: India¹⁹⁴, *uncooked maize flour

incidence: 4/67*, conc. range: ≤5–10 µg/kg, sample year: 1983–1985, country: Venezuela¹³⁶⁵, *precooked corn flour (white)

incidence: 2/23*, conc. range: ≤5–10 µg/kg, sample year: 1983–1985, country: Venezuela¹³⁶⁵, *precooked corn flour (yellow)

AFLATOXINS (B₁, B₂)

incidence: ?/172, conc. range: 0.4–20 µg/kg, sample year: unknown, country: Kenya²⁷³

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: ?/4, conc. range: 0.2–0.7 µg/kg, sample year: unknown, country: UK⁷³²

AFLATOXINS (TOTAL)

incidence: 12/90, conc. range: ≤7.5 µg/kg, Ø conc.: 4.9 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina

AFLATOXINS

incidence: 14/30, conc. range: 0.19–4.4 µg/kg, sample year: 2009, country: Spain⁴⁹⁹, sa from different countries (4 sa co-contaminated with AFS and OTA)

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/5, conc.: 27 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (1 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 1/4, conc.: 73 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (1 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 11/11*, conc. range: 10–98 µg/kg, Ø conc.: 58.9 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², *corn as raw material imported from Thailand (11 sa co-contaminated with AFB₁, AFB₂, and CIT)

OCHRATOXIN A

incidence: 1/17, conc.: 64 µg/kg, sample year: 2002/2003, country: Brazil²³⁰

incidence: ?/172, conc. range: 50–1,500 µg/kg, sample year: unknown, country: Kenya²⁷³

incidence: 4/30, conc. range: 0.79–1.71 µg/kg, sample year: 2009, country: Spain⁴⁹⁹, sa from different countries (4 sa co-contaminated with AFS and OTA)

incidence: 1/4, conc.: 0.6 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 1/2, conc.: 0.47 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

incidence: 4/4, conc. range: 0.3–0.6 µg/kg, sample year: 1994, country: EU¹⁰³⁴, sa from UK

Fusarium Toxins

BEAUVERICIN

incidence: 2/4, conc. range: ≤25 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin (2 sa co-contaminated with BEA, FB₁, FB₂, and FB₃)

DEOXYNIVALENOL

incidence: 13/15, conc. range: 20–452 µg/kg, Ø conc.: 160 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

incidence: 6/8, conc. range: 20–98 µg/kg, Ø conc.: 51 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: ?/4, conc. range: 17–67 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 2/2*, conc. range: 220–2,670 µg/kg, Ø conc.: 1,445 µg/kg, sample year: unknown, country: Turkey⁸⁶³,

*sa bought from bazaar

incidence: 2/5*, conc. range: 140–600 µg/kg, Ø conc.: 370 µg/kg, sample year: unknown, country: Turkey⁸⁶³,

*sa bought from market

incidence: 1/2, conc.: 240 µg/kg, sample year: 1981, country: UK¹²⁴³

incidence: 5/5, conc.: 20–50 µg/kg, sample year: 1982, country: UK¹²⁴³

incidence: 1/11*, conc.: 167 µg/kg, sample year: 2001/2002, country: Brazil¹²⁷⁵, *pre-cooked corn flour (1 sa co-contaminated with DON and NIV)

incidence: 3/3, conc. range: 100–200 µg/kg (maximum: 170.3 µg/kg), Ø conc.: 128.1 µg/kg, sample year: unknown, country: Indonesia/Austria¹⁶²⁶, sa from Indonesia

3-ACETYLDEOXYNIVALENOL

incidence: 2/15, conc. range: 14–25 µg/kg, Ø conc.: 20 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

15-ACETYLDEOXYNIVALENOL

incidence: 10/15, conc. range: 11–73 µg/kg, Ø conc.: 40 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

incidence: 3/8, conc. range: 11–30 µg/kg, Ø conc.: 19 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

FUMONISIN B₁

incidence: 9/11, conc. range: ≤1,460 µg/kg, Ø conc.: 740 µg/kg, sample year: 1999, country: Brazil²¹⁵

incidence: 1/2*, conc.: 440 µg/kg, sample year: 1999, country: Brazil²¹⁵, *corn flour baby cereal

incidence: 4/6*, conc. range: ≤1,790 µg/kg, Ø conc.: 1,260 µg/kg, sample year: 1999, country: Brazil²¹⁵, *precooked maize flour

incidence: 14/15*, conc. range: 38–1,860 µg/kg, Ø conc.: 365.3 µg/kg, sample year: 1996/1997, country: Brazil/Argentina³⁶⁶, sa from Argentina, *included one (corn flour) baby cereal with no contamination (11 sa co-contaminated with FB₁ and FB₂, 3 sa contaminated solely with FB₁)

incidence: 14/14*, conc. range: 68–4,987 µg/kg, Ø conc.: 882.1 µg/kg, sample year: 1998, country: Brazil/Argentina³⁶⁶, sa from Argentina, *included one (corn flour) baby cereal (13 sa co-contaminated with FB₁ and FB₂, 1 sa contaminated solely with FB₁)

incidence: 5/7, conc. range: 40–90 µg/kg, Ø conc.: 58 µg/kg, sample year: 1995, country: Netherlands³⁸⁰

incidence: 6/8, conc. range: 17–86 µg/kg, sample year: 1996, country: Denmark³⁸⁵

incidence: 1/3, conc.: 70 µg/kg, sample year: 1993, country: Spain⁴⁰⁴

incidence: 1/2, conc.: 608 µg/kg, sample year: unknown, country: Taiwan⁴¹⁸

incidence: 8/24, conc. range: 38.71–937.5 µg/kg, Ø conc.: 362.68 µg/kg, sample year: 1998–2000, country: Spain⁴²¹

incidence: 30/30, conc. range: 470–7,200 µg/kg, Ø conc.: 2,110 µg/kg, sample year: 2000, country: Brazil⁹⁴⁶

incidence: 12/12*, conc. range: 109–1,600 µg/kg, Ø conc.: 358 µg/kg, sample year: 1999, country: Argentina⁹⁵⁵, *"C" flour

incidence: 21/21*, conc. range: 35–1,960 µg/kg, Ø conc.: 449 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, **beiju* (precooked flour)

incidence: 21/21*, conc. range: 188–1,360 µg/kg, Ø conc.: 696 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, **milharina* (precooked

incidence: 23/25*, conc. range: 145–16,455 µg/kg, sample year: 2001, country: Brazil⁹⁶⁰, *industrialized, different types of flour (15 sa co-contaminated with FB₁ and FB₂, 8 sa contaminated solely with FB₁)

incidence: 21/22*, conc. range: 86–15,038 µg/kg, sample year: 2001, country: Brazil⁹⁶⁰, *home processed, different types of flour (10 sa co-contaminated with FB₁ and FB₂, 11 sa contaminated solely with FB₁)

incidence: 2/2, conc. range: 170–200 µg/kg, Ø conc.: 185 µg/kg, sample year: 2001, country: Bulgaria/Belgium¹⁰⁰⁸, sa from Bulgaria

incidence: 4/4, conc. range: 13–836 µg/kg, Ø conc.: 380.25 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from

Benin (2 sa co-contaminated with BEA, FB₁, FB₂, and FB₃, 2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 8/23, conc. range: 1,000–2,600 µg/kg, Ø conc.: 1,412.5 µg/kg, sample year: unknown, country: Argentina¹²²⁴

incidence: 2/3, conc. range: ≤1,569 µg/kg, sample year: 2005, country: Portugal¹²⁵⁰

incidence: 5/9, conc. range: 258–922 µg/kg, Ø conc.: 455 µg/kg, sample year: 2006, country: Portugal/Spain¹²⁵², sa from Spain

incidence: 5/12, conc. range: 90.89–439.67 µg/kg, Ø conc.: 267.35 µg/kg, sample year: unknown, country: Korea¹⁴⁰⁶

FUMONISIN B₂

incidence: 9/11, conc. range: ≤510 µg/kg, Ø conc.: 270 µg/kg, sample year: 1999, country: Brazil²¹⁵

incidence: 1/2*, conc.: 50 µg/kg, sample year: 1999, country: Brazil²¹⁵, *corn flour baby cereal

incidence: 4/6*, conc. range: ≤420 µg/kg, Ø conc.: 310 µg/kg, sample year: 1999, country: Brazil²¹⁵, *precooked maize flour

incidence: 11/15*, conc. range: 20–768 µg/kg, Ø conc.: 153.6 µg/kg, sample year: 1996/1997, country: Brazil/Argentina³⁶⁶, sa from Argentina, *included one (corn flour) baby cereal with no contamination (11 sa co-contaminated with FB₁ and FB₂)

incidence: 13/14*, conc. range: 15–1,818 µg/kg, Ø conc.: 331.2 µg/kg, sample year: 1998, country: Brazil/Argentina³⁶⁶, sa from Argentina, *included one (corn flour) baby cereal (13 sa co-contaminated with FB₁ and FB₂)

incidence: 6/8, conc. range: 7–24 µg/kg, sample year: 1996, country: Denmark³⁸⁵

incidence: 30/30, conc. range: 120–1,760 µg/kg, Ø conc.: 670 µg/kg, sample year: 2000, country: Brazil⁹⁴⁶

incidence: 12/12*, conc. range: 30–577 µg/kg, Ø conc.: 122 µg/kg, sample year: 1999, country: Argentina⁹⁵⁵, **“C”* flour

incidence: 21/21*, conc. range: tr–534 µg/kg, Ø conc.: 204 µg/kg, sample year: 2003–2005, country: Brazil¹⁹⁵⁸, **beiju* (precooked flour)

incidence: 21/21*, conc. range: 149–1,020 µg/kg, Ø conc.: 397 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, **milharina* (precooked

incidence: 15/25*, conc. range: 67–5,466 µg/kg, sample year: 2001, country: Brazil⁹⁶⁰, **industrialized*, different types of flour (15 sa co-contaminated with FB₁ and FB₂)

incidence: 10/22*, conc. range: 60–4,184 µg/kg, sample year: 2001, country: Brazil⁹⁶⁰, **home processed*, different types of flour (10 sa co-contaminated with FB₁ and FB₂)

incidence: 4/4, conc. range: 5–221 µg/kg, Ø conc.: 107.25 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹, sa from Benin (2 sa co-contaminated with BEA, FB₁, FB₂, and FB₃, 2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 4/23, conc. range: 100–500 µg/kg, Ø conc.: 300 µg/kg, country: Argentina¹²²⁴

incidence: 2/3, conc. range: ≤457 µg/kg, sample year: 2005, country: Portugal¹²⁵⁰

incidence: 5/9, conc. range: 156–644 µg/kg, Ø conc.: 336 µg/kg, country: Portugal/Spain¹²⁵², sa from Spain

incidence: 2/9, conc. range: 230–468 µg/kg, Ø conc.: 349 µg/kg, sample year: unknown, country: Spain¹³⁸¹

FUMONISIN B₃

incidence: 12?/12*, conc. range: 0.1–230 µg/kg, Ø conc.: 45.9 µg/kg, sample year: 1999, country: Argentina⁹⁵⁵, **“C”* flour

incidence: 4/4, conc. range: ≤375 µg/kg, sample year: unknown, country: Belgium¹⁰³⁹,

sa from Benin (2 sa co-contaminated with BEA, FB₁, FB₂, and FB₃, 2 sa co-contaminated with FB₁, FB₂, and FB₃)

FUMONISINS (B₁, B₂)

incidence: 1/4, conc.: 218 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 8/8, conc. range: 111–2,309 µg/kg, Ø conc.: 914 µg/kg, sample year: 2008/2009, country: Italy¹⁹²

FUMONISINS (B₁, B₂, B₃)

incidence: 12/12, conc. range: 200–1,100 µg/kg, Ø conc.: 375 µg/kg, sample year: 1993, country: USA³⁷⁰

FUMONISINS

incidence: 22/22*, conc. range: 14–487 µg/kg, Ø conc.: 187 µg/kg, sample year: 1995/1996, country: Czech Republic⁶⁷⁰, **gluten-free corn flour*

FUMONISINS (TOTAL)

incidence: 90/90, conc. range: 892–6,307 µg/kg, Ø conc.: 2,640 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa

(batches of whole corn) from Argentina
incidence: 16/37, conc. range: 800–273,000 µg/kg, Ø conc.: 61,000 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 2/15, conc. range: 29 µg/kg, Ø conc.: 29 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

HT-2 TOXIN

incidence: 4/15, conc. range: 5 µg/kg, Ø conc.: 5 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

MONILIFORMIN

incidence: 3/6, conc. range: 100–250 µg/kg, Ø conc.: 160 µg/kg, sample year: 1990, country: UK/Poland⁵²⁴, sa from UK, USA and unknown origin

incidence: 9/9, conc. range: 33–285 µg/kg, Ø conc.: 141 µg/kg, sample year: unknown, country: UK⁷⁴³

incidence: 1/1, conc.: 126 µg/kg, sample year: unknown, country: Germany¹⁴⁶¹

NIVALENOL

incidence: 4/15, conc. range: 22–58 µg/kg, Ø conc.: 39 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

incidence: 1/11*, conc.: 166 µg/kg, sample year: 2001/2002, country: Brazil¹²⁷⁵, *pre-cooked corn flour (1 sa co-contaminated with DON and NIV)

incidence: 1/9, conc.: 92 µg/kg, sample year: unknown, country: Spain¹³⁸¹

T-2 TOXIN

incidence: 2/12, conc. range: 1,600–4,080 µg/kg, Ø conc.: 2,840 µg/kg, sample year: unknown, country: Turkey²¹¹

incidence: 4/15, conc. range: 6–11 µg/kg, Ø conc.: 7 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

ZEARALENONE

incidence: ?/172, conc. range: 2,500–5,000 µg/kg, sample year: unknown, country: Kenya²⁷³

incidence: 13/15, conc. range: 2–136 µg/kg, Ø conc.: 40 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶

incidence: 6/8, conc. range: 2–40 µg/kg, Ø conc.: 12 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: ?/4, conc. range: 6.5–40.8 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 4/8, conc. range: 8–17.3 µg/kg, sample year: 2000/2001, country: UK⁸³⁶

incidence: 19/19, conc. range: 36–819 µg/kg, Ø conc.: 377 µg/kg, sample year: unknown, country: Iran¹³¹⁰

incidence: 1/9, conc.: 70.5 µg/kg, sample year: unknown, country: Spain¹³⁸¹
see also Meal (maize meal)

Flour (masa flour) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 24/25* **, conc. range: 39–1,366 µg/kg, Ø conc.: 582.9 µg/kg, sample year: unknown, country: Italy¹¹⁶⁶, sa from Mexico and USA, *commercial instant masa flour, **included blue, white and yellow corn phenotypes

FUMONISIN B₂

incidence: 24/25* **, conc. range: 14–453 µg/kg, Ø conc.: 194.3 µg/kg, sample year: unknown, country: Italy¹¹⁶⁶, sa from Mexico and USA, *commercial instant masa flour, **included blue, white and yellow corn phenotypes

Flour (oat flour) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₂

incidence: 1/3, conc.: 1.60 µg/kg, sample year: unknown, country: Spain¹³⁸¹

AFLATOXIN G₁

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFG₁, AFG₂ and OTA)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFG₁, AFG₂ and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 3.45 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFG₁, AFG₂ and OTA)

Fusarium Toxins

BEAUVERICIN

incidence: 1/1, conc.: 4,180 µg/kg,
sample year: unknown, country: Spain/
Morocco¹²⁶², sa from Spain

incidence: 2/3, conc. range: 226–325 µg/kg,
Ø conc.: 275.5 µg/kg, sample year:
unknown, country: Spain¹³⁸¹

DEOXYNIVALENOL

incidence: 1/3, conc.: 153 µg/kg, sample
year: unknown, country: Spain¹³⁸¹

ENNIATIN A₁

incidence: 1/1, conc.: 388,380 µg/kg,
sample year: unknown, country: Spain/
Morocco¹²⁶², sa from Spain

see also Meal (oat meal)

Flour (potato flour) may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₂

incidence: 1/1, conc.: 0.11 µg/kg, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-
contaminated with AFB₂, AFG₁, and OTA)

AFLATOXIN G₁

incidence: 1/1, conc.: 0.03 µg/kg, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₂, AFG₁,
and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 0.32 µg/kg, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-
contaminated with AFB₂, AFG₁, and OTA)

Flour (rice flour) may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/1, conc.: 0.71 µg/kg, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₂,
and OTA)

incidence: 1*/1*, conc.: 1.27 µg/kg*,
sample year: 2008/2009, country: Italy¹⁶⁰¹,
*sa from Sri Lanka (1 sa co-contaminated
with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 1/1, conc.: 0.16 µg/kg, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₂,
and OTA)

incidence: 1*/1*, conc.: 0.11 µg/kg*,
sample year: 2008/2009, country:
Italy¹⁶⁰¹, *sa from Sri Lanka
(1 sa co-contaminated with AFB₁
and AFB₂)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.03 µg/kg, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₂,
and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 0.27 µg/kg, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₂,
and OTA)

incidence: 0/2*, conc. range: no
contamination, sample year:
unknown, country: Spain¹¹¹⁷,
*conventional

incidence: 1/1*, conc.: 3.3 µg/kg, sample year:
unknown, country: Spain¹¹¹⁷, *organic

Fusarium Toxins

BEAUVERICIN

incidence: 1/3, conc. range:
327–575 µg/kg, sample year: unknown,
country: Spain¹³⁸¹

Flour (rye flour) may contain the
following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 2/2, conc. range: 42–57 µg/kg,
Ø conc.: 49.5 µg/kg, sample year:
unknown, country: Germany⁷

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/1, conc.: 0.91 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN B₂

incidence: 1/1, conc.: 0.06 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₁

incidence: 1/1, conc.: 0.04 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 17/17* **, conc. range: LOD–4.9 µg/kg (16 sa), 30 µg/kg (1 sa), sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 6/8* **, conc. range: LOD–4.9 µg/kg, sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 13/15* **, conc. range: LOD–4.9 µg/kg (maximum: 0.8 µg/kg), sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **conventional

incidence: 14/14* **, conc. range: LOD–4.9 µg/kg (12 sa), 5.0–25 µg/kg (1 sa), 68 µg/kg (1 sa), sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **organic

incidence: 27/30* **, conc. range: LOD–4.9 µg/kg (maximum: 0.8 µg/kg), sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 27/27* **, conc. range: LOD–4.9 µg/kg (26 sa), 5.0–25 µg/kg (1 sa), maximum: 5.7 µg/kg, sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 27/30* **, conc. range: LOD–4.9 µg/kg (25 sa), 5.0–25 µg/kg (2 sa), maximum: 90.8 µg/kg, sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 31/32* **, conc. range: LOD–4.9 µg/kg (29 sa), 5.0–25 µg/kg (2 sa), maximum: 5.9 µg/kg, sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 22/30* **, conc. range: LOD–4.9 µg/kg (20 sa), 5.0–25 µg/kg (2 sa), maximum: 8.4 µg/kg, sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 27/30* **, conc. range: LOD–4.9 µg/kg (26 sa), 5.1 µg/kg (1 sa), sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 21/28* **, conc. range: LOD–4.9 µg/kg (20 sa), 5.8 µg/kg (1 sa), sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **conventional

incidence: 29/30* **, conc. range: LOD–4.9 µg/kg (27 sa), >25 µg/kg (2 sa), maximum: 55 µg/kg, sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **organic

incidence: 11/15* **, conc. range: LOD–4.9 µg/kg (maximum: 2.3 µg/kg), sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 6/14* **, conc. range: LOD–4.9 µg/kg (maximum: 1.0 µg/kg), sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 11/11*, conc. range: tr–20 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², *11 bags of the same brand

incidence: 20/26*, conc. range: $\leq 6.400 \mu\text{g}/\text{kg}$, year: 1996–1998, country: Germany⁶⁹⁰, * $<T_{1997}$

incidence: 68/71*, conc. range: $\leq 2.145 \mu\text{g}/\text{kg}$, year: 1996–1998, country: Germany⁶⁹⁰, * $>T_{1997}$

incidence: 1/1, conc.: $3.69 \mu\text{g}/\text{kg}$, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Claviceps Toxins

ERGOCORNINE

incidence: 2?/3, conc. range: $6.4\text{--}6.9 \mu\text{g}/\text{kg}$, \emptyset conc.: $6.65 \mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁰⁶

incidence: 2/2*, conc. range: $3.3\text{--}7.9 \mu\text{g}/\text{kg}^{**}$, \emptyset conc.: $5.6 \mu\text{g}/\text{kg}^{**}$, sample year: unknown, country: Canada⁹⁷³, *dark rye flour, **estimated (2 sa co-contaminated with ERC, ERCR, α -ERC, ERM, ERS, and ERT)

incidence: 10/17*, conc. range: $\leq 27 \mu\text{g}/\text{kg}$, \emptyset conc.: $15 \mu\text{g}/\text{kg}$, sample year: 2000–2005, country: Denmark¹⁴³⁶, *conventional

incidence: 13/17*, conc. range: $\leq 27 \mu\text{g}/\text{kg}$, \emptyset conc.: $8.7 \mu\text{g}/\text{kg}$, sample year: 2000–2005, country: Denmark¹⁴³⁶, *organic

incidence: 12?/14, \emptyset conc.: $2.0 \mu\text{g}/\text{kg}$, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 20?/20, \emptyset conc.: $43 \mu\text{g}/\text{kg}$, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 27?/33, \emptyset conc.: $32 \mu\text{g}/\text{kg}$, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 25?/26, \emptyset conc.: $20 \mu\text{g}/\text{kg}$, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 8?/8, \emptyset conc.: $4.7 \mu\text{g}/\text{kg}$, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 26?/27, \emptyset conc.: $13 \mu\text{g}/\text{kg}$, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOCRISTINE

incidence: 3/3, conc. range: $13\text{--}58 \mu\text{g}/\text{kg}$, \emptyset conc.: $39 \mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁰⁶

incidence: 2/2*, conc. range: $23.4\text{--}62.2 \mu\text{g}/\text{kg}^{**}$, \emptyset conc.: $42.8 \mu\text{g}/\text{kg}^{**}$, sample year: unknown, country: Canada⁹⁷³, *dark rye flour, **estimated (2 sa co-contaminated with ERC, ERCR, α -ERC, ERM, ERS, and ERT)

incidence: 11/17*, conc. range: $\leq 58 \mu\text{g}/\text{kg}$, \emptyset conc.: $19 \mu\text{g}/\text{kg}$, sample year: 2000–2005, country: Denmark¹⁴³⁶, *conventional

incidence: 10/17*, conc. range: $\leq 15 \mu\text{g}/\text{kg}$, \emptyset conc.: $4.3 \mu\text{g}/\text{kg}$, sample year: 2000–2005, country: Denmark¹⁴³⁶, *organic

incidence: 12?/14, \emptyset conc.: $36 \mu\text{g}/\text{kg}$, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 20?/20, \emptyset conc.: $113 \mu\text{g}/\text{kg}$, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 27?/33, \emptyset conc.: $91 \mu\text{g}/\text{kg}$, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 25?/26, \emptyset conc.: $75 \mu\text{g}/\text{kg}$, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 8?/8, \emptyset conc.: $24 \mu\text{g}/\text{kg}$, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 26?/27, \emptyset conc.: $90 \mu\text{g}/\text{kg}$, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOMETRINE

incidence: 3/3, conc. range: $2.7\text{--}6.1 \mu\text{g}/\text{kg}$, \emptyset conc.: $4.7 \mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁰⁶

incidence: 2/2*, conc. range: $5.7\text{--}10.4 \mu\text{g}/\text{kg}^{**}$, \emptyset conc.: $8.05 \mu\text{g}/\text{kg}^{**}$, sample year: unknown, country: Canada⁹⁷³, *dark rye flour, **estimated (2 sa co-contaminated with ERC, ERCR, α -ERC, ERM, ERS, and ERT)

ERGONOVINE

incidence: 3/17*, conc. range: $\leq 17 \mu\text{g}/\text{kg}$, \emptyset conc.: $9.4 \mu\text{g}/\text{kg}$, sample year: 2000–2005, country: Denmark¹⁴³⁶, *conventional

incidence: 0/17*, conc. range: no contamination, sample year: 2000–2005, country: Denmark¹⁴³⁶, *organic

incidence: 12?/14, Ø conc.:

8.4 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 20?/20, Ø conc.:

26 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 27?/33, Ø conc.:

18 µg/kg, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 25?/26, Ø conc.: 14 µg/kg, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 8?/8, Ø conc.: 7.4 µg/kg, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 26?/27, Ø conc.: 19 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOSINE

incidence: 2?/3, conc. range: 14 µg/kg, Ø conc.: 14 µg/kg, sample year: unknown, country: Canada⁸⁰⁶

incidence: 2/2*, conc. range: tr–10.8 µg/kg**, country: sample year: unknown, Canada⁹⁷³, *dark rye flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERC, ERM, ERS, and ERT)

incidence: 12?/14, Ø conc.: 5.9 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 20?/20, Ø conc.: 71 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 27?/33, Ø conc.: 44 µg/kg, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 25?/26, Ø conc.: 14 µg/kg, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 8?/8, Ø conc.: 10 µg/kg, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 26?/27, Ø conc.: 20 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOTAMINE

incidence: 3/3, conc. range: 8.6–51 µg/kg, Ø conc.: 34.2 µg/kg, sample year: unknown, country: Canada⁸⁰⁶

incidence: 2/2*, conc. range: 14–36.9 µg/kg**, Ø conc.: 24.97 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *dark rye flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERC, ERM, ERS, and ERT)

incidence: 9/17*, conc. range: ≤83 µg/kg, Ø conc.: 35 µg/kg, sample year: 2000–2005, country: Denmark¹⁴³⁶, *conventional

incidence: 6/17*, conc. range: ≤38 µg/kg, Ø conc.: 17 µg/kg, sample year: 2000–2005, country: Denmark¹⁴³⁶, *organic

incidence: 12?/14, Ø conc.: 19 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 20?/20, Ø conc.: 128 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 27?/33, Ø conc.: 79 µg/kg, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 25?/26, Ø conc.: 40 µg/kg, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 8?/8, Ø conc.: 17 µg/kg, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 26?/27, Ø conc.: 52 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

α-ERGOKRYPTINE

incidence: 2/3, conc. range: 2.2–7.2 µg/kg, Ø conc.: 4.7 µg/kg, sample year: unknown, country: Canada⁸⁰⁶

incidence: 2/2*, conc. range: 4.3–10.3 µg/kg**, Ø conc.: 7.3 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *dark rye flour, **estimated (2 sa co-contaminated with ERC, ERCR, α-ERC, ERM, ERS, and ERT)

incidence: 14/17*, conc. range: ≤73 µg/kg, Ø conc.: 23 µg/kg, sample year: 2000–2005, country: Denmark¹⁴³⁶, *conventional

incidence: 15/17*, conc. range: ≤62 µg/kg, Ø conc.: 18 µg/kg, sample year: 2000–2005, country: Denmark¹⁴³⁶, *organic

incidence: 12?/14, Ø conc.: 9.5 µg/kg,
sample year: 1985/1986, country:
Canada¹⁴⁵⁹

incidence: 20?/20, Ø conc.: 31 µg/kg,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹

incidence: 27?/33, Ø conc.: 29 µg/kg, sample
year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 25?/26, Ø conc.: 26 µg/kg, sample
year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 8?/8, Ø conc.: 6.9 µg/kg, sample
year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 26?/27, Ø conc.: 30 µg/kg, sample
year: 1990/1991, country: Canada¹⁴⁵⁹

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/1*, conc.: 174 µg/kg, year:
1984, country: Japan⁵³⁸, sa from Germany,
*ncac

incidence: 2/7*, conc. range:
≤120 µg/kg, Ø conc.: 120 µg/kg, year:
1999, country: Germany⁵⁷⁷, *rye flour
and grits

incidence: 18/26, conc. range: ≤375 µg/kg,
sample year: 2007/2008, country:
Hungary⁸⁹¹

incidence: 15/15, conc. range:
≤64 µg/kg sample year: 2005/2006,
country: Germany¹¹²²

incidence: 9/9*, conc. range: ≤112 µg/kg,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

incidence: 16/16, conc. range:
≤257 µg/kg, sample year: 1998, country:
Denmark¹³⁵⁵

incidence: 6/16, conc. range:
≤80 µg/kg, sample year: 1999, country:
Denmark¹³⁵⁵

incidence: 8/17, conc. range:
≤84 µg/kg, sample year: 2000, country:
Denmark¹³⁵⁵

incidence: 11/20, conc. range:
≤55 µg/kg, sample year: 2001, country:
Denmark¹³⁵⁵

3-ACETYLDEOXYNIVALENOL

incidence: 10/15, conc. range: ≤0.63 µg/
kg, sample year: 2005/2006, country:
Germany¹¹²²

incidence: 5/9*, conc. range: ≤2.4 µg/kg,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

15-ACETYLDEOXYNIVALENOL

incidence: 15/15, conc. range: ≤0.99 µg/
kg, sample year: 2005/2006, country:
Germany¹¹²²

incidence: 6/9*, conc. range: ≤4.3 µg/kg,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

HT-2 TOXIN

incidence: 15/15, conc. range: ≤2.6 µg/
kg, sample year: 2005/2006, country:
Germany¹¹²²

incidence: 9/9*, conc. range: ≤2.2 µg/kg,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

incidence: 4/9, conc. range: ≤13 µg/kg,
sample year: 1998, country: Denmark¹³⁵⁵

incidence: 4/10, conc. range: ≤38 µg/kg,
sample year: 1999, country: Denmark¹³⁵⁵

incidence: 3/7, conc. range: ≤70 µg/kg,
sample year: 2000, country: Denmark¹³⁵⁵

MONILIFORMIN

incidence: 1/3, conc.: 2.9 µg/kg, sample
year: unknown, country: Germany¹⁴⁶¹

NEOSOLANIOL

incidence: 3/15, conc. range: ≤0.04 µg/
kg, sample year: 2005/2006, country:
Germany¹¹²²

incidence: 3/9*, conc. range: ≤0.10 µg/kg,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

NIVALENOL

incidence: 1/1*, conc.: 3 µg/kg, sample
year: 1984, country: Japan⁵³⁸, sa from
Germany, *ncac

incidence: 4/16, conc. range: ≤48 µg/kg,
sample year: 1998, country: Denmark¹³⁵⁵

incidence: 4/17, conc. range: ≤ 38 $\mu\text{g}/\text{kg}$,
sample year: 2000, country: Denmark¹³⁵⁵

incidence: 1/20, conc.: 10 $\mu\text{g}/\text{kg}$, sample
year: 2001, country: Denmark¹³⁵⁵

MONOACETOXYSCIRPENOL

incidence: 14/15, conc. range: ≤ 0.20 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²²

incidence: 8/9*, conc. range: ≤ 0.31 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

T-2 TOXIN

incidence: 1/12, conc.: 30.0 $\mu\text{g}/\text{kg}$, sample
year: 1980–1985, country: Japan⁹⁸³, sa from
Germany

incidence: 15/15, conc. range: ≤ 0.42 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²²

incidence: 9/9*, conc. range: ≤ 0.77 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

incidence: 7/9, conc. range: ≤ 193 $\mu\text{g}/\text{kg}$,
sample year: 1998, country: Denmark¹³⁵⁵

incidence: 5/9, conc. range: ≤ 161 $\mu\text{g}/\text{kg}$,
sample year: 1999, country: Denmark¹³⁵⁵

T-2 TETRAOL

incidence: 13/15, conc. range: ≤ 6.4 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²²

incidence: 5/9*, conc. range: ≤ 7.4 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²², *whole rye flour

T-2 TRIOL

incidence: 1/15, conc.: 0.25 $\mu\text{g}/\text{kg}$, sample
year: 2005/2006, country: Germany¹¹²²

incidence: 1/9*, conc.: 0.25 $\mu\text{g}/\text{kg}$, sample
year: 2005/2006, country: Germany¹¹²²,
*whole rye flour

ZEARELENONE

incidence: 1/16, conc.: 2 $\mu\text{g}/\text{kg}$, sample
year: 1998, country: Denmark¹³⁵⁵

incidence: 1/14, conc.: 1 $\mu\text{g}/\text{kg}$, sample
year: 1998, country: Denmark¹³⁵⁵

see also Meal (rye)

Flour (soybean flour) may contain
the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 0.94 $\mu\text{g}/\text{kg}$, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
and OTA)

AFLATOXIN B₂

incidence: 1/1, conc.: 0.18 $\mu\text{g}/\text{kg}$, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
and OTA)

AFLATOXIN G₁

incidence: 1/1, conc.: 0.03 $\mu\text{g}/\text{kg}$, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 0.57 $\mu\text{g}/\text{kg}$, sample
year: 2002/2003, country: Turkey⁹³⁰ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
and OTA)

Flour (spelt flour) may contain the
following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/1, conc.: 4.1 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: Germany¹²¹²

Flour (triticale flour) may contain
the following mycotoxins:

Claviceps Toxins

ERGOCORNINE

incidence: 10/12, \emptyset conc.: 5.3 $\mu\text{g}/\text{kg}$, sample
year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 10/10, \emptyset conc.: 4.1 $\mu\text{g}/\text{kg}$, sample
year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 4?/4, Ø conc.: 24 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOCRISTINE

incidence: 10?/12, Ø conc.: 25 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 10?/10, Ø conc.: 19 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 4?/4, Ø conc.: 125 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOVINE

incidence: 10?/12, Ø conc.: 5.6 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 10?/10, Ø conc.: 4.3 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 4?/4, Ø conc.: 25 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOSINE

incidence: 10?/12, Ø conc.: 2.2 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 10?/10, Ø conc.: 5.2 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 4?/4, Ø conc.: 17 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

α-ERGOTAMINE

incidence: 10?/12, Ø conc.: 9.9 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 10?/10, Ø conc.: 10 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 4?/4, Ø conc.: 49 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

α-ERGOKRYPTINE

incidence: 10?/12, Ø conc.: 5.3 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 10?/10, Ø conc.: 3.9 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 4?/4, Ø conc.: 43 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

Flour (Vetch flour) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN G₁

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFG₁ and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 0.71 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFG₁ and OTA)

Flour (wheat flour) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 2/7*, conc. range: 0.5 µg/kg, Ø conc.: 0.5 µg/kg, sample year: unknown, country: Canada¹⁶³⁰, *included whole, hard, soft, and durum wheat flour (1 sa co-contaminated with AME and AOH, 1 sa contaminated solely with AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/7*, conc.: 0.5 µg/kg, sample year: unknown, country: Canada¹⁶³⁰, *included whole, hard, soft, and durum wheat flour (1 sa co-contaminated with AME and AOH)

TENUAZONIC ACID

incidence: 4/4*, conc. range: 5–36 µg/kg, sample year: unknown, country: Germany⁷, *whole wheat flour

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/83, conc.: 25.6 µg/kg, sample year: unknown, country: Malaysia³

incidence: 21/238, Ø conc.: 4.13 µg/kg, sample year: unknown, country: Croatia⁶⁶

incidence: 27*/106, conc. range: 109–693 µg/kg, sample year: 1995–2003, country: Nepal²³⁹, * >30 µg/kg

incidence: 54/165, conc. range: 21–80 µg/kg (6 sa), 81–120 µg/kg (2 sa), 121–250 µg/kg (23 sa), 251–500 µg/kg (12 sa), 501–750 µg/kg (7 sa), 751–1,000 µg/kg (3 sa), 1,000–2,000 µg/kg (1 sa), sample year: 1987–1989, country: India³⁰¹

incidence: 20/100, conc. range: 1.0–2.0 µg/kg (18 sa), >2.0 µg/kg (2 sa, maximum: 12.2 µg/kg), sample year: 2006, country: Turkey³⁹⁶

incidence: 3/17, conc. range: 0.03–0.15 µg/kg, sample year: unknown, country: Morocco/Spain⁷⁹², sa from Morocco

incidence: 8/12, conc. range: 0.03–0.21 µg/kg, Ø conc.: 0.09 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁ and OTA)

incidence: 5/15, conc. range: ≤80 µg/kg, Ø conc.: 24.00 µg/kg, sample year: unknown, country: India¹⁰²³

incidence: 19/60, conc. range: 0.11–4.11 µg/kg, Ø conc.: 0.64 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

incidence: 16/16, conc. range: 0.1–0.9 µg/kg, sample year: unknown, country: China¹⁴³⁷ (13 sa co-contaminated with AFB₁ and FB₁, 3 sa contaminated solely with AFB₁)

AFLATOXIN B₂

incidence: 4/83, conc. range: 11.25–252.50 µg/kg, Ø conc.: 75.2 µg/kg, sample year: unknown, country: Malaysia³ (1 sa co-contaminated with AFB₂ and AFG₂, 3 sa contaminated solely with AFB₂)

incidence: 28/165, conc. range: <20 µg/kg (4 sa), 21–80 µg/kg (1 sa), 81–120 µg/kg (12 sa), 121–250 µg/kg (8 sa), 251–500 µg/kg (3 sa), sample year: 1987–1989, country: India³⁰¹

incidence: 5/12, conc. range: 0.03–0.08 µg/kg, Ø conc.: 0.044 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (4 sa

co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, and OTA)

incidence: 1/25, conc.: 2 µg/kg, sample year: unknown, country: Spain¹³⁸¹

AFLATOXIN G₁

incidence: 3/83, conc. range: 25.00–289.38 µg/kg, Ø conc.: 135 µg/kg, sample year: unknown, country: Malaysia³

incidence: 5/165, conc. range: 251–500 µg/kg (2 sa), 501–750 µg/kg (3 sa), sample year: 1987–1989, country: India³⁰¹

incidence: 8/12, conc. range: 0.03–0.10 µg/kg, Ø conc.: 0.056 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰

(4 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFG₁ and OTA)

incidence: 2/25, conc. range: 0.53–0.72 µg/kg, Ø conc.: 0.625 µg/kg, sample year: unknown, country: Spain¹³⁸¹

AFLATOXIN G₂

incidence: 11/83, conc. range: 16.25–436.25 µg/kg, Ø conc.: 153 µg/kg, sample year: unknown, country: Malaysia³ (1 sa co-contaminated with AFB₂ and AFG₂, 10 sa contaminated solely with AFG₂)

incidence: 9/12, conc. range: 0.03–0.13 µg/kg, Ø conc.: 0.07 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰

(4 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFG₂ and OTA)

incidence: 1/25, conc.: 1 µg/kg, sample year: unknown, country: Spain¹³⁸¹

AFLATOXIN (TOTAL)

incidence: 45/100, conc. range: 0.05–4.0 µg/kg (43 sa), >4.0 µg/kg (2 sa, maximum: 14.0 µg/kg), sample year: 2006, country: Turkey³⁹⁶

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/12, conc.: 0.19 µg/kg, sample year: unknown, country: Japan¹⁰²⁵ (1 sa co-contaminated with CIT and OTA)

OCHRATOXIN A

incidence: 38/55* **, conc. range: LOD–4.9 µg/kg (maximum: 1.5 µg/kg), sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 15/18* **, conc. range: LOD–4.9 µg/kg (14 sa), 19 µg/kg (1 sa), sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 11/11* **, conc. range: LOD–4.9 µg/kg (10 sa), 16 µg/kg (1 sa), sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **conventional

incidence: 9/9* **, conc. range: LOD–4.9 µg/kg (maximum: 0.6 µg/kg), sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **organic

incidence: 10/20* **, conc. range: LOD–4.9 µg/kg (maximum: 0.5 µg/kg), sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 19/21* **, conc. range: LOD–4.9 µg/kg (maximum: 0.4 µg/kg), sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 16/20* **, conc. range: LOD–4.9 µg/kg (maximum: 1.1 µg/kg), sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 21/21* **, conc. range: LOD–4.9 µg/kg (maximum: 1.0 µg/kg), sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 15/20* **, conc. range: LOD–4.9 µg/kg (maximum: 0.9 µg/kg), sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 17/21* **, conc. range: LOD–4.9 µg/kg (maximum: 1.5 µg/kg), sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 12/20* **, conc. range: LOD–4.9 µg/kg (maximum: 0.8 µg/kg), sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **conventional

incidence: 15/20* **, conc. range: LOD–4.9 µg/kg (maximum: 1.7 µg/kg), sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **organic

incidence: 6/10* **, conc. range: LOD–4.9 µg/kg (maximum: 0.8 µg/kg), sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 5/10* **, conc. range: LOD–4.9 µg/kg (maximum: 1.3 µg/kg), sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 81/100, conc. range: 0.025–3.0 µg/kg (53 sa), >3.0 µg/kg (28 sa), maximum: 10.5 µg/kg, sample year: 2006, country: Turkey³⁹⁶

incidence: 12/13*, conc. range: 0.1–1.9 µg/kg, Ø conc.: 0.5 µg/kg, sample year: unknown, country: Switzerland⁵⁷⁸, *brown flour

incidence: 2/16, conc. range: 0.11–0.15 µg/kg, Ø conc.: 0.13 µg/kg, sample year: 2001, country: Hungary⁵⁹³

incidence: 6/27, conc. range: 1–5 µg/kg, sample year: unknown, country: Czechoslovakia⁵⁹⁵

incidence: 1/4*, conc.: 0.3–0.5 µg/kg, sample year: 2003, country: Taiwan⁶⁰⁷, *whole wheat flour

incidence: 82/98*, conc. range: ≤1.000 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *<T550

incidence: 77/83*, conc. range: ≤1.732 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *>T550

incidence: 7/61, conc. range: 0.3–0.9 µg/kg (2 sa), 1–2.4 µg/kg (4 sa), 2.8 µg/kg (1 sa), sample year: 2000, country: UK⁷⁷⁴

incidence: 21/30, conc. range: ≤2.1 µg/kg, sample year: 2006, country: Chile⁷⁸⁶

incidence: 79/160, conc. range: ≤ 1.00 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 0.26 $\mu\text{g}/\text{kg}$, sample year: 2004–
 2006, country: Japan⁹⁰⁰

incidence: 12/12, conc. range: 0.36–
 2.23 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.75 $\mu\text{g}/\text{kg}$, sample
 year: 2002/2003, country: Turkey⁹³⁰ (4 sa
 co-contaminated with AFB₁, AFB₂, AFG₁,
 AFG₂, and OTA, 2 sa co-contaminated
 with AFB₁, AFG₁, AFG₂, and OTA, 1 sa
 co-contaminated with AFB₁, AFB₂, and
 OTA, 1 sa co-contaminated with AFG₁,
 AFG₂, and OTA, 1 sa co-contaminated
 with AFG₁ and OTA, 2 sa
 co-contaminated with AFG₂ and OTA, 1
 sa co-contaminated with AFB₁ and OTA)

incidence: 6/12, conc. range: 0.12–0.30 $\mu\text{g}/$
 kg , sample year: unknown, country:
 Japan¹⁰²⁵ (1 sa co-contaminated with
 CIT and OTA, 2 sa co-contaminated with
 DON and OTA; no further information
 available)

incidence: 28/50, conc. range: 0.10–
 0.48 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.09 $\mu\text{g}/\text{kg}$, sample
 year: 2004/2005, country: Japan¹²¹⁵

incidence: 38/40* **, conc. range: tr
 (21 sa), 0.064–1.0 $\mu\text{g}/\text{kg}$ (16 sa), 1.035 $\mu\text{g}/$
 kg (1 sa), sample year: 2002/2003,
 country: Belgium¹³⁵¹, *conventional,
 **wholemeal wheat flour

incidence: 40/40* **, conc. range: tr
 (5 sa), 0.141–1.0 $\mu\text{g}/\text{kg}$ (34 sa), 2.199 $\mu\text{g}/$
 kg (1 sa), sample year: 2002/2003,
 country: Belgium¹³⁵¹, *organic,
 **wholemeal wheat flour

incidence: 3/25, conc. range: <LOQ–
 3.5 $\mu\text{g}/\text{kg}$, sample year: unknown,
 country: Spain¹³⁸¹

Claviceps Toxins

ERGOCORNINE

incidence: 1/1*, conc.: 0.6 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: Canada⁸⁰⁶,
 *enriched wheat flour

incidence: 3/3*, conc. range: 3.5–7.3 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 5.7 $\mu\text{g}/\text{kg}$, sample year: unknown,
 country: Canada⁸⁰⁶, *whole wheat flour (3

sa co-contaminated with ERC, ERRCR,
 α -ERK, ERM, ERS, and ERT)

incidence: 6/6, conc. range: tr–2.9 $\mu\text{g}/\text{kg}^*$,
 sample year: unknown, country:
 Canada⁹⁷³, *estimated (5 sa
 co-contaminated with ERC, ERRCR,
 α -ERK, ERM, ERS, and ERT; 1 sa
 co-contaminated with ERC, ERRCR, α -ERK,
 ERM, and ERT)

incidence: 3/3*, conc. range: 3.7–5.3 $\mu\text{g}/$
 kg^{**} , \emptyset conc.: 4.5 $\mu\text{g}/\text{kg}^{**}$, sample year:
 unknown, country: Canada⁹⁷³, *whole
 wheat flour, **estimated (3 sa
 co-contaminated with ERC, ERRCR, α -ERK,
 ERM, ERS, and ERT)

incidence: 12?/19, \emptyset conc.: 0.5 $\mu\text{g}/\text{kg}$,
 sample year: 1985/1986, country:
 Canada¹⁴⁵⁹

incidence: 18?/19, \emptyset conc.: 3.5 $\mu\text{g}/\text{kg}$, sample
 year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 15?/23, \emptyset conc.: 2.9 $\mu\text{g}/\text{kg}$, sample
 year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 9?/14, \emptyset conc.: 2.9 $\mu\text{g}/\text{kg}$,
 sample year: 1988/1989, country:
 Canada¹⁴⁵⁹

incidence: 4?/5, \emptyset conc.: 3.6 $\mu\text{g}/\text{kg}$, sample
 year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 10?/13, \emptyset conc.: 0.7 $\mu\text{g}/\text{kg}$, sample
 year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOCRISTINE

incidence: 1/1*, conc.: 3.1 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: Canada⁸⁰⁶,
 *enriched wheat flour

incidence: 3/3*, conc. range: 19–23 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 20.3 $\mu\text{g}/\text{kg}$, sample year:
 unknown, country: Canada⁸⁰⁶, *whole
 wheat flour (3 sa co-contaminated with
 ERC, ERRCR, α -ERK, ERM, ERS, and ERT)

incidence: 6/6, conc. range: 2.7–10.5 $\mu\text{g}/$
 kg^* , \emptyset conc.: 6.033 $\mu\text{g}/\text{kg}^*$, sample year:
 unknown, country: Canada⁹⁷³, *estimated
 (5 sa co-contaminated with ERC, ERRCR,
 α -ERK, ERM, ERS, and ERT; 1 sa
 co-contaminated with ERC, ERRCR, α -ERK,
 ERM, and ERT)

incidence: 3/3*, conc. range: 16.8–26.6 µg/kg**, ∅ conc.: 21.73 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *whole wheat flour, **estimated (3 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

incidence: 12?/19, ∅ conc.: 5.8 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 18?/19, ∅ conc.: 14 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 15?/23, ∅ conc.: 17 µg/kg, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 9?/14, ∅ conc.: 8.8 µg/kg, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 4?/5, ∅ conc.: 22 µg/kg, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 10?/13, ∅ conc.: 7.6 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOMETRINE

incidence: 1/1*, conc.: 0.4 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *enriched wheat flour

incidence: 3/3*, conc. range: 2.0–3.5 µg/kg, ∅ conc.: 2.56 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *whole wheat flour (3 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

incidence: 6/6, conc. range: 0.27–1.7 µg/kg*, ∅ conc.: 0.713 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (5 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT, 1 sa co-contaminated with ERC, ERCR, α-ERK, ERM, and ERT)

incidence: 3/3*, conc. range: 2.0–2.8 µg/kg**, ∅ conc.: 2.366 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *whole wheat flour, **estimated (3 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

ERGOVINE

incidence: 12?/19, ∅ conc.: 2.5 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 18?/19, ∅ conc.: 4.1 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 15?/23, ∅ conc.: 1.8 µg/kg, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 9?/14, ∅ conc.: 4.1 µg/kg, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 4?/5, ∅ conc.: 4.9 µg/kg, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 10?/13, ∅ conc.: 1.1 µg/kg, sample year: 1990/1991, country: Canada¹⁴⁵⁹

ERGOSINE

incidence: 1/1*, conc.: 0.5 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *enriched wheat flour

incidence: 3/3*, conc. range: 1.9–6.7 µg/kg, ∅ conc.: 3.63 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *whole wheat flour (3 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

incidence: 5/6, conc. range: 0.69–2.0 µg/kg*, ∅ conc.: 1.276 µg/kg*, sample year: unknown, country: Canada⁹⁷³, *estimated (5 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

incidence: 3/3*, conc. range: 3.1–10.3 µg/kg**, ∅ conc.: 5.44 µg/kg**, sample year: unknown, country: Canada⁹⁷³, *whole wheat flour, **estimated (3 sa co-contaminated with ERC, ERCR, α-ERK, ERM, ERS, and ERT)

incidence: 12?/19, ∅ conc.: 2.1 µg/kg, sample year: 1985/1986, country: Canada¹⁴⁵⁹

incidence: 18?/19, ∅ conc.: 4.6 µg/kg, sample year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 15?/23, ∅ conc.: 3.1 µg/kg, sample year: 1987/1988, country: Canada¹⁴⁵⁹

incidence: 9?/14, ∅ conc.: 1.4 µg/kg, sample year: 1988/1989, country: Canada¹⁴⁵⁹

incidence: 4?/5, ∅ conc.: 11 µg/kg, sample year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 10?/13, $\bar{\varnothing}$ conc.: 1.0 $\mu\text{g}/\text{kg}$,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹

ERGOTAMINE

incidence: 1/1*, conc.: 1.5 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Canada⁸⁰⁶,
*enriched wheat flour

incidence: 3/3*, conc. range: 7.4–9.1 $\mu\text{g}/\text{kg}$,
 $\bar{\varnothing}$ conc.: 8.36 $\mu\text{g}/\text{kg}$, sample year: unknown,
country: Canada⁸⁰⁶, *whole wheat flour (3
sa co-contaminated with ERC, ERCR,
 α -ERK, ERM, ERS, and ERT)

incidence: 6/6, conc. range: 1.7–4.8 $\mu\text{g}/\text{kg}$ *,
 $\bar{\varnothing}$ conc.: 2.95 $\mu\text{g}/\text{kg}$ *, sample year:
unknown, country: Canada⁹⁷³, *estimated
(5 sa co-contaminated with ERC, ERCR,
 α -ERK, ERM, ERS, and ERT,
1 sa co-contaminated with ERC, ERCR,
 α -ERK, ERM, and ERT)

incidence: 3/3*, conc. range: 5.3–17.1 $\mu\text{g}/$
 kg ***, $\bar{\varnothing}$ conc.: 11.32 $\mu\text{g}/\text{kg}$ **, sample year:
unknown, country: Canada⁹⁷³, *whole
wheat flour, **estimated (3 sa
co-contaminated with ERC, ERCR, α -ERK,
ERM, ERS, and ERT)

incidence: 12?/19, $\bar{\varnothing}$ conc.: 2.9 $\mu\text{g}/\text{kg}$,
sample year: 1985/1986, country:
Canada¹⁴⁵⁹

incidence: 18?/19, $\bar{\varnothing}$ conc.: 8.7 $\mu\text{g}/\text{kg}$, sample
year: 1986/1987, country: Canada¹⁴⁵⁹

incidence: 15?/23, $\bar{\varnothing}$ conc.: 10 $\mu\text{g}/\text{kg}$,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹

incidence: 9?/14, $\bar{\varnothing}$ conc.: 6.6 $\mu\text{g}/\text{kg}$,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹

incidence: 4?/5, $\bar{\varnothing}$ conc.: 20 $\mu\text{g}/\text{kg}$, sample
year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 10?/13, $\bar{\varnothing}$ conc.: 3.1 $\mu\text{g}/\text{kg}$,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹

α -ERGOCRYPTINE

incidence: 1/1*, conc.: 0.8 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Canada⁸⁰⁶,
*enriched wheat flour

incidence: 3/3*, conc. range: 2.8–8.3 $\mu\text{g}/\text{kg}$,
 $\bar{\varnothing}$ conc.: 5.76 $\mu\text{g}/\text{kg}$, sample year: unknown,
country: Canada⁸⁰⁶, *whole wheat flour (3
sa co-contaminated with ERC, ERCR,
 α -ERK, ERM, ERS, and ERT)

incidence: 6/6, conc. range: tr–2.7 $\mu\text{g}/\text{kg}$ *,
sample year: unknown, country: Canada⁹⁷³,
*estimated (5 sa co-contaminated with
ERC, ERCR, α -ERK, ERM, ERS, and ERT, 1
sa co-contaminated with ERC, ERCR,
 α -ERK, ERM, and ERT)

incidence: 3/3*, conc. range: 4.6–6.5 $\mu\text{g}/$
 kg **, $\bar{\varnothing}$ conc.: 5.63 $\mu\text{g}/\text{kg}$ **, sample year:
unknown, country: Canada⁹⁷³, *whole
wheat flour, **estimated (3 sa
co-contaminated with ERC, ERCR, α -ERK,
ERM, ERS, and ERT)

incidence: 12?/19, $\bar{\varnothing}$ conc.: 1.5 $\mu\text{g}/\text{kg}$,
sample year: 1985/1986, country:
Canada¹⁴⁵⁹

incidence: 18?/19, $\bar{\varnothing}$ conc.: 3.8 $\mu\text{g}/\text{kg}$,
sample year: 1986/1987, country:
Canada¹⁴⁵⁹

incidence: 15?/23, $\bar{\varnothing}$ conc.: 4.6 $\mu\text{g}/\text{kg}$,
sample year: 1987/1988, country:
Canada¹⁴⁵⁹

incidence: 9?/14, $\bar{\varnothing}$ conc.: 2.4 $\mu\text{g}/\text{kg}$,
sample year: 1988/1989, country:
Canada¹⁴⁵⁹

incidence: 4?/5, $\bar{\varnothing}$ conc.: 6.8 $\mu\text{g}/\text{kg}$, sample
year: 1989/1990, country: Canada¹⁴⁵⁹

incidence: 10?/13, $\bar{\varnothing}$ conc.: 1.2 $\mu\text{g}/\text{kg}$,
sample year: 1990/1991, country:
Canada¹⁴⁵⁹

Fusarium Toxins

BEAUVERICIN

incidence: 6/25, conc. range: 150–720 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: Spain¹³⁸¹

DEOXYNIVALENOL

incidence: 14/40, conc. range: 50–175 $\mu\text{g}/$
 kg , $\bar{\varnothing}$ conc.: 94 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: Argentina³²⁸

incidence: 13/17, conc. range: 1,500–
5,800 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 4,000 $\mu\text{g}/\text{kg}$, sample

year: 1989, country: USA⁴²⁴, *wheat flour/
muffin mix

incidence: 9/22*, conc. range: 430–
4,850 µg/kg, sample year: 1987, country:
India⁴³⁰, *refined wheat flour

incidence: 2/15*, conc. range: 346–
8,380 µg/kg, sample year: 1987, country:
India⁴³⁰

incidence: 61/61, conc. range: 250–9,000 µg/
kg, Ø conc.: 1,309 µg/kg, sample year:
1993/1994, country: Argentina⁵⁰⁵

incidence: 36/36*, conc. range:
65–1,379 µg/kg, Ø conc.: 394 µg/kg,
sample year: 1999, country: Germany⁵¹⁹,
*conventional

incidence: 23/24*, conc. range: 15–756 µg/
kg, Ø conc.: 131 µg/kg, sample year: 1999,
country: Germany⁵¹⁹, *organic

incidence: 28/28*, conc. range: 15–965 µg/
kg, Ø conc.: 239 µg/kg, sample year: 1999,
country: Germany⁵¹⁹, *white wheat flour

incidence: 12/13*, conc. range: 38–756 µg/
kg, Ø conc.: 234 µg/kg, sample year: 1999,
country: Germany⁵¹⁹, *white wheat flour

incidence: 19/19*, conc. range:
15–1,379 µg/kg, Ø conc.: 404 µg/kg,
sample year: 1999, country: Germany⁵¹⁹,
*whole-grain wheat flour

incidence: 26/36, conc. range: 2–239 µg/kg,
Ø conc.: 38 µg/kg, sample year: 1982–1985,
country: Japan⁵³¹, sa from Japan and
unknown origin (2 sa co-contaminated
with DON, NIV, and ZEA, 8 sa
co-contaminated with DON and NIV, 1 sa
co-contaminated with DON and ZEA, 15 sa
contaminated solely with DON)

incidence: 4/6, conc. range: 5–50 µg/kg, Ø
conc.: 22.3 µg/kg, sample year: unknown,
country: Japan⁵³², sa from Japan and
unknown origin (1 sa co-contaminated
with DON and NIV, 3 sa contaminated
solely with DON)

incidence: 5/31, conc. range: 400–800 µg/
kg, Ø conc.: 560 µg/kg, sample year:
unknown, country: Argentina⁵⁴²

incidence: 44/50, conc. range: 20–50 µg/kg
(11 sa), 60–100 µg/kg (14 sa), 110–200 µg/
kg (10 sa), 210–460 µg/kg (9 sa), sample
year: 1983, country: USA⁵⁴⁵

kg (10 sa), 210–460 µg/kg (9 sa), sample
year: 1983, country: USA⁵⁴⁵

incidence: 3/3, conc. range: 11–690 µg/kg,
Ø conc.: 251 µg/kg, sample year: 1984,
country: Japan⁵⁴⁹, sa from China (1 sa
co-contaminated with DON and ZEA)

incidence: 1/1*, conc.: 1,720 µg/kg, sample
year: 1991, country: Papua, New Guinea/
Japan⁵⁷⁴, sa from Australia, *fine-ground
biscuit

incidence: 1/1*, conc.: 2,270 µg/kg, sample
year: 1991, country: Papua, New Guinea/
Japan⁵⁷⁴, sa from Australia, *raw wheat
flour

incidence: 30/42*, conc. range: ≤330 µg/
kg, Ø conc.: 200 µg/kg, sample year:
1999, country: Germany⁵⁷⁷, *wheat flour
type 405

incidence: 11/16*, conc. range: ≤580 µg/
kg, Ø conc.: 270 µg/kg, sample year: 2000,
country: Germany⁵⁷⁷, *wheat flour type
405

incidence: 3/9*, conc. range: ≤420 µg/kg, Ø
conc.: 410 µg/kg, sample year: 1999, country:
Germany⁵⁷⁷, *wheat flour type 550

incidence: 10/11*, conc. range: ≤760 µg/
kg, Ø conc.: 370 µg/kg, sample year: 1999,
country: Germany⁵⁷⁷, *wheat flour type
1050

incidence: 13/20*, conc. range: ≤550 µg/kg,
Ø conc.: 300 µg/kg, sample year: 1999,
country: Germany⁵⁷⁷, *whole grain flour

incidence: 60/61, conc. range: 20–49 µg/kg
(22 sa), 50–99 µg/kg (30 sa), 100–249 µg/
kg (8 sa, maximum: 234 µg/kg), sample
year: 2000, country: UK⁷⁷⁴

incidence: 2/19*, conc. range: 350–
8,380 µg/kg, Ø conc.: 4,365 µg/kg, sample
year: unknown, country: India⁷⁸⁸, *whole
wheat flour partly rain-affected

incidence: 11/37*, conc. range: 440–
4,850 µg/kg, sample year: unknown,
country: India⁷⁸⁸, *refined wheat flour
partly rain-affected

incidence: 2/6, conc. range: 148.22–
182.94 µg/kg, Ø conc.: 165.58 µg/kg, sample
year: 2002, country: Qatar⁸⁷⁸

- incidence: 93/134*, conc. range: $\leq 3,065$ $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Hungary⁸⁹¹, *DON concentrations in wheat and spelt wheat flour considered together
- incidence: 13/32*, conc. range: $\leq 1,065$ $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Hungary⁸⁹¹, *DON concentrations in wheat and spelt wheat flour considered together
- incidence: 4/10* **, conc. range: ≤ 625 $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Hungary⁸⁹¹, *spelt wheat flour, **DON concentrations in wheat and spelt wheat flour considered together
- incidence: 13/13*, conc. range: 69–323 $\mu\text{g}/\text{kg}$ **, \emptyset conc.: 144.5 $\mu\text{g}/\text{kg}$ **, sample year: unknown, country: UK⁸⁹⁹, *please see also **Bread *white, Deoxynivalenol**, no⁸⁹⁹ first entry, **dry weight basis
- incidence: 7/7*, conc. range: 58–264 $\mu\text{g}/\text{kg}$ **, \emptyset conc.: 134.1 $\mu\text{g}/\text{kg}$ **, sample year: unknown, country: UK⁸⁹⁹, *please see also **Bread, Deoxynivalenol**, no⁸⁹⁹ second entry, **dry weight basis
- incidence: 2/2*, conc. range: 27–131 $\mu\text{g}/\text{kg}$ **, \emptyset conc.: 79 $\mu\text{g}/\text{kg}$ **, sample year: unknown, country: UK⁸⁹⁹, *please see also **Cake, Deoxynivalenol**, no⁸⁹⁹ first entry, **dry weight basis
- incidence: 5/5*, conc. range: 19–85 $\mu\text{g}/\text{kg}$ **, \emptyset conc.: 41.2 $\mu\text{g}/\text{kg}$ **, sample year: unknown, country: UK⁸⁹⁹, *please see also **Cake, Deoxynivalenol**, no⁸⁹⁹ second entry, **dry weight basis
- incidence: 1/1*, conc.: 71 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁸⁹⁹, *please see also **Biscuit *semi sweet biscuit, Deoxynivalenol**, no⁸⁹⁹ first entry
- incidence: 3/3*, conc. range: 71–1,040 $\mu\text{g}/\text{kg}$, \emptyset conc.: 513.3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁸⁹⁹, *please see also **Biscuit *crackers, Deoxynivalenol**, no⁸⁹⁹ second entry
- incidence: 1/3, conc.: 237 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK
- incidence: 16/37, conc. range: 3.1–172.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 43.4 $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Korea⁹³⁸
- incidence: 3/12, conc. range: 150–1,100 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan¹⁰²⁵ (1 sa co-contaminated with CIT, DON and OTA, 1 sa co-contaminated with DON and OTA; no further information available)
- incidence: 1/8, conc.: 400.0 $\mu\text{g}/\text{kg}$, sample year: 2006–2008, country: Brazil/Japan¹⁰²⁸, sa from Brazil
- incidence: 39/39, conc. range: ≤ 613 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²
- incidence: 11/11*, conc. range: ≤ 131 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour
- incidence: 25/27, conc. range: $\leq 4,280$ $\mu\text{g}/\text{kg}$, sample year: unknown, country: China¹¹⁵²
- incidence: 18/44, \emptyset conc.: 40 $\mu\text{g}/\text{kg}$, sample year 2005–2008, country: Korea¹³⁰³
- incidence: 40/40* **, conc. range: tr (5 sa), 153–250 $\mu\text{g}/\text{kg}$ (22 sa), 250.1–500 $\mu\text{g}/\text{kg}$ (9 sa), 500.1–750 $\mu\text{g}/\text{kg}$ (9 sa, maximum: 661 $\mu\text{g}/\text{kg}$), sample year: 2002/2003, country: Belgium¹³⁵¹, *conventional, **wholemeal wheat flour
- incidence: 28/40* **, conc. range: tr (16 sa), 157–210 $\mu\text{g}/\text{kg}$ (12 sa, maximum: 210 $\mu\text{g}/\text{kg}$), sample year: 2002/2003, country: Belgium¹³⁵¹, *organic, **wholemeal wheat flour
- incidence: 14/14, conc. range: ≤ 465 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Denmark¹³⁵⁵
- incidence: 16/16, conc. range: ≤ 527 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Denmark¹³⁵⁵
- incidence: 26/28, conc. range: ≤ 330 $\mu\text{g}/\text{kg}$, sample year: 2000, country: Denmark¹³⁵⁵
- incidence: 19/30, conc. range: ≤ 204 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Denmark¹³⁵⁵

incidence: 23/23*, conc. range: $\leq 2,591$ $\mu\text{g}/\text{kg}$, sample year: 2000, country: Denmark¹³⁵⁵, *durum wheat flour

incidence: 10/10*, conc. range: $\leq 1,619$ $\mu\text{g}/\text{kg}$, sample year: 2001, country: Denmark¹³⁵⁵, *durum wheat flour

incidence: 29/36, conc. range: ≤ 706 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Denmark¹³⁵⁶

incidence: 26/27, conc. range: ≤ 224 $\mu\text{g}/\text{kg}$, sample year: 2003, country: Denmark¹³⁵⁶

incidence: 5/25, conc. range: 45–367 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain¹³⁸¹

incidence: 1/1* **, conc.: 125 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan¹⁴⁴³, *1st break flour, **made from **Wheat, Deoxynivalenol**, no¹⁴⁴³ and please see also **Flour (wheat) 1st–3rd middling flour, Deoxynivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 92 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan¹⁴⁴³, *2nd break flour, **made from **Wheat, Deoxynivalenol**, no¹⁴⁴³ and please see also **Flour (wheat) 1st–3rd middling flour, Deoxynivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 79 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan¹⁴⁴³, *3rd break flour, **made from **Wheat, Deoxynivalenol**, no¹⁴⁴³ and please see also **Flour (wheat) 1st–3rd middling flour, Deoxynivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 108 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan¹⁴⁴³, *1st middling flour, **made from **Wheat, Deoxynivalenol**, no¹⁴⁴³ as well as **Flour (wheat) 1st–3rd break flour, Deoxynivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 114 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan¹⁴⁴³, *2nd middling flour, **made from **Wheat, Deoxynivalenol**, no¹⁴⁴³ as well as **Flour (wheat) 1st–3rd break flour, Deoxynivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 115 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan¹⁴⁴³, *3rd

middling flour, **made from **Wheat, Deoxynivalenol**, no¹⁴⁴³ as well as **Flour (wheat) 1st–3rd break flour, Deoxynivalenol**, no¹⁴⁴³

incidence: 141/272*, conc. range: 100–2,630 $\mu\text{g}/\text{kg}$, sample year: 1994, country: USA¹⁴⁵⁵, *white flour

incidence: 36/90*, conc. range: 150–3,800 $\mu\text{g}/\text{kg}$, sample year: 1994, country: USA¹⁴⁵⁵, *whole wheat flour

incidence: 9/9* **, conc. range: 3–1,478 $\mu\text{g}/\text{kg}$, \emptyset conc.: 503.2 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Brazil, Chile, England, Poland, and Romania, *ncac, **wheat flour and whole wheat flour (8 sa co-contaminated with DON and DON3G)

3-ACETYLDEOXYNIVALENOL

incidence: 1/19*, conc.: 11 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Germany⁵¹⁹, *whole-grain wheat flour

incidence: 15/39, conc. range: ≤ 5.2 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

incidence: 7/11*, conc. range: ≤ 1.8 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour

15-ACETYLDEOXYNIVALENOL

incidence: 2/19*, conc. range: 15 $\mu\text{g}/\text{kg}$, \emptyset conc.: 15 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Germany⁵¹⁹, *whole-grain wheat flour

incidence: 8/39, conc. range: ≤ 8.8 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

incidence: 7/11*, conc. range: ≤ 2.1 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour

ACETYLDEOXYNIVALENOL

incidence: 4/22*, conc. range: 600–2,400 $\mu\text{g}/\text{kg}$, sample year: 1987, country: India⁴³⁰, *refined wheat flour

incidence: 4/37*, conc. range: 640–2,490 µg/kg, sample year: unknown, country: India⁷⁸⁸, *refined wheat flour partly rain-affected

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 8/8* **, conc. range: 2.6–109 µg/kg, Ø conc.: 41.75 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Brazil, Chile, England, Poland, and Romania, *ncac, **wheat flour and whole wheat flour (8 sa co-contaminated with DON and DON3G)

FUMONISIN B₁

incidence: 13/16, conc. range: ≤400 µg/kg, sample year: unknown, country: China¹⁴³⁷ (13 sa co-contaminated with AFB₁ and FB₁)

HT-2 TOXIN

incidence: 1/13*, conc.: 12 µg/kg, sample year: 1999, country: Germany⁵¹⁹, *white wheat flour

incidence: 3/19*, conc. range: 12 µg/kg, Ø conc.: 12 µg/kg, sample year: 1999, country: Germany⁵¹⁹, *whole-grain wheat flour

incidence: 38/39, conc. range: ≤11 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 11/11*, conc. range: ≤2.2 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour

incidence: 4/9, conc. range: ≤33 µg/kg, sample year: 1998, country: Denmark¹³⁵⁵

incidence: 1/7, conc.: 31 µg/kg, sample year: 1999, country: Denmark¹³⁵⁵

incidence: 1/10, conc.: 26 µg/kg, sample year: 2000, country: Denmark¹³⁵⁵

MONILIFORMIN

incidence: 2/2, conc. range: 3.1–6.5 µg/kg, Ø conc.: 4.8 µg/kg, sample year: unknown, country: Germany¹⁴⁶¹

NEOSOLANIOL

incidence: 1/39, conc.: 0.17 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 1/11*, conc.: 0.04 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour

NIVALENOL

incidence: 2/22*, conc. range: 30–100 µg/kg, Ø conc.: 65 µg/kg, sample year: 1987, country: India⁴³⁰, *refined wheat flour

incidence: 1/28*, conc.: 25 µg/kg, sample year: 1999, country: Germany⁵¹⁹, *white wheat flour

incidence: 1/13*, conc.: 25 µg/kg, sample year: 1999, country: Germany⁵¹⁹, *white wheat flour

incidence: 5/19*, conc. range: 25–40 µg/kg, Ø conc.: 28 µg/kg, sample year: 1999, country: Germany⁵¹⁹, *whole-grain wheat flour

incidence: 12/36, conc. range: 4–84 µg/kg, Ø conc.: 24 µg/kg, sample year: 1982–1985, country: Japan⁵³¹, sa from Japan and unknown origin (2 sa co-contaminated with DON, NIV, and ZEA, 8 sa co-contaminated with DON and NIV, 2 sa contaminated solely with NIV)

incidence: 1/6, conc.: 12 µg/kg, sample year: unknown, country: Japan⁵³², sa from Japan and unknown origin (1 sa co-contaminated with DON and NIV)

incidence: 1/1*, conc.: 310 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *fine-ground biscuit

incidence: 2/37*, conc. range: 38–100 µg/kg, sample year: unknown, country: India⁷⁸⁸, *refined wheat flour partly rain-affected

incidence: 2/2*, conc. range: 11–14 µg/kg, Ø conc.: 12.5 µg/kg, country: UK⁸⁹⁹, *please see also **Biscuit *crackers, Nivalenol**, no⁸⁹⁹

incidence: 22/39, conc. range: ≤77 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 10/11*, conc. range: ≤62 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour

incidence: 29/29, conc. range: 102–2,105 µg/kg, Ø conc.: 706.3 µg/kg, sample year: unknown, country: China¹¹⁵²

incidence: 5/14, conc. range: ≤172 µg/kg, sample year: 1998, country: Denmark¹³⁵⁵

incidence: 3/16, conc. range: ≤15 µg/kg, sample year: 1999, country: Denmark¹³⁵⁵

incidence: 2/28, conc. range: ≤10 µg/kg, sample year: 2000, country: Denmark¹³⁵⁵

incidence: 14/29, conc. range: ≤189 µg/kg, sample year: 2001, country: Denmark¹³⁵⁵

incidence: 23/23*, conc. range: ≤440 µg/kg, sample year: 1998, country: Denmark¹³⁵⁵, *durum wheat flour

incidence: 10/10*, conc. range: ≤83 µg/kg, sample year: 1998, country: Denmark¹³⁵⁵, *durum wheat flour

incidence: 9/25, conc. range: <LOQ–105 µg/kg, sample year: unknown, country: Spain¹³⁸¹

incidence: 1/1* **, conc.: 138 µg/kg, country: Japan¹⁴⁴³, *1st break flour, **made from **Wheat, Nivalenol**, no¹⁴⁴³ and please see also **Flour (wheat) 1st–3rd middling flour, Nivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 148 µg/kg, sample year: 1984, country: Japan¹⁴⁴³, *2nd break flour, **made from **Wheat, Nivalenol**, no¹⁴⁴³ and please see also **Flour (wheat) 1st–3rd middling flour, Nivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 155 µg/kg, sample year: 1984, country: Japan¹⁴⁴³, *3rd break flour, **made from **Wheat, Nivalenol**, no¹⁴⁴³ and please see also **Flour (wheat) 1st–3rd middling flour, Nivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 129 µg/kg, sample year: 1984, country: Japan¹⁴⁴³, *1st middling flour, **made from **Wheat, Nivalenol**, no¹⁴⁴³ as well as **Flour (wheat) 1st–3rd break flour, Nivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 160 µg/kg, sample year: 1984, country: Japan¹⁴⁴³,

*2nd middling flour, **made from **Wheat, Nivalenol**, no¹⁴⁴³ as well as **Flour (wheat) 1st–3rd break flour, Nivalenol**, no¹⁴⁴³

incidence: 1/1* **, conc.: 157 µg/kg, sample year: 1984, country: Japan¹⁴⁴³, *3rd middling flour, **made from **Wheat, Nivalenol**, no¹⁴⁴³ as well as **Flour (wheat) 1st–3rd break flour, Nivalenol**, no¹⁴⁴³

MONOACETOXYSCIRPENOL

incidence: 36/39, conc. range: ≤1.6 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 11/11*, conc. range: ≤1.4 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour

DIACETOXYSCIRPENOL

incidence: 1/39, conc.: 0.25 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TOXIN

incidence: 2/22*, conc. range: 550–800 µg/kg, Ø conc.: 675 µg/kg, sample year: 1987, country: India⁴³⁰, *refined wheat flour

incidence: 1/19*, conc.: 4 µg/kg, sample year: 1999, country: Germany⁵¹⁹, *whole-grain wheat flour

incidence: 1/37*, conc.: 800 µg/kg, sample year: unknown, country: India⁷⁸⁸, *refined wheat flour partly rain-affected

incidence: 33/39, conc. range: ≤1.2 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 11/11*, conc. range: ≤0.25 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *whole wheat flour

incidence: 1/9, conc.: 10 µg/kg, sample year: 1998, country: Denmark¹³⁵⁵

incidence: 1/10, conc.: 10 µg/kg, sample year: 2000, country: Denmark¹³⁵⁵

incidence: 9/10*, conc. range: ≤153 µg/kg, sample year: 2000, country: Denmark¹³⁵⁵, *durum wheat flour

T-2 TETRAOL

incidence: 8/39, conc. range: ≤ 25 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²²

incidence: 8/11*, conc. range: ≤ 3.4 $\mu\text{g}/\text{kg}$,
sample year: 2005/2006, country:
Germany¹¹²², *whole wheat flour

T-2 TRIOL

incidence: 1/39, conc.: 1.4 $\mu\text{g}/\text{kg}$, sample year:
2005/2006, country: Germany¹¹²²

incidence: 1/11*, conc.: 0.25 $\mu\text{g}/\text{kg}$, sample
year: 2005/2006, country: Germany¹¹²²,
*whole wheat flour

ZEARALENONE

incidence: 2/17*, conc. range: 12–14 $\mu\text{g}/\text{kg}$, \emptyset
conc.: 13 $\mu\text{g}/\text{kg}$, sample year: 1989, country:
USA⁴²⁴, *wheat flour/muffin mix

incidence: 3/28*, conc. range: 1–2 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 1 $\mu\text{g}/\text{kg}$, sample year: 1999,
country: Germany⁵¹⁹, *white
wheat flour

incidence: 4/13*, conc. range: 1–8 $\mu\text{g}/\text{kg}$, \emptyset
conc.: 4 $\mu\text{g}/\text{kg}$, sample year: 1999, country:
Germany⁵¹⁹, *white wheat flour

incidence: 15/19*, conc. range: 2–24 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 6 $\mu\text{g}/\text{kg}$, sample year: 1999,
country: Germany⁵¹⁹, *whole-grain wheat
flour

incidence: 3/27, conc. range: 1–6 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 3 $\mu\text{g}/\text{kg}$, sample year: 1982–1985,
country: Japan⁵³¹, sa from Japan and
unknown origin (2 sa co-contaminated
with DON, NIV, and ZEA, 1 sa
co-contaminated with DON and ZEA)

incidence: 1/3, conc.: 3 $\mu\text{g}/\text{kg}$, sample year:
1984, country: Japan⁵⁴⁹, sa from China (1 sa
co-contaminated with DON and ZEA)

incidence: 1/1*, conc.: 250 $\mu\text{g}/\text{kg}$, sample
year: 1991, country: Papua, New Guinea/
Japan⁵⁷⁴, sa from Australia, *raw wheat
flour

incidence: ?/3, conc. range: < 10 $\mu\text{g}/\text{kg}$,
sample year: unknown, country: Austria/
UK⁹²⁷, sa from UK

incidence: 6/15, conc. range: ≤ 2 $\mu\text{g}/\text{kg}$, sample
year: 1998, country: Denmark¹³⁵⁵

incidence: 4/15, conc. range: ≤ 2 $\mu\text{g}/\text{kg}$,
sample year: 1999, country: Denmark¹³⁵⁵

incidence: 6/18*, conc. range: 2–5 $\mu\text{g}/\text{kg}$
(4 sa), 5–10 $\mu\text{g}/\text{kg}$ (2 sa), sample year:
1999–2001, country: Switzerland¹³⁶⁰,
*whole meal flour

incidence: 1/25, conc.: 39.3 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Spain¹³⁸¹

incidence: 1/1* **, conc.: 1 $\mu\text{g}/\text{kg}$, sample
year: 1984, country: Japan¹⁴⁴³, *3rd break
flour, **made from **Wheat, Zearalenone**,
no¹⁴⁴³ and please see also **Flour (wheat)**
3rd middling flour, Zearalenone, no¹⁴⁴³

incidence: 1/1* **, conc.: 1 $\mu\text{g}/\text{kg}$, sample
year: 1984, country: Japan¹⁴⁴³, *3rd
middling flour, **made from **Wheat**,
Zearalenone, no¹⁴⁴³ as well as **Flour**
(wheat) 1st–3rd break flour,
Zearalenone, no¹⁴⁴³

ZEARALENONE-4-SULFATE

incidence: 1/3, conc.: 2.0 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Austria/UK⁹²⁷,
sa from UK

see also Meal (wheat meal)

Food may contain the following
mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 2/7*, conc. range: 8.0–28.4 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 18.2 $\mu\text{g}/\text{kg}$, sample year:
2010, country: Austria/Nigeria¹⁴⁹³, sa from
Mozambique, *included millet, soy, and
waste product from feed production

ALTERNARIOL METHYL ETHER

incidence: 3/30*, conc. range: 12.4–
17.2 $\mu\text{g}/\text{kg}$, sample year: 2010, country:
Austria/Nigeria¹⁴⁹³, sa from Burkina
Faso, *included dried fruits, grain based
processed foods, millet, rice, sesame,
sorghum, and wheat

incidence: 3/7*, conc. range: 9.0–44.5 $\mu\text{g}/\text{kg}$,
sample year: 2010, country: Austria/
Nigeria¹⁴⁹³, sa from Mozambique,
*included millet, soy, and waste product
from feed production

ALBERTOXIN I

incidence: 1/30*, conc.: 3.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat
 incidence: 1/7*, conc.: 10.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

Aspergillus ToxinsAFLATOXIN B₁

incidence: 30/322*, conc. range: ≤793 µg/kg, Ø conc.: 60 µg/kg, sample year: 1997–1999, country: Brazil¹²⁹, *cooked food
 incidence: 4/4*, conc. range: 8–11 µg/kg, sample year: 1998/1999, country: Korea⁷⁸⁵, *barley-based food
 incidence: 4/4*, conc. range: 8–10 µg/kg, sample year: 1998/1999, country: Korea⁷⁸⁵, *maize-based food
 incidence: 77/209, conc. range: 0.7–50.0 µg/kg, sample year: 2004/2005, country: Tunisia¹⁰⁹⁸
 incidence: 1*/13, conc.: 20 µg/kg, sample year: 1985, country: USA¹²³⁷, *peanut butter
 incidence: 1/41, conc.: 0.64 µg/kg, sample year: 2008, country: Iran¹³⁴¹, *Kashkineh: grinded and soaked wheat mixed with churned sour yogurt
 incidence: 175/2,183*, Ø conc.: 38.1 µg/kg, sample year: 1969–1974, country: South Africa/UK¹³⁵⁹, sa from Mozambique, *meals
 incidence: 4/30*, conc. range: 3.1–19.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat
 incidence: 3/7*, conc. range: 3.8–427 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique,

*included millet, soy, and waste product from feed production

incidence: 34/711* **, conc. range: >0.2–2.0 µg/kg (27 sa), >2.0–10.0 µg/kg (6 sa), >10.0–20.0 µg/kg (1 sa), sample year: 2007, country: Turkey¹⁵⁶⁰, *commercial Turkish foods, **high sugar and nuts

incidence: 19/275* **, conc. range: >0.2–2.0 µg/kg (12 sa), >2.0–10.0 µg/kg (6 sa), >10.0–20.0 µg/kg (1 sa), sample year: 2008, country: Turkey¹⁵⁶⁰, *commercial Turkish foods, **high sugar and nuts

incidence: 16/43* **, conc. range: >0.2–2.0 µg/kg (12 sa), >2.0–10.0 µg/kg (2 sa), >10.0–20.0 µg/kg (2 sa), sample year: 2009, country: Turkey¹⁵⁶⁰, *commercial Turkish foods, **high sugar and nuts

incidence: 1/49* **, conc. range: >0.2–2.0 µg/kg (1 sa), sample year: 2007, country: Turkey¹⁵⁶⁰, *commercial Turkish foods, **dried fruits and vegetables

incidence: 1/60* **, conc. range: >0.2–2.0 µg/kg (1 sa), sample year: 2008, country: Turkey¹⁵⁶⁰, *commercial Turkish foods, **dried fruits and vegetables

incidence: 9/13*, conc. range: 0.68–3.79 µg/kg, Ø conc.: 1.75 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰, *rice based foods (cookies, emping hijau, emping putih, and rice flour)

incidence: 9/14*, conc. range: 0.55–5.07 µg/kg, Ø conc.: 1.60 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰, *wheat based foods (cookies, noodles, and wheat flour)

incidence: 6/8*, conc. range: 1.75–8.95 µg/kg, Ø conc.: 3.86 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰, *corn based foods (cookies, cornflakes, and corn flour)

incidence: 5/10*, conc. range: 0.65–2.85 µg/kg, Ø conc.: 1.25 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰, *oats based foods (oat bran, oat meal, and rolled oat)

incidence: 4/22*, conc. range: 0.02–0.12 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴, *vegetables (dried), fruits (dried), and raisins

AFLATOXIN B₂

incidence: 28/322*, conc. range: ≤194 µg/kg, Ø conc.: 30 µg/kg, sample year: 1997–1999, country: Brazil¹²⁹, *cooked food

incidence: 61/2,183*, Ø conc.: 7.4 µg/kg, sample year: 1969–1974, country: South Africa/UK¹³⁵⁹, sa from Mozambique, *meals

incidence: 1/7*, conc.: 51.3 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

AFLATOXIN G₁

incidence: 16/322*, conc. range: ≤268 µg/kg, Ø conc.: 52 µg/kg, sample year: 1997–1999, country: Brazil¹²⁹, *cooked food

incidence: 18/2,183*, Ø conc.: 13.7 µg/kg, sample year: 1969–1974, country: South Africa/UK¹³⁵⁹, sa from Mozambique, *meals

incidence: 1/7*, conc.: 382 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

incidence: 2/22*, conc. range: 0.29–0.48 µg/kg, Ø conc.: 0.385 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴, *vegetables (dried), fruits (dried), and raisins

AFLATOXIN G₂

incidence: 21/322*, conc. range: ≤152 µg/kg, Ø conc.: 20 µg/kg, sample year: 1997–1999, country: Brazil¹²⁹, *cooked food

incidence: 15/2,183*, Ø conc.: 4.4 µg/kg, sample year: 1969–1974, country: South Africa/UK¹³⁵⁹, sa from Mozambique, *meals

incidence: 1/7*, conc.: 48.6 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

AFLATOXIN M₁

incidence: 1/7*, conc.: 6.4 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

AFLATOXIN

incidence: 8/30, conc. range: 1–5 µg/kg (3 sa), 6–15 µg/kg (2 sa), 16–25 µg/kg (1 sa), 26–50 µg/kg (2 sa), sample year: unknown, country: France/England/GermanyUSA/Gambia¹⁴⁹⁴, sa from Gambia

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 22/364*, conc. range: ≤3,904 µg/kg, Ø conc.: 510 µg/kg, sample year: 1967–1969, country: Thailand¹⁶³, *prepared food

incidence: ?/8*, conc. range: 0.2–1.4 µg/kg, sample year: unknown, country: UK⁷³², *canned food

AFLATOXINS (TOTAL)

incidence: 55/68*, conc. range: 0.065–25.753 µg/kg, sample year: 2003, country: Turkey¹⁵²⁰, *instant foods; for detailed information please see the article

incidence: 3/35*, conc. range: ≤14.2 µg/kg, Ø conc.: 8.2 µg/kg, sample year: 2008/2009, country: Spain¹⁵³⁶, *ethnic food

AFLATOXINS

incidence: 23/102, conc. range: 0.1–5 µg/kg (17 sa), 6–10 µg/kg (2 sa), 11–20 µg/kg (2 sa), 21–35 µg/kg (1 sa), >50 µg/kg (1 sa), sample year: 1995–1999, country: Malaysia³⁹¹

incidence: 106/209, conc. range: 1.5–87.5 µg/kg, sample year: 2004/2005, country: Tunisia¹⁰⁹⁸

STERIGMATOCYSTIN

incidence: 2/30*, conc. range: 4.8–8.6 µg/kg, Ø conc.: 6.7 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 2/7*, conc. range: 3.0–49.2 µg/kg, Ø conc.: 26.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 10/33*, conc. range: 22–105 µg/kg, sample year: unknown, country: Germany⁷¹⁵, *vegetarian “meat-like” and Asian food

incidence: 1/7*, conc.: 7,061 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

CYCLOPIAZONIC ACID

incidence: 1/7*, conc.: 789 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

3-NITROPROPIONIC ACID

incidence: 6/30*, conc. range: 85.6–1,629 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 2/7*, conc. range: 95.0–3,228 µg/kg, Ø conc.: 1,661.5 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

OCHRATOXIN A

incidence: 5/80, conc. range: 0.3–64.3 µg/kg, sample year: unknown, country: Germany³¹¹, *food and drug sa containing liquorice root

incidence: ?/8*, conc. range: 0.1–0.3 µg/kg, sample year: unknown, country: UK⁷³², *canned food

incidence: 4/4*, conc. range: 7–8 µg/kg, sample year: 1998/1999, country: Korea⁷⁸⁵, *barley-based food

incidence: 125/209, conc. range: 0.8–36.4 µg/kg, sample year: 2004/2005, country: Tunisia¹⁰⁹⁸

incidence: 3/52*, conc. range: 2.7–5.8 µg/kg, sample year: unknown, country: China¹¹⁷⁵, *included cereal products, coffee, and wheat flour

incidence: 23/69, conc. range: 2–30 µg/kg (23 sa), sample year: 1972–1978, country: Yugoslavia/Sweden/USA¹³³⁹, sa from Yugoslavia

incidence: 1/30*, conc.: 13.8 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 1/7*, conc.: 5.7 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

incidence: 6/6*, conc. range: 0.02–11.90 µg/kg, Ø conc.: 3.11 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴, *coffee and cocoa

incidence: 1/6*, conc.: 0.02–0.08 µg/kg?, sample year: 2005, country: Poland¹⁶⁵⁴, *raisins and fruit (dried)

Fusarium Toxins

BEAUVERICIN

incidence: 16/30*, conc. range: 0.1–47.0 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 7/7*, conc. range: 3.5–486 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

DEOXYNIVALENOL

incidence: 30/42*, conc. range: ≤2,000 µg/kg, sample year: unknown, country: Germany⁴³², *rice (broken), rye, wheat and cereal products

incidence: 15/29, conc. range: 15–505 µg/kg, Ø conc.: 138 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 133/173*, conc. range: 15–624 µg/kg, Ø conc.: 97 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *conventional

incidence: 35/64*, conc. range: 15–1,670 µg/kg, Ø conc.: 128 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *organic

incidence: 9/23*, conc. range: 11–227 µg/kg, Ø conc.: 55 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *gluten-free food

incidence: 9/10*, conc. range: 9–140 µg/kg, Ø conc.: 70 µg/kg, sample year: 1980/1981, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 150/270*, conc. range: 20–4,060 µg/kg, Ø conc.: 250 µg/kg, sample year: 1982/1983, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 101/155*, conc. range: 20–1,150 µg/kg, Ø conc.: 220 µg/kg, sample year: 1983/1984, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 75/167*, conc. range: 10–1,150 µg/kg, Ø conc.: 180 µg/kg, sample year: 1984/1985, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 31/87*, conc. range: 20–750 µg/kg, Ø conc.: 170 µg/kg, sample year: 1985/1986, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 31/91*, conc. range: 80–1,600 µg/kg, Ø conc.: 370 µg/kg, sample year: 1986/1987, country: Canada⁵²¹, *wheat-based food: flour, bran,

bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 9/42*, conc. range: 20–1,030 µg/kg, Ø conc.: 570 µg/kg, sample year: 1987/1988, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 5/55*, conc. range: 30–1,080 µg/kg, Ø conc.: 580 µg/kg, sample year: 1988/1989, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 1/2*, conc.: 220 µg/kg, sample year: 1989/1990, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 3/14*, conc. range: 100–700 µg/kg, Ø conc.: 310 µg/kg, sample year: 1990/1991, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 1/7*, conc.: 130 µg/kg, sample year: 1991/1992, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 21/57*, conc. range: 50–1,700 µg/kg, Ø conc.: 520 µg/kg, sample year: 1992/1993, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 18/54*, conc. range: 20–400 µg/kg, Ø conc.: 170 µg/kg, sample year: 1993/1994, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 26/59*, conc. range: 20–1,000 µg/kg, Ø conc.: 250 µg/kg, sample year: 1994/1995, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: 63/187*, conc. range: 40–2,750 µg/kg, Ø conc.: 320 µg/kg, sample year: 1995/1996, country: Canada⁵²¹, *wheat-based food: flour, bran, bread, cookies, crackers, cakes, pasta etc. Imports included

incidence: ?/8*, conc. range: 4–9 µg/kg, sample year: unknown, country: UK⁷³², *canned food

incidence: 8/9*, conc. range: 7.1–191.0 µg/kg, Ø conc.: 43.2 µg/kg, sample year: 2005/2006, country: Italy¹²²⁰, *cereal-based food; for detailed information please see the article

incidence: 6/45*, conc. range: 11–260 µg/kg, Ø conc.: 67.17 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

incidence: 10/30*, conc. range: 22.3–250 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 1/7*, conc.: 145 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

3-ACETYLDEOXYNIVALENOL

incidence: 2/29, conc. range: 11 µg/kg, Ø conc.: 11 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 1/45*, conc.: 14 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

15-ACETYLDEOXYNIVALENOL

incidence: 5/23*, conc. range: 11–98 µg/kg, Ø conc.: 33 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *gluten-free food

incidence: 1/45*, conc.: 11 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

DEOXYNIVALENOL-3-D-GLUCOSIDE

incidence: 2/30*, conc. range: 23.6–39.7 µg/kg, Ø conc.: 31.7 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

ENNIATIN A

incidence: 6/30*, conc. range: 0.3–1.4 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 2/7*, conc. range: 0.2–2.0 µg/kg, Ø conc.: 1.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

ENNIATIN A₁

incidence: 8/30*, conc. range: 0.2–9.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 2/7*, conc. range: 0.2–4.1 µg/kg, Ø conc.: 2.15 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

ENNIATIN B

incidence: 8/30*, conc. range: 1.2–16.4 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 1/7*, conc.: 0.9 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

ENNIATIN B₁

incidence: 8/30*, conc. range: 0.9–21.4 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 1/7*, conc.: 4.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

ENNIATIN B₂

incidence: 4/30*, conc. range: 0.2–0.8 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

FUMONISIN B₁

incidence: 7/9*, conc. range: 43–119 µg/kg, sample year: 1998/1999, country: Korea⁷⁸⁵, *maize-based food

incidence: 1/30*, conc.: 73.8 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 3/7*, conc. range: 273–45,450 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

incidence: 7/39*, conc. range: 210–280 µg/kg, Ø conc.: 250 µg/kg, sample year: 2005/2006, country: China/USA¹⁶⁵⁰, sa from China, *processed food

incidence: 16/48*, conc. range: 310–630 µg/kg, Ø conc.: 470 µg/kg, sample year: 2005/2006, country: China/USA¹⁶⁵⁰, sa from China, *unprocessed food

incidence: 1/6*, conc.: 280 µg/kg, sample year: 2005/2006, country: China/USA¹⁶⁵⁰, sa from China, *vacuum-packaging cooked corn cob

FUMONISIN B₂

incidence: 1/30*, conc.: 28.2 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 4/7*, conc. range: 11.5–15,254 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

FUMONISIN B₃

incidence: 3/7*, conc. range: 74.8–5,115 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

FUMONISINS (B₁, B₂)

incidence: 7/13*, conc. range: 28–618 µg/kg, Ø conc.: 170 µg/kg, sample year: 2008/2009, country: Italy¹⁹², *gluten-free maize food

incidence: 1/18*, conc.: 22.5 µg/kg, sample year: 2008/2009, country: Spain¹⁴³⁰, *corn-based free-gluten food

incidence: 18/35*, conc. range: ≤682.2 µg/kg, Ø conc.: 196.7 µg/kg, sample year: 2008/2009, country: Spain¹⁴³⁰, *corn-based ethnic food

FUMONISINS (B₁, B₂, B₃)

incidence: 15/24*, conc. range: 11–100 µg/kg (14 sa), 104.6 µg/kg (1 sa), sample year: unknown, country: Indonesia¹⁶⁵⁵, *industrially-produced, maize-based food

incidence: 16/17*, conc. range: 11–100 µg/kg (14 sa), 101–500 µg/kg (2 sa, maximum: 234.1 µg/kg), sample year: unknown, country: Indonesia¹⁶⁵⁵, *maize-based products of small food manufacturers

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/8*, conc.: 15 µg/kg, sample year: unknown, country: UK⁷³², *canned food

HT-2 TOXIN

incidence: 11/29, conc. range: 12–51 µg/kg, Ø conc.: 21 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 2/23*, conc. range: 5 µg/kg, Ø conc.: 5 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *gluten-free food

incidence: 6/9*, conc. range: 0.5–8.0 µg/kg, Ø conc.: 3.5 µg/kg, sample year: 2005/2006, country: Italy¹²²⁰, *cereal-based food; for detailed information please see the article

incidence: 3/45*, conc. range: 5–11 µg/kg, Ø conc.: 7 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

MONILIFORMIN

incidence: 5/30*, conc. range: 70.2–320 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 4/7*, conc. range: 46.8–1,923 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

NIVALENOL

incidence: 16/42*, conc. range: ≤120 µg/kg, sample year: unknown, country: Germany⁴³², *rice (broken), rye, wheat and cereal products

incidence: 2/29, conc. range: 25–231 µg/kg, Ø conc.: 128 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 1/23*, conc.: 21 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *gluten-free food

incidence: 1/8*, conc.: 18 µg/kg, sample year: unknown, country: UK⁷³², *canned food

incidence: 3/9*, conc. range: tr–6.3 µg/kg, Ø conc.: 3.3 µg/kg, sample year: 2005/2006, country: Italy¹²²⁰, *cereal-based food; for detailed information please see the article

incidence: 1/30*, conc.: 40.2 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 2/7*, conc. range: 76.8–113 µg/kg, Ø conc.: 94.9 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

MONOACETOXYSCIRPENOL

incidence: 4/45*, conc. range: 5–34 µg/kg, Ø conc.: 12.75 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

DIACETOXYSCIRPENOL

incidence: 1/45*, conc.: 21 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

SCIRPENTRIOL

incidence: 2/45*, conc. range: 25–108 µg/kg, Ø conc.: 66.5 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy

sauce; for detailed information please see the article

T-2 TOXIN

incidence: 6/29, conc. range: 4–39 µg/kg, Ø conc.: 18 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: 1/23*, conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *gluten-free food

incidence: 5/9*, conc. range: 0.4–10.0 µg/kg, Ø conc.: 4.1 µg/kg, sample year: 2005/2006, country: Italy¹²²⁰, *cereal-based food; for detailed information please see the article

T-2 TETRAOL

incidence: 1/45*, conc.: 32 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

α-ZEARALENOL

incidence: 5/45*, conc. range: 2–11 µg/kg, Ø conc.: 4.6 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

β-ZEARALENOL

incidence: 2/45*, conc. range: 5 µg/kg, Ø conc.: 5 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

ZEARALENONE

incidence: 12/32*, conc. range: 3.4–120 µg/kg, Ø conc.: 40 µg/kg, sample year: 1998/1999, country: Korea⁵⁰⁶, *barley meal, barley flour, barley tea, barley biscuit etc.

incidence: 9/47*, conc. range: 3.6–84 µg/

kg, Ø conc.: 22 µg/kg, sample year: 1998/1999, country: Korea⁵⁰⁶, *corn meal, corn flour, corn tea, corn snack, etc.

incidence: 13/23*, conc. range: 2–14 µg/kg, Ø conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *gluten-free food

incidence: 14/126* **, conc. range: 5–178 µg/kg, Ø conc.: 26 µg/kg, sample year: 1986–1989, 1990–1993 (6 years), country: Canada⁵²¹, *ncac, **corn meal, corn flour, etc. Imports included

incidence: 1/8*, conc.: 6.1 µg/kg, sample year: unknown, country: UK⁷³², *canned food

incidence: 31/209, conc. range: 1.8–41.6 µg/kg, sample year: 2004/2005, country: Tunisia¹⁰⁹⁸

incidence: 3/4*, conc. range: 11.1–13.7 µg/kg, Ø conc.: 12.4 µg/kg, sample year: 2001, country: Indonesia/Austria¹³⁰², sa from Indonesia, *industrially-produced maize-based food

incidence: 5/5*, conc. range: 19.1–589 µg/kg, Ø conc.: 219 µg/kg, sample year: 2001, country: Indonesia/Austria¹³⁰², sa from Indonesia, *home-made maize-based food

incidence: 7/45*, conc. range: 2–214 µg/kg, Ø conc.: 47 µg/kg, sample year: unknown, country: Germany¹³⁹², *soy food: whole beans, roasted soy nuts, not defatted flour and flakes, crisp, textured soy protein, tofu, proteinisolate, and soy sauce; for detailed information please see the article

incidence: 8/30*, conc. range: 12.3–17.0 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso, *included dried fruits, grain based processed foods, millet, rice, sesame, sorghum, and wheat

incidence: 3/7*, conc. range: 78.8–318 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique, *included millet, soy, and waste product from feed production

incidence: 12/100*, conc. range: 5.3–295.8 µg/kg, Ø conc.: 92.5 µg/kg, sample year: unknown, country: China¹⁶⁵⁹, *foods and medicinal plants; for detailed information please see the article

see also Foodstuff

Food (baby food) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/7*, conc. range: 181.6–4,806 µg/l, Ø conc.: 2,493.8 µg/l, sample year: unknown, country: Nigeria¹⁰³⁰, *weaning foods (1 sa co-contaminated with AFB₁ and AFB₂, 1 sa contaminated solely with AFB₁)

incidence: 55/63*, conc. range: 0.10–6.04 µg/kg, sample year: 2003/2004, country: Turkey¹¹³⁸, *milk-, cereal- and milk + cereal-based baby food and infant formula

incidence: 6/19*, conc. range: 0.002–0.009 µg/kg, Ø conc.: 0.003 µg/kg, sample year: 2007, country: Portugal¹⁵⁵², *flour (1 sa co-contaminated with AFB₁, AFM₁, and OTA, 1 sa co-contaminated with AFB₁ and AFM₁, 3 sa co-contaminated with AFB₁ and OTA, 1 sa contaminated solely with AFB₁); for detailed information please see the article

incidence: 3/6*, conc. range: >4.0 µg/kg (3 sa, maximum: 7.0 µg/kg), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *baby food products

AFLATOXIN B₂

incidence: 4/7*, conc. range: 103–8,290 µg/l, Ø conc.: 2,311 µg/l, sample year: unknown, country: Nigeria¹⁰³⁰, *weaning foods (1 sa co-contaminated with AFB₂, AFG₁, and AFM₁, 2 sa co-contaminated with AFB₂, AFG₂, and AFM₁, 1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 1/7*, conc.: 144 µg/l, sample year: unknown, country: Nigeria¹⁰³⁰, *weaning foods (1 sa co-contaminated with AFB₂, AFG₁, and AFM₁)

AFLATOXIN G₂

incidence: 2/7*, conc. range: 1,169–1,699 µg/l, Ø conc.: 1,434 µg/l, sample year: unknown, country: Nigeria¹⁰³⁰, *weaning foods (2 sa co-contaminated with AFB₂, AFG₂, and AFM₁)

AFLATOXIN M₁

incidence: 3/7*, conc. range: 4.6–530 µg/l, Ø conc.: 220.7 µg/l, sample year: unknown, country: Nigeria¹⁰³⁰, *weaning foods (1 sa co-contaminated with AFB₂, AFG₁, and AFM₁, 2 sa co-contaminated with AFB₂, AFG₂, and AFM₁)

incidence: 38/40*, conc. range: 0.065–1.012 µg/kg, Ø conc.: 0.267 µg/kg, sample year: unknown, country: India¹⁰⁷⁹, *milk-based cereal weaning food

incidence: 23/63*, conc. range: 0.06–0.32 µg/kg, sample year: 2003/2004, country: Turkey¹¹³⁸, *milk-, cereal- and milk + cereal-based baby food and infant formula

incidence: 72/80*, conc. range: 0.003–0.035 µg/kg, sample year: 2005, country: Iran¹³¹¹, *milk-based cereal weaning food

incidence: 4/19*, conc. range: 0.008–0.023 µg/kg, Ø conc.: 0.0165 µg/kg, sample year: 2007, country: Portugal¹⁵⁵², *flour (1 sa co-contaminated with AFB₁, AFM₁, and OTA, 1 sa co-contaminated with AFB₁ and AFM₁, 2 sa co-contaminated with AFM₁ and OTA); for detailed information please see the article

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/10* **, conc. range: 0.14–0.65 µg/kg, sample year: unknown, country: Italy⁵⁷⁹, *semolina, **conventional

incidence: 0/10* **, conc. range: no contamination, sample year: unknown, country: Italy⁵⁷⁹, *semolina, **integrated

incidence: 1/10* **, conc.: 0.18 µg/kg, sample year: unknown, country: Italy⁵⁷⁹, *semolina, **organic

incidence: 0/13* **, conc. range: no contamination, sample year: unknown, country: Italy⁵⁷⁹, *rice, **conventional

incidence: 0/9* **, conc. range: no contamination, sample year: unknown, country: Italy⁵⁷⁹, *rice, **integrated

incidence: 5/11* **, conc. range: 0.24–0.74 µg/kg, sample year: unknown, country: Italy⁵⁷⁹, *rice, **organic

incidence: 8/10* **, conc. range: pr, sample year: unknown, country: Italy⁵⁷⁹, *multicereal, **conventional

incidence: 0/9* **, conc. range: no contamination, sample year: unknown, country: Italy⁵⁷⁹, *multicereal, **integrated

incidence: 0/11* **, conc. range: no contamination, sample year: unknown, country: Italy⁵⁷⁹, *multicereal, **organic

incidence: 14/15*, conc. range: ≤0.740 µg/kg, sample year: unknown, country: Spain⁶⁰⁹, *multi-cereals

incidence: 20/182, conc. range: 0.05–0.57 µg/kg, Ø conc.: 0.16 µg/kg, sample year: 2003/2004, country: UK⁸³⁷, sa from UK and different countries

incidence: 25/63*, conc. range: 0.27–4.50 µg/kg, sample year: 2003/2004, country: Turkey¹¹³⁸, *milk-, cereal- and milk + cereal-based baby food and infant formula

incidence: 4/24*, conc. range: 0.122–0.374 µg/kg, sample year: 2007, country: Turkey¹¹⁸⁴, *cereal-based baby food

incidence: 6/69*, conc. range: 0.195–0.293 µg/kg, Ø conc.: 0.233 µg/kg, sample year: 2008, country: Spain¹⁵⁴², *cereal-based baby food (multicereals)

incidence: 12/19*, conc. range: 0.010–0.212 µg/kg, Ø conc.: 0.066 µg/kg, sample year: 2007, country: Portugal¹⁵⁵², *flour (1 sa co-contaminated with AFB₁, AFM₁, and OTA, 3 sa co-contaminated with AFB₁ and OTA, 2 sa co-contaminated with AFM₁ and OTA, 6 sa contaminated solely with OTA); for detailed information please see the article

incidence: 1/1*, conc.: 0.052 µg/kg, sample year: 2007, country: Portugal¹⁵⁵², *biscuit; for detailed information please see the article

PATULIN

incidence: 1/2*, conc.: 9.1 µg/kg, sample year: unknown, country: Portugal²⁵, *75 and 100% apple-based baby food (contaminated)

incidence: 1/11*, conc.: 10 µg/l**, country: UK⁷³⁰, *baby apple and orange juices/drinks, **apple and blackcurrant drink

incidence: 3/3*, conc. range: 4–6.9 µg/kg, Ø conc.: 5.10 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴, *fruit juice containing apple pulp

incidence: 78/120* **, conc. range: 3–6 µg/kg (37 sa), 6–8 µg/kg (15 sa), 8–9 µg/kg (26 sa), sample year: 2008/2009, country: Italy⁹⁵¹, *homogenized fruit-based (60 apple tastes and 60 mixed tastes sa) baby food products, **80 conventional and 40 organic sa

incidence: 3/12*, conc. range: 6.25–10 µg/kg (3 sa, maximum: 9.2 µg/kg), sample year: 2008, country: Spain⁹⁶⁶, *apple juice

incidence: 15/36*, conc. range: 6.25–10 µg/kg (15 sa, maximum: 9.6 µg/kg), sample year: 2008, country: Spain⁹⁶⁶, *apple compote

incidence: 24/76*, conc. range: 6.25–10 µg/kg (24 sa, maximum: 8.6 µg/kg), sample year: 2008, country: Spain⁹⁶⁶, *multi-fruit compote

Fusarium Toxins

BEAUVERICIN

incidence: 1/3* **, conc.: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **conventional (1 sa co-contaminated with BEA, DON, ENB, and ENB₁)

incidence: 0/2* **, conc. range: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **organic

DEOXYNIVALENOL

incidence: 15/25*, conc. range: 15–314 µg/kg, Ø conc.: 61 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *baby and infant foods

incidence: 7/18*, conc. range: ≤90 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *cereals

incidence: 5/10*, conc. range: ≤70 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *cookies

incidence: 1/3*, conc.: 40 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *toast

incidence: 1/8*, conc.: 40 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *cream corn, noodles

incidence: 14/17, conc. range: 10–100 µg/kg (13 sa), 177 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, HT-2, NIV, and ZEA, 2 sa co-contaminated with DON and HT-2, 3 sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

incidence: 2/3* **, conc. range: 26–29 µg/kg, Ø conc.: 27.5 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **conventional (1 sa co-contaminated with DON, ENB and ENB₁, 1 sa co-contaminated with BEA, DON, ENB, and ENB₁)

incidence: 2/2* **, conc. range: 29–46 µg/kg, Ø conc.: 37.5 µg/kg, sample year: 2002,

country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **organic (1 sa co-contaminated with DON, ENA, ENA₁, ENB and ENB₁, 1 sa co-contaminated with DON, ENB and ENB₁)

3-ACETYLDEOXYNIVALENOL

incidence: 1/25*, conc.: 11 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *baby and infant foods

ENNIATIN A

incidence: 0/3* **, conc. range: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **conventional

incidence: 1/2* **, conc.: <0.6 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **organic (1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

ENNIATIN A₁

incidence: 1/3* **, conc.: <4 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **conventional (1 sa co-contaminated with ENA₁, ENB, and ENB₁)

incidence: 1/2* **, conc.: <4 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **organic (1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁)

ENNIATIN B

incidence: 3/3* **, conc. range: <3.8–10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **conventional (1 sa co-contaminated with BEA, DON, ENB, and ENB₁, 1 sa co-contaminated with DON, ENB, and ENB₁, 1 sa co-contaminated with ENA₁, ENB and ENB₁)

incidence: 2/2* **, conc. range: <3.8–26 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **organic (1 sa

co-contaminated with DON, ENA, ENA₁, ENB and ENB₁, 1 sa co-contaminated with DON, ENB, and ENB₁)

ENNIATIN B₁

incidence: 3/3* **, conc. range: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **conventional (1 sa co-contaminated with BEA, DON, ENB, and ENB₁, 1 sa co-contaminated with DON, ENB and ENB₁, 1 sa co-contaminated with ENA₁, ENB, and ENB₁)

incidence: 2/2* **, conc. range: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *ready-to-eat-baby-food, **organic (1 sa co-contaminated with DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with DON, ENB, and ENB₁)

FUMONISIN B₁

incidence: 12/12*, conc. range: 60–893 µg/kg, Ø conc.: 355 µg/kg, sample year: 2002, country: South Africa⁶¹⁵, sa from Brazil, *instant maize-based baby food

incidence: 1/27, conc.: 15.9 µg/kg, sample year: unknown, country: Spain/Italy¹⁰⁵⁶, sa from Spain (1 sa contaminated with FB₁, FB₂, and FB₃)

incidence: 6/19*, conc. range: 3–48 µg/kg, sample year: unknown, country: Italy¹²¹⁴, *commercial maize-based baby food (1 sa co-contaminated with FB₁ and FB₂, 5 sa contaminated solely with FB₁)

FUMONISIN B₂

incidence: 7/12*, conc. range: ≤145 µg/kg, Ø conc.: 90 µg/kg, sample year: 2002, country: South Africa⁶¹⁵, sa from Brazil, *instant maize-based baby food

incidence: 1/27, conc.: 9.2 µg/kg, sample year: unknown, country: Spain/Italy¹⁰⁵⁶, sa from Spain (1 sa contaminated with FB₁, FB₂, and FB₃)

incidence: 1/19*, conc.: 5 µg/kg, sample year: unknown, country: Italy¹²¹⁴, *commercial maize-based baby food (1 sa co-contaminated with FB₁ and FB₂)

FUMONISIN B₃

incidence: 7/12*, conc. range: ≤58 µg/kg, Ø conc.: 49 µg/kg, sample year: 2002, country: South Africa⁶¹⁵, sa from Brazil, *instant maize-based baby food

incidence: 1/27, conc.: 5.8 µg/kg, sample year: unknown, country: Spain/Italy¹⁰⁵⁶, sa from Spain (1 sa contaminated with FB₁, FB₂, and FB₃)

FUMONISINS (B₁, B₂)

incidence: 7/90*, conc. range: ≤50.75 µg/kg, Ø conc.: 36.4 µg/kg, sample year: 2008/2009, country: Spain¹⁴³⁰, *corn-based baby food

HT-2 TOXIN

incidence: 1/25, conc.: 12 µg/kg, sample year: 1998, country: Germany⁵¹⁷, *baby and infant foods

incidence: 3/17, conc. range: 13–17 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (1 sa co-contaminated with DON, HT-2, NIV, and ZEA, 2 sa co-contaminated with DON and HT-2)

NIVALENOL

incidence: 4/17, conc. range: 19–66 µg/kg, sample year: 2000, country: UK⁸³⁶ (1 sa co-contaminated with DON, HT-2, NIV, and ZEA, 3 sa co-contaminated with DON and NIV)

ZEARALENONE

incidence: 1/17, conc.: 11.6 µg/kg, sample year: 2000, country: UK⁸³⁶ (1 sa co-contaminated with DON, HT-2, NIV, and ZEA)

incidence: 7/30, conc. range: ≤5.4 µg/kg, Ø conc.: 4.1 µg/kg*, sample year: 2008, country: Spain¹⁵³⁵, *of pos sa?

see also Food (infant food)

Food (infant food) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 25/29*, conc. range: 0.5–4.4 µg/kg, Ø conc.: 1.06 µg/kg, sample year: unknown, country: Canada¹⁶³⁰, *different kinds of infant foods (24 sa co-contaminated with AME and AOH; 1 sa contaminated solely with AOH)

ALTERNARIOL METHYL ETHER

incidence: 27/29*, conc. range: 0.5–9.0 µg/kg, Ø conc.: 1.16 µg/kg, sample year: unknown, country: Canada¹⁶³⁰, *different kinds of infant foods (24 sa co-contaminated with AME and AOH; 3 sa contaminated solely with AME)

Aspergillus Toxins

AFLATOXIN B₁

incidence: 30/30*, conc. range: 0.004–0.161 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *soy-based infant food

incidence: 14/26*, conc. range: 0.002–0.996 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *rice-based infant food

incidence: 42/88*, conc. range: 0.002–0.080 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *mixed-grain infant food

incidence: 3/27*, conc. range: 0.003–0.009 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *barley-based infant food

incidence: 2/10, conc. range: tr–5 µg/kg, sample year: unknown, country: Argentina⁸⁵⁴

AFLATOXIN B₂

incidence: 20/30*, conc. range: 0.002–0.019 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *soy-based infant food

incidence: 11/26*, conc. range: 0.002–0.108 µg/kg, sample year: 2002–2005,

country: Canada⁵⁵⁹, *rice-based infant food

incidence: 9/88*, conc. range: 0.002–0.012 µg/kg, sample year: 2002–2005, country: Canada⁵⁵⁹, *mixed-grain infant food

AFLATOXIN M₁

incidence: 17/17*, conc. range: 0.077–0.844 µg/kg, Ø conc.: 0.350 µg/kg, sample year: unknown, country: India¹⁰⁷⁹, *infant milk food

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 66/97*, conc. range: ≤2.130 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *infant cereal food

incidence: 2/6*, conc. range: ≤0.4 µg/kg, Ø conc.: 0.37 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *oat-based infant food

incidence: 10/47*, conc. range: ≤6.9 µg/kg, Ø conc.: 1.00 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *barley-based infant food

incidence: 7/22*, conc. range: ≤0.9 µg/kg, Ø conc.: 0.47 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *soy-based infant food

incidence: 1/8*, conc.: 2.40 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *rice-based infant food

incidence: 21/72*, conc. range: ≤0.9 µg/kg, Ø conc.: 0.40 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *multi-grain infant food

incidence: 1/5*, conc.: 0.28 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *teething biscuits

Claviceps Toxins

ERGOT ALKALOIDS

incidence: 2/6*, conc. range: 5 µg/kg, Ø conc.: 5 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *oat-based infant food

incidence: 31/55*, conc. range: ≤ 108 $\mu\text{g}/\text{kg}$, \emptyset conc.: 32 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *barley-based infant food

incidence: 6/75*, conc. range: ≤ 47 $\mu\text{g}/\text{kg}$, \emptyset conc.: 15 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *multi-grain infant food

incidence: 2/9*, conc. range: 4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *teething biscuits

Fusarium Toxins

DEOXYNIVALENOL

incidence: 33/53*, conc. range: ≤ 90 $\mu\text{g}/\text{kg}$, \emptyset conc.: 52 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *oat-based infant food

incidence: 29/50*, conc. range: ≤ 980 $\mu\text{g}/\text{kg}$, \emptyset conc.: 260 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *barley-based infant food

incidence: 8/8*, conc. range: ≤ 240 $\mu\text{g}/\text{kg}$, \emptyset conc.: 116 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *soy-based infant food

incidence: 62/86*, conc. range: ≤ 400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 116 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *multi-grain infant food

incidence: 18/24*, conc. range: ≤ 120 $\mu\text{g}/\text{kg}$, \emptyset conc.: 60 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *teething biscuits

incidence: 5/10, conc. range: 250–1,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 610 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Argentina⁸⁵⁴

incidence: 5/5*, conc. range: ≤ 24 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *wheat-containing infant food

incidence: 7/13*, conc. range: ≤ 6.5 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹², *oat-containing infant food

3-ACETYLDEOXYNIVALENOL

incidence: 1/5*, conc.: 1.5 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *wheat-containing infant food

incidence: 3/13*, conc. range: ≤ 0.78 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

15-ACETYLDEOXYNIVALENOL

incidence: 3/5*, conc. range: ≤ 3.2 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *wheat-containing infant food

incidence: 4/13*, conc. range: ≤ 1.4 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

FUMONISIN B₁

incidence: 7/8*, conc. range: 30–6,127 $\mu\text{g}/\text{kg}$, sample year: 2000, country: South Africa/Brazil¹⁴⁰⁷, sa from Brazil, *corn-based infant food containing cornmeal, corn starch, and cornflour

FUMONISIN B₂

incidence: 5/8*, conc. range: 25–1,738 $\mu\text{g}/\text{kg}$, sample year: 2000, country: South Africa/Brazil¹⁴⁰⁷, sa from Brazil, *corn-based infant food containing cornmeal, corn starch, and cornflour

FUMONISIN B₃

incidence: 1/8*, conc.: 575 $\mu\text{g}/\text{kg}$, sample year: 2000, country: South Africa/Brazil¹⁴⁰⁷, sa from Brazil, *corn-based infant food containing cornmeal, corn starch, and cornflour

FUMONISINS (B₁, B₂)

incidence: 18/24*, conc. range: ≤ 130 $\mu\text{g}/\text{kg}$, \emptyset conc.: 44 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *soy-based infant food

incidence: 1/25*, conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1997–1999, country: Canada⁷⁹⁶, *rice-based infant food

incidence: 22/69*, conc. range: ≤ 120 $\mu\text{g}/\text{kg}$, \emptyset conc.: 43 $\mu\text{g}/\text{kg}$, sample year:

1997–1999, country: Canada⁷⁹⁶, *multi-grain infant food
incidence: 1/2*, conc.: 20 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *teething biscuits

FUSARENON-X (4-ACETYLNIVALENOL)
incidence: 1/13*, conc.: ≤0.18 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

HT-2 TOXIN
incidence: 4/5*, conc. range: ≤1.3 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *wheat-containing infant food
incidence: 12/13*, conc. range: ≤19 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

NEOSOLANIOL
incidence: 11/13*, conc. range: ≤0.51 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

NIVALENOL
incidence: 2/5*, conc. range: ≤8.8 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *wheat-containing infant food
incidence: 1/13*, conc.: 1.8 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

MONOACETOXYSCIRPENOL
incidence: 4/5*, conc. range: ≤0.12 µg/kg, sample year: 2005/2006, country: Germany¹¹¹², *wheat-containing infant food
incidence: 12/13*, conc. range: ≤0.21 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

DIACETOXYSCIRPENOL
incidence: 4/13*, conc. range: ≤0.25 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

T-2 TOXIN
incidence: 2/5*, conc. range: ≤0.15 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *wheat-containing infant food
incidence: 13/13*, conc. range: ≤5.6 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

T-2 TETRAOL
incidence: 1/5*, conc. range: ≤0.15 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *wheat-containing infant food
incidence: 9/13*, conc. range: ≤85 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

T-2 TRIOL
incidence: 7/13*, conc. range: ≤1.3 µg/kg, sample year: 2005/2006, country: Germany¹¹²², *oat-containing infant food

α-ZEARALANOL
incidence: 1/44*, conc.: 950 µg/kg, country: Italy¹⁰⁴⁶, *meat-based infant food

α-ZEARALENOL
incidence: 4/7*, conc. range: ≤30.50 µg/kg, sample year: unknown, country: Italy¹⁰⁴⁶, *calf meat-based infant food

incidence: 2/7*, conc. range: ≤4.80 µg/kg, sample year: unknown, country: Italy¹⁰⁴⁶, *beef meat-based infant food

incidence: 2/5*, conc. range: ≤4.10 µg/kg, sample year: unknown, country: Italy¹⁰⁴⁶, *rabbit meat-based infant food

incidence: 2/5, conc. range: ≤5.00 µg/kg, sample year: unknown, country: Italy¹⁰⁴⁶, *ham meat-based infant food

incidence: 1/4*, conc.: 5.50 µg/kg, sample year: unknown, country: Italy¹⁰⁴⁶, *horse meat-based infant food

incidence: 1/4*, conc.: 7.20 µg/kg, sample year: unknown, country: Italy¹⁰⁴⁶, *lamb meat-based infant food

ZEARALENONE

incidence: 1/13*, conc.: 4 µg/kg, sample year: 2004, country: Germany²⁴⁴, *grain mash and rusk infant food

incidence: 4/29*, conc. range: ≤22 µg/kg, Ø conc.: 10.2 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *barley-based infant food

incidence: 23/30*, conc. range: ≤35 µg/kg, Ø conc.: 18.4 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *soy-based infant food

incidence: 1/7*, conc.: 1.0 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *rice-based infant food

incidence: 30/71*, conc. range: ≤32 µg/kg, Ø conc.: 10.7 µg/kg, sample year: 1997–1999, country: Canada⁷⁹⁶, *multi-grain infant food

incidence: 1/7*, conc.: 8 µg/kg, country: sample year: 1997–1999, Canada⁷⁹⁶, *teething biscuits

incidence: 1/10, conc.: tr, sample year: unknown, country: Argentina⁸⁵⁴

incidence: 2/7*, conc. range: 2–5 µg/kg, sample year: 1999–2001, country: Switzerland¹³⁶⁰, *powder, based on cereals
see also Food (baby)

Food colorant may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/2, conc. range: 157–2,800 µg/kg, Ø conc.: 1,478 µg/kg, sample year: unknown, country: Germany⁷¹⁵

Foodstuff may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: ?/20, conc. range: 36–264 µg/kg, sample year: unknown, country: Thailand¹⁴³⁸

AFLATOXIN B₂

incidence: ?/20, conc. range: 6–31 µg/kg, sample year: unknown, country: Thailand¹⁴³⁸

AFLATOXIN G₁

incidence: ?/20, conc. range: tr–18 µg/kg, sample year: unknown, country: Thailand¹⁴³⁸

Fusarium Toxins

DEOXYNIVALENOL

incidence: 25/27* **, conc. range: 14–450 µg/kg, sample year: unknown, country: Italy¹⁰³², *maize-based foodstuff including popcorn, flour, couscous, polenta, biscuits, and breakfast products, **conventional

incidence: 23/27* **, conc. range: 19–800 µg/kg, sample year: unknown, country: Italy¹⁰³², *maize-based foodstuff including popcorn, flour, couscous, polenta, biscuits, and breakfast products, **organic

incidence: 34/44* **, conc. range: 7–310 µg/kg, sample year: unknown, country: Italy¹⁰³², *wheat-based foodstuff including raw material, flour, bran, biscuits, bread, and pasta, **conventional

incidence: 25/36* **, conc. range: 9–210 µg/kg, sample year: unknown, country: Italy¹⁰³², *wheat-based foodstuff including raw material, flour, bran, biscuits, bread, and pasta, **organic

incidence: 11/13* **, conc. range: 12–440 µg/kg, sample year: unknown, country: Italy¹⁰³², *rice-based foodstuff including raw material, biscuits, and rice flakes, **conventional

incidence: 10/11* **, conc. range: 25–510 µg/kg, sample year: unknown, country: Italy¹⁰³², *rice-based foodstuff including raw material, biscuits, and rice flakes, **organic

incidence: 16/17* **, conc. range: 12–89 µg/kg, sample year: unknown, country: Italy¹⁰³², *mixed-based foodstuff

including rye, barley, spelt, millet, oats, milled cereals, whole meal, soups, and breakfast cereals, **conventional

incidence: 27/29* **, conc. range: 65–930 µg/kg, sample year: unknown, country: Italy¹⁰³², *mixed-based foodstuff including rye, barley, spelt, millet, oats, milled cereals, whole meal, soups, and breakfast cereals, **organic

FUMONISIN B₁

incidence: 1/5*, conc.: 55 µg/kg, sample year: 1990/1991, country: South Africa⁴¹³, sa from Peru (corn kernels) and USA (tortilla preparations), *maize-based alkali treated foodstuff

incidence: 6/12*, conc. range: ≤700 µg/kg, Ø conc.: 300.7 µg/kg, sample year: 1990/1991, country: South Africa⁴¹³, sa from South Africa and USA, *miscellaneous foodstuff

incidence: 22/34*, conc. range: 28–2,679 µg/kg, sample year: 1997, country: USA⁴⁵³, *maize-based foodstuff

incidence: 1/336*, conc.: 20 µg/kg**, sample year: unknown, country: UK⁷³⁴, *maize-based foodstuff, **Bombay mix (multi grain product)

incidence: 8/27* **, conc. range: 27–2,160 µg/kg, sample year: unknown, country: Italy¹⁰³², *maize-based foodstuff including popcorn, flour, couscous, polenta, biscuits, and breakfast products, **conventional

incidence: 6/27* **, conc. range: 10–600 µg/kg, sample year: unknown, country: Italy¹⁰³², *maize-based foodstuff including popcorn, flour, couscous, polenta, biscuits, and breakfast products, **organic

incidence: 4/44* **, conc. range: 40–2,870 µg/kg, sample year: unknown, country: Italy¹⁰³², *wheat-based foodstuff including raw material, flour, bran, biscuits, bread, and pasta, **conventional

incidence: 16/36* **, conc. range: 15–67 µg/kg, sample year: unknown, country: Italy¹⁰³², *wheat-based foodstuff including raw material, flour, bran, biscuits, bread, and pasta, **organic

incidence: 3/13* **, conc. range: 20–80 µg/kg, sample year: unknown, country: Italy¹⁰³², *rice-based foodstuff including raw material, biscuits, and rice flakes, **conventional

incidence: 4/11* **, conc. range: 20–350 µg/kg, sample year: unknown, country: Italy¹⁰³², *rice-based foodstuff including raw material, biscuits, and rice flakes, **organic

incidence: 5/17* **, conc. range: 60–420 µg/kg, sample year: unknown, country: Italy¹⁰³², *mixed-based foodstuff including rye, barley, spelt, millet, oats, milled cereals, whole meal, soups, and breakfast cereals, **conventional

incidence: 12/29* **, conc. range: 10–1,970 µg/kg, sample year: unknown, country: Italy¹⁰³², *mixed-based foodstuff including rye, barley, spelt, millet, oats, milled cereals, whole meal, soups, and breakfast cereals, **organic

FUMONISIN B₂

incidence: 3/12*, conc. range: ≤240 µg/kg, Ø conc.: 148 µg/kg, sample year: 1990/1991, country: South Africa⁴¹³, sa from South Africa and USA, *miscellaneous foodstuff

incidence: 10/34*, conc. range: 30–797 µg/kg, sample year: 1997, country: USA⁴⁵³, *maize-based foodstuff

incidence: 12/27* **, conc. range: 10–400 µg/kg, sample year: unknown, country: Italy¹⁰³², *maize-based foodstuff including popcorn, flour, couscous, polenta, biscuits, and breakfast products, **conventional

incidence: 9/27* **, conc. range: 30–150 µg/kg, sample year: unknown, country: Italy¹⁰³², *maize-based foodstuff

including popcorn, flour, couscous, polenta, biscuits, and breakfast products, **organic

incidence: 5/44* **, conc. range: 10–380 µg/kg, sample year: unknown, country: Italy¹⁰³², *wheat-based foodstuff including raw material, flour, bran, biscuits, bread, and pasta, **conventional

incidence: 10/36* **, conc. range: 70–790 µg/kg, sample year: unknown, country: Italy¹⁰³², *wheat-based foodstuff including raw material, flour, bran, biscuits, bread, and pasta, **organic

incidence: 5/13* **, conc. range: 10–400 µg/kg, sample year: unknown, country: Italy¹⁰³², *rice-based foodstuff including raw material, biscuits, and rice flakes, **conventional

incidence: 5/11* **, conc. range: 140–380 µg/kg, sample year: unknown, country: Italy¹⁰³², *rice-based foodstuff including raw material, biscuits, and rice flakes, **organic

incidence: 7/17* **, conc. range: 10–70 µg/kg, sample year: unknown, country: Italy¹⁰³², *mixed-based foodstuff including rye, barley, spelt, millet, oats, milled cereals, whole meal, soups, and breakfast cereals, **conventional

incidence: 9/29* **, conc. range: 35–140 µg/kg, sample year: unknown, country: Italy¹⁰³², *mixed-based foodstuff including rye, barley, spelt, millet, oats, milled cereals, whole meal, soups, and breakfast cereals, **organic

MONILIFORMIN

incidence: 24/34*, conc. range: tr–858 µg/kg, sample year: 1997, country: USA⁴⁵³, *maize-based foodstuff

see also Food

Food products see Foodstuff

Fresh cheese see Cheese

Fruit (apple) may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 5/8, conc. range: ≤500 µg/kg, sample year: unknown, country: USA³⁴⁴

ALTERNARIOL

incidence: 7/8, conc. range: ≤58,800 µg/kg, sample year: unknown, country: USA³⁴⁴

incidence: 1/22*, conc.: 160 µg/kg, sample year: unknown, country: Germany³⁴⁵, *moldy

ALTERNARIOL METHYL ETHER

incidence: 8/8, conc. range: ≤2,300 µg/kg, sample year: unknown, country: USA³⁴⁴

incidence: 1/22*, conc.: 250 µg/kg, sample year: unknown, country: Germany³⁴⁵, *moldy

ALBERTOXIN I

incidence: 5/8, conc. range: pr, sample year: unknown, country: USA³⁴⁴

TENUAZONIC ACID

incidence: 8/8, conc. range: 100–500 µg/kg, Ø conc.: 200 µg/kg, sample year: unknown, country: USA³⁴⁴

Aspergillus and Penicillium Toxins

CITRININ

incidence: 83/351*, Ø conc.: 601 µg/kg, sample year: unknown, country: Portugal⁷⁰¹, *apples with rotten spots (69 sa co-contaminated with CIT and PA, 14 sa contaminated solely with CIT)

OCHRATOXIN A

incidence: 2/4*, conc. range: 0.23–0.41 µg/kg, Ø conc.: 0.32 µg/kg, sample year: unknown, country: Germany²⁸⁹, *moldy

PATULIN

incidence: 4/4*, conc. range: <LOQ–1,500.0 µg/kg, sample year: unknown, country: Portugal²⁵, *sa with different degrees of brown areas

incidence: 3/17*, conc. range: 0.200–1.600 µg/kg, sample year: 1984, country: Italy¹⁰⁵, *lot of apples

incidence: 5/12*, conc. range: 300–42,000 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *apples with rotten spots

incidence: 21/21*, conc. range: 2–113,343 µg/kg, Ø conc.: 12,464 µg/kg, sample year: unknown, country: Italy⁶⁹⁴, *rotten area

incidence: 17/21*, conc. range: 0.05–1,166 µg/kg, Ø conc.: 152 µg/kg, sample year: unknown, country: Italy⁶⁹⁴, *unaffected area with peel

incidence: 7/21*, conc. range: 0.44–93 µg/kg, Ø conc.: 16.3 µg/kg, sample year: unknown, country: Italy⁶⁹⁴, *unaffected area without peel

incidence: 18/52*, conc. range: 5–50 µg/l (18 sa, maximum: 32 µg/kg), sample year: 1989/1990, country: Australia⁶⁹⁷, *included apple, pear, and mixed fruit sausec, purees and jellies, diced apples, and apple pulps

incidence: 6/6, conc. range: 150–267 µg/kg, Ø conc.: 220 µg/kg, sample year: 1992/1993 and 1995, country: Brazil⁶⁹⁸

incidence: 2/7*, conc. range: 55 µg/kg, sample year: 1976, country: Finland⁷⁰⁰, *moldy

incidence: 310/351*, Ø conc.: 18,800 µg/kg, sample year: unknown, country: Portugal⁷⁰¹, *apples with rotten spots (69 sa co-contaminated with CIT and PA, 241 sa contaminated solely with PAT)

incidence: 0/6*, conc. range: no contamination, sample year: unknown, country: France⁷⁷⁶, *conventional

incidence: 2/6*, conc. range: ≤1,240 µg/kg, sample year: unknown, country: France⁷⁷⁶, *organic

incidence: 1/1*, conc.: pr, sample year: unknown, country: Denmark⁸⁹³, *windfall apples

incidence: 7/13*, conc. range: >LOQ to <10 µg/kg (3 sa), >10 to <25 µg/kg (2 sa), >25 to <50 µg/kg (1 sa), 81.7 µg/kg (1 sa), sample year: 2003/2004, country: Italy¹³²⁷, *conventional

incidence: 3/9*, conc. range: >LOQ to <10 µg/kg (1 sa), >50 µg/kg (2 sa, maximum: 50.8 µg/kg), sample year: 2003/2004, country: Italy¹³²⁷, *organic

Chaetomium Toxins

CHAETOGLOBOSIN A

incidence: 1/1*, conc.: pr, sample year: unknown, country: Denmark⁸⁹³, *windfall apples

incidence: 1/1*, conc.: pr, sample year: unknown, country: Denmark⁸⁹³, *apple on the tree

CHAETOGLOBOSIN C

incidence: 1/1*, conc.: pr, sample year: unknown, country: Denmark⁸⁹³, *windfall apples

Fusarium Toxins

ACUMINATOPYRONE

incidence: 5/20*, conc. range: pr, sample year: unknown, country: Denmark/Slovenia¹⁴²⁵, sa from Slovenia, *apples sampled from trees (4 sa co-contaminated with ACUMI, AURO, CHLAM, ENNS, and MON, 1 sa co-contaminated with ACUMI, AURO, CHLAM, and MON)

AUROFUSARIN

incidence: 14/20*, conc. range: 180–166,600 µg/kg, Ø conc.: 75,428 µg/kg, sample year: unknown, country: Denmark/Slovenia¹⁴²⁵, sa from Slovenia, *apples sampled from trees (4 sa co-contaminated with ACUMI, AURO, CHLAM, ENS, and MON, 1 sa co-contaminated with ACUMI, AURO, CHLAM, and MON, 9 sa co-contaminated with AURO, ENS, and MON)

CHLAMYDOSPOROLS

incidence: 5/20*, conc. range: pr, sample year: unknown, country: Denmark/

Slovenia¹⁴²⁵, sa from Slovenia, *apples sampled from trees (4 sa co-contaminated with ACUMI, AURO, CHLAM, ENS, and MON, 1 sa co-contaminated with ACUMI, AURO, CHLAM, and MON)

ENNIATINS

incidence: 13/20*, conc. range: tr–3,890 µg/kg, sample year: unknown, country: Denmark/Slovenia¹⁴²⁵, sa from Slovenia, *apples sampled from trees (4 sa co-contaminated with ACUMI, AURO, CHLAM, ENS, and MON, 9 sa co-contaminated with AURO, ENS, and MON)

MONILIFORMIN

incidence: 14/20*, conc. range: tr–2,870 µg/kg, sample year: unknown, country: Denmark/Slovenia¹⁴²⁵, sa from Slovenia, *apples sampled from trees (4 sa co-contaminated with ACUMI, AURO, CHLAM, ENS, and MON, 1 sa co-contaminated with ACUMI, AURO, CHLAM, and MON, 9 sa co-contaminated with AURO, ENS, and MON)

Penicillium Toxins

COMMUNESIN B

incidence: 1/1*, conc.: pr, sample year: unknown, country: Denmark⁸⁹³, *windfall apples

ROQUEFORTINE

incidence: 1/1*, conc.: pr, sample year: unknown, country: Denmark⁸⁹³, *windfall apples

Fruit (cherry) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/6*, conc. range: tr–2.71 µg/kg, sample year: unknown, country: Germany²⁸⁹, *moldy

Fruit (grape) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1*, conc.: 15.6 µg/kg, sample year: unknown, country: Taiwan/Russia¹⁵⁰², sa from Taiwan, *black grape

incidence: 2/10, conc. range: 0.23–0.39 µg/kg, Ø conc.: 0.31 µg/kg, sample year: unknown, country: China¹⁵⁵⁴

Fruit (hawthorn fruit) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 8/25*, conc. range: 4.56–38.77 µg/kg, Ø conc.: 16.26 µg/kg, sample year: 2010, country: China¹⁴⁶⁹, *medicinal hawthorn fruits of different grades

Fruit (lemon) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 19?/40*, Ø conc.: 195 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

AFLATOXIN B₂

incidence: 19?/40*, Ø conc.: 42 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

AFLATOXIN G₁

incidence: 19?/40*, Ø conc.: 110 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

AFLATOXIN G₂

incidence: 19?/40*, Ø conc.: 25 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

Fruit (mandarin fruit) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 2/3, conc. range: 1,000–5,200 µg/kg, Ø conc.: 3,100 µg/kg, sample year: unknown, country: Italy³⁴⁰ (2 sa co-contaminated with AME, AOH, and TA)

ALTERNARIOL METHYL ETHER

incidence: 2/3, conc. range: 550–1,400 µg/kg, Ø conc.: 975 µg/kg, sample year: unknown, country: Italy³⁴⁰ (2 sa co-contaminated with AME, AOH, and TA)

TENUAZONIC ACID

incidence: 3/3, conc. range: 21,000–173,900 µg/kg, Ø conc.: 94,033 µg/kg, sample year: unknown, country: Italy³⁴⁰ (2 sa co-contaminated with AME, AOH, and TA)

Fruit (mango) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 4?/8*, Ø conc.: 52 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in bottles

incidence: 26?/40*, Ø conc.: 210 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

AFLATOXIN B₂

incidence: 4?/8*, Ø conc.: 5 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in bottles

incidence: 26?/40*, Ø conc.: 32 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

AFLATOXIN G₁

incidence: 4?/8*, Ø conc.: 24 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in bottles

incidence: 26?/40*, Ø conc.: 184 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

AFLATOXIN G₂

incidence: 4?/8*, Ø conc.: tr, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in bottles

incidence: 26?/40*, Ø conc.:

15 µg/kg, sample year: unknown, country: India¹⁸¹, *pickled in salt, stored in polythene bags

Fruit (melon) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL METHYL ETHER

incidence: 1/1*, conc.: 51 µg/kg**, sample year: unknown, country: Italy³⁴⁰, *visibly affected by *Alternaria* rot, **toxin concentrations are referred to dry weight sample (1 sa co-contaminated with AME and TA)

TENUAZONIC ACID

incidence: 1/1*, conc.: 80 µg/kg**, sample year: unknown, country: Italy³⁴⁰, *visibly affected by *Alternaria* rot, **toxin concentrations are referred to dry weight sample (1 sa co-contaminated with AME and TA)

Fruit (peach) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/9*, conc.: 0.59 µg/kg, sample year: unknown, country: Germany²⁸⁹, *moldy

PATULIN

incidence: 2/4*, conc. range: 200–400 µg/kg, Ø conc.: 300 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *moldy stewed peaches

incidence: 1/8, conc.: 6 µg/kg (pulp), sample year: 1976, country: Sweden⁴⁸⁰
 incidence: 4/4, conc. range: 92–174 µg/kg, Ø conc.: 120 µg/kg, sample year: 1992/1993 and 1995, country: Brazil⁶⁹⁸

Fruit (pear) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 4/4, conc. range: 134–245 µg/kg, Ø conc.: 196 µg/kg, sample year: 1992/1993 and 1995, country: Brazil⁶⁹⁸

Fruit (plum) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/6, conc.: 4 µg/kg (pulp), sample year: 1976, country: Sweden⁴⁸⁰
 see also Fruit, dried

Fruit (prune) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/14, conc.: 0.6 µg/kg, sample year: 2000/2001, country: UK⁸³⁴
 see also Fruit, dried

Fruit (quince) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 25/25, conc. range: 96–8,164 µg/kg, Ø conc.: 1,531.9 µg/kg, sample year: unknown, country: India¹⁴¹¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 8/25*, conc. range: 500–1,630 µg/kg, Ø conc.: 946.3 µg/kg, sample year: unknown, country: India¹⁵⁵⁶, *dry fruit slices

PATULIN

incidence: 4/4*, conc. range: <LOQ–118.3 µg/kg, sample year: unknown, country: Portugal²⁵, *sa with different degrees of brown areas

Fruit products see Product (fruit products)

Fruit punch see Beverage

Fruit, dried may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 2/8*, conc. range: 2 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *dried tomatoes

ALTERNARIOL

incidence: 1/8*, conc.: 4 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *dried tomatoes

ALTERNARIOL METHYL ETHER

incidence: 3/8*, conc. range: 2–7 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *dried tomatoes

TENTOXIN

incidence: 2/8*, conc. range: 2 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *dried tomatoes

TENUAZONIC ACID

incidence: 7/8*, conc. range: ≤166 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *dried tomatoes

Aspergillus Toxins

AFLATOXIN B₁

incidence: 9/20*, conc. range: 0.10–34.5 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹, *dried fruits (8 sa co-contaminated with AFB₁, AFB₂ and AFG₁, 1 sa contaminated solely with AFB₁)

incidence: 3/9*, conc. range: 0.08–0.58 µg/kg, Ø conc.: 0.33 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different

kinds of dried fruits (3 sa co-contaminated with AFB₁ and AFG₂)
incidence: 9/30*, conc. range: 0.21–5.33 µg/kg, Ø conc.: 0.88 µg/kg, sample year: unknown, country: Iran¹⁴²⁹, *dried apricot
incidence: 2/15*, conc. range: 0.23–1.17 µg/kg, Ø conc.: 0.88 µg/kg, sample year: unknown, country: Iran¹⁴²⁹, *dried prunes

AFLATOXIN B₂

incidence: 8/20, conc. range: <LOQ–6.1 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹, *dried fruits (8 sa co-contaminated with AFB₁, AFB₂ and AFG₁)
incidence: 1/9*, conc.: 0.94 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of dried fruits (1 sa co-contamination with AFG₂)
incidence: 1/30*, conc.: 0.32 µg/kg, sample year: unknown, country: Iran¹⁴²⁹, *dried apricot

AFLATOXIN G₁

incidence: 1/20, conc.: 0.13 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹, *dried fruits (1 sa co-contaminated with AFB₁, AFB₂ and AFG₁)
incidence: 1/30*, conc.: 0.20 µg/kg, sample year: unknown, country: Iran¹⁴²⁹, *dried apricot
incidence: 1/15*, conc.: 0.37 µg/kg, sample year: unknown, country: Iran¹⁴²⁹, *dried prunes

AFLATOXIN G₂

incidence: 8/9*, conc. range: 0.08–7.89 µg/kg, Ø conc.: 1.18 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of dried fruits (3 sa co-contaminated with AFB₁ and AFG₂, 1 sa co-contaminated with AFB₂ and AFG₂, 4 sa contaminated solely with AFG₂)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 6/157*, conc. range: 2–20 µg/kg, sample year: 1993–1995, country: Uruguay⁷⁸⁷, *dried fruits
incidence: 4/20*, conc. range: 1.5–10.8 µg/kg, Ø conc.: 4.55 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *dried apricot

incidence: 4/15*, conc. range: 1.0–3.5 µg/kg, Ø conc.: 2.22 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *dried mulberries

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/3*, conc. range: 210–280 µg/kg, sample year: 1992, country: Egypt²⁸¹, *dried plum
incidence: 3/3*, conc. range: 50–110 µg/kg, sample year: 1992, country: Egypt²⁸¹, *dried apricot
incidence: 26/31*, conc. range: ≤0.070 µg/kg, sample year: unknown, country: Germany⁵⁹², *dried prune
incidence: 26/49*, conc. range: ≤0.09 µg/kg, sample year: unknown, country: Germany⁵⁹², *different dried fruits

incidence: 1/19*, conc.: 0.1–5.0 µg/kg, sample year: 2002/2003, country: Brazil⁸⁶⁵, sa from worldwide, *dried plum
incidence: 6/20, conc. range: 0.46–29.9 µg/kg, year: 2005/2006, country: Tunisia⁹³⁹
incidence: 6/8*, conc. range: 0.02–0.05 µg/kg, Ø conc.: 0.035 µg/kg, sample year: unknown, country: Morocco/France⁹⁴², sa from Morocco, *dried prune

incidence: 1/20*, conc.: 0.97 µg/kg, sample year: unknown, country: Turkey¹³⁴⁶, *dried apricot
incidence: 1/30*, conc.: 2.83 µg/kg, sample year: unknown, country: Iran¹⁴²⁹, *dried apricot
incidence: 3/15*, conc. range: 0.22–2.62 µg/kg, Ø conc.: 1.28 µg/kg, sample year: unknown, country: Iran¹⁴²⁹, *dried prunes

Fusarium Toxins

ZEARALENONE

incidence: 6/154*, conc. range: 100–200 µg/kg (3 sa), >200 µg/kg (3 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *dried fruits

Fruits and nuts may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)
incidence: 3/5*, conc. range: 8,900 µg/kg,
sample year: unknown, country: UK¹⁰⁴⁸,
*mold damaged

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1/5*, conc.: tr, sample year:
unknown, country: UK¹⁰⁴⁸, *mold
damaged

PATULIN

incidence: 1/1*, conc.: 10 µg/kg, sample
year: unknown, country: UK¹⁰⁴⁸, *mold
damaged

Fruits and vegetables may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS B₁
incidence: 3/7, conc. range: 40–140 µg/kg,
Ø conc.: 80 µg/kg, sample year: unknown,
country: India¹⁴³¹

Gabi see Tubers

Garlic see Spice (garlic)

Garlic/onions see Spice (garlic/onions)

Garlic pickle see Spice (garlic pickle)

Germ (maize germ) may contain the following mycotoxins:

Fusarium Toxins

FUMONISINS (B₁, B₂, B₃)
incidence: 12/12, conc. range: 100–
2,000 µg/kg, Ø conc.: 775 µg/kg, sample
year: 1993, country: USA³⁷⁰

Germ (wheat germ) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 13/19, conc. range: ≤0.448 µg/
kg, sample year: 1996–1998, country:
Germany⁶⁹⁰

Fusarium Toxins

DEOXYNIVALENOL
incidence: 5/5, conc. range: 31–95 µg/kg,
Ø conc.: 50 µg/kg, sample year: 2000/2001,
country: Germany⁵²⁰

HT-2 TOXIN

incidence: 4/5, conc. range: 5–27 µg/kg,
Ø conc.: 11 µg/kg, sample year: 2000/2001,
country: Germany⁵²⁰

NIVALENOL

incidence: 2/5, conc. range:
21–30 µg/kg, Ø conc.: 26 µg/kg,
sample year: 2000/2001, country:
Germany⁵²⁰

ZEARALENONE

incidence: 1/5, conc.: 3 µg/kg,
sample year: 2000/2001, country:
Germany⁵²⁰

Ginger see Spice (ginger)

Ginseng see Medicinal plant

Gluten (maize gluten) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 4/4, conc. range:
190–4,130 µg/kg, Ø conc.:
2,390 µg/kg, sample year: 2001, country:
Bulgaria⁹⁸⁰

Goat cheese see Cheese

Goose may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5/12, conc. range: ≤ 0.10 $\mu\text{g}/\text{kg}$, sample year: 1993/1994, country: Denmark⁶²⁴

Goose liver see Liver (goose liver)

Gorgonzola cheese see Cheese (Blue cheese)

Gouda cheese see Cheese (Gouda cheese)

Graham flour see Flour (graham flour)

Grains may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 18/36*, conc. range: 6–200 $\mu\text{g}/\text{kg}$, sample year: 1976, country: India¹²⁷⁷, *barley, gram, mixed and pure wheat, and wheat

incidence: 1/23, conc. range: >0.2 – 2.0 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 2007, country: Turkey¹⁵⁶⁰, *commercial Turkish foods

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2*/11, conc. range: 100–1,000 $\mu\text{g}/\text{kg}$ (1 sa), $>1,000$ $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1966/1967, country: Uganda/USA⁵, sa from Uganda, *2 sa contained AFB₁, AFB₂, and AFG₁

incidence: 3*/16**, conc. range: 1–100 $\mu\text{g}/\text{kg}$ (2 sa?), sample year: 1966/1967, country: Uganda/USA⁵, sa from Uganda, *2 sa contained AFB₁, AFB₂, and AFG₁, 1 sa contained AFG₂, **grain mixtures
incidence: 18/18, conc. range: 2 $\mu\text{g}/\text{kg}$ (13 sa), 2–5 $\mu\text{g}/\text{kg}$ (4 sa), 6 $\mu\text{g}/\text{kg}$ (1 sa),

sample year: 1988/1989, country: Australia¹³

Fusarium Toxins

BEAUVERICIN

incidence: 73/228*, conc. range: ≤ 120 $\mu\text{g}/\text{kg}$, sample year: 2000–2002, country: Norway¹²⁷², *ncac

DEOXYNIVALENOL

incidence: 2/5*, conc. range: 16–17 $\mu\text{g}/\text{kg}$, \emptyset conc.: 17 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵²⁰, *unripe spelt grain
incidence: ?/58*, conc. range: $\leq 2,580$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 370 $\mu\text{g}/\text{kg}$ ** , sample year: unknown, country: Germany⁹⁴⁵, *barley, rye, wheat, **of pos sa?

ENNIATIN A

incidence: 58/228*, conc. range: ≤ 59 $\mu\text{g}/\text{kg}$, sample year: 2000–2002, country: Norway¹²⁷², *ncac

ENNIATIN A₁

incidence: 153/228*, conc. range: ≤ 500 $\mu\text{g}/\text{kg}$, sample year: 2000–2002, country: Norway¹²⁷², *ncac

ENNIATIN B

incidence: 228/228*, conc. range: $\leq 5,800$ $\mu\text{g}/\text{kg}$, sample year: 2000–2002, country: Norway¹²⁷², *ncac

ENNIATIN B₁

incidence: 214/228*, conc. range: $\leq 1,900$ $\mu\text{g}/\text{kg}$, sample year: 2000–2002, country: Norway¹²⁷², *ncac

FUMONISINS (B₁, B₂, B₃)

incidence: 52/58*, conc. range: 110–8,400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 550 $\mu\text{g}/\text{kg}$, sample year: 1997, country: USA/Nepal⁵⁵², sa from Nepal, *maize and wheat

8-KETOTRICHOTHECENE

incidence: 10/58*, conc. range: 1,260–11,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3,200 $\mu\text{g}/\text{kg}$, sample year: 1997, country: USA/Nepal⁵⁵², sa from Nepal, *maize and wheat

T-2 TOXIN

incidence: ?/58*, conc. range: ≤ 1.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.2 $\mu\text{g}/\text{kg}$ ***, sample year: unknown, country: Germany⁹⁴⁵, *barley, rye, wheat, **of pos sa?

Gram may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 10/28, conc. range: <20 $\mu\text{g}/\text{kg}$ (2 sa), 21–100 $\mu\text{g}/\text{kg}$ (8 sa, maximum: 74 $\mu\text{g}/\text{kg}$), sample year: 1987, country: India³⁹⁸

Gram (black gram) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 9/12*, conc. range: 90–510 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *mangori
incidence: 4/15*, conc. range: 170–420 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *papad
incidence: 5/10*, conc. range: 50–380 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *mirchoni

STERIGMATOCYSTIN

incidence: 4/12*, conc. range: 70–310 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *mangori
incidence: 6/15*, conc. range: 150–820 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *papad

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 5/12*, conc. range: 160–1,280 $\mu\text{g}/\text{kg}$, country: India¹⁴²⁷, *mangori
incidence: 6/15*, conc. range: 90–1,120 $\mu\text{g}/\text{kg}$, country: India¹⁴²⁷, *papad
incidence: 2/10*, conc. range: 120–580 $\mu\text{g}/\text{kg}$, \emptyset conc.: 350 $\mu\text{g}/\text{kg}$, country: India¹⁴²⁷, *mirchoni

PATULIN

incidence: 3/12*, conc. range: 130–690 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *mangori
incidence: 4/15*, conc. range: 220–800 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *papad

Fusarium Toxins**ZEARALENONE**

incidence: 2/12*, conc. range: 240–1,500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 870 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *mangori

Gram (green gram) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 10/15*, conc. range: 170–1,600 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *mangori
incidence: 9/14*, conc. range: 114–1,700 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *papad

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 7/15*, conc. range: 210–1,360 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *mangori
incidence: 4/14*, conc. range: 250–1,870 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁴²⁷, *papad

Gram flour see Flour (gram flour)

Grana Padano cheese see Cheese (Grana Padano cheese)

Grape see Berry (grapes)

Grape juice see Juice (grape juice)

Grape pulp see Pulp (grape pulp)

Greater cardamom see Spice (cardamom)

Grit may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/6, conc. range: ≤ 428 $\mu\text{g}/\text{kg}$, sample year: 2007/2008, country: Hungary⁸⁹¹

Grit (barley grits) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/1* **, conc.: 36 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole grain grits, **conventional

incidence: 0/0* **, no sa investigated, sample year: 1997, country: Germany⁵⁶², *whole grain grits, **organic

Grit (durum grits) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/12*, conc.: 0.23 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Spain¹⁴⁰⁰, *conventional

incidence: 1/5*, conc.: 0.70 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Spain¹⁴⁰⁰, *organic

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/12*, conc. range: ≤ 294 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Spain¹⁴⁰⁰, *conventional

incidence: 1/5*, conc.: 243 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Spain¹⁴⁰⁰, *organic

incidence: 1/1*, conc.: 177 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac (1 sa co-contaminated with DON and DON3G)

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 1/1*, conc.: 12 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac (1 sa co-contaminated with DON and DON3G)

Grit (maize grits) Synonym: polenta, semolina may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 2/2, conc. range: 16 $\mu\text{g}/\text{kg}$, \emptyset conc.: 16 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁷

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/7, conc.: 21.3 $\mu\text{g}/\text{kg}$, sample year: 2002/2003, country: Brazil²³⁰

incidence: 57*/288**, conc. range: 64–859 $\mu\text{g}/\text{kg}$, sample year: 1995–2003, country: Nepal²³⁹, * > 30 $\mu\text{g}/\text{kg}$, **maize grits and flour

incidence: 4/4, conc. range: 0.31–14.85 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6.75 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy¹³²⁸

AFLATOXIN B₂

incidence: 1/7, conc.: 2.4 $\mu\text{g}/\text{kg}$, sample year: 2002/2003, country: Brazil²³⁰

AFLATOXINS (TOTAL)

incidence: 17/78*, conc. range: ≤ 4.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.7 $\mu\text{g}/\text{kg}$, sample year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina, *flaking grits

incidence: 11/22*, conc. range: ≤ 4.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.80 $\mu\text{g}/\text{kg}$, sample year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina, *cooked grits

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/29*, conc. range: ≤ 1.530 $\mu\text{g}/\text{kg}$, year: 1996–1998, country: Germany⁶⁹⁰, *polenta

incidence: 10/25*, conc. range: ≤ 2.580 $\mu\text{g}/\text{kg}$, year: 1996–1998, country: Germany⁶⁹⁰, *semolina

Fusarium Toxins

DEOXYNIVALENOL

incidence: 12/14*, conc. range: 15–229 $\mu\text{g}/\text{kg}$, \emptyset conc.: 93 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵¹⁶, *semolina

incidence: 4/6*, conc. range: 15–84 $\mu\text{g}/\text{kg}$, \emptyset conc.: 40 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵²⁰, *semolina

incidence: 3/3*, conc. range: 130–910 $\mu\text{g}/\text{kg}$, \emptyset conc.: 666.6 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *conventional (3 sa co-contaminated with DON, FBS, and ZEA)

incidence: 1/1*, conc.: 170 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from Italy, *organic (1 sa co-contaminated with DON and ZEA)

incidence: 7/8*, conc. range: 10–100 $\mu\text{g}/\text{kg}$ (2 sa), >100 –250 $\mu\text{g}/\text{kg}$ (4 sa), 466 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 2000/2001, country: UK⁸³⁶, *polenta (2 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, NIV, and ZEA, 1 sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

3-ACETYLDEOXYNIVALENOL

incidence: 2/14*, conc. range: 15–17 $\mu\text{g}/\text{kg}$, \emptyset conc.: 16 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵¹⁶, *semolina

15-ACETYLDEOXYNIVALENOL

incidence: 9/14*, conc. range: 15–45 $\mu\text{g}/\text{kg}$, \emptyset conc.: 24 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵¹⁶, *semolina

incidence: 1/6*, conc.: 15 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵²⁰, *semolina

incidence: 4/8*, conc. range: 14–46 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: UK⁸³⁶, *polenta (2 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and ZEA)

FUMONISIN B₁

incidence: 1/7, conc.: 1,100 $\mu\text{g}/\text{kg}$, sample year: 1997/1998, country: Argentina²⁰⁸

incidence: 2/2, conc. range: 170–1,230 $\mu\text{g}/\text{kg}$, \emptyset conc.: 700 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Brazil²¹⁵

incidence: 8/8*, conc. range: 420–3,760 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,526.3 $\mu\text{g}/\text{kg}$, sample year: 1992/1993, country: Italy³⁶², *included corn grits and meal

incidence: 2/4, conc. range: 92–494 $\mu\text{g}/\text{kg}$, \emptyset conc.: 293 $\mu\text{g}/\text{kg}$, sample year: 1996/1997, country: Brazil/Argentina³⁶⁶, sa from Argentina (2 sa co-contaminated with FB₁ and FB₂)

incidence: 2/2, conc. range: 322–832 $\mu\text{g}/\text{kg}$, \emptyset conc.: 577 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Brazil/Argentina³⁶⁶, sa from Argentina (2 sa co-contaminated with FB₁ and FB₂)

incidence: 2/3*, conc. range: ≤ 40 $\mu\text{g}/\text{kg}$, sample year: 1995, country: Netherlands³⁸⁰, *polenta

incidence: 1/1*, conc.: 84 $\mu\text{g}/\text{kg}$, sample year: 1996, country: Denmark³⁸⁵, *polenta

incidence: 1/4, conc.: 7 $\mu\text{g}/\text{kg}$, sample year: 1996, country: Denmark³⁸⁵

incidence: 3/8*, conc. range: 100–427 $\mu\text{g}/\text{kg}$, \emptyset conc.: 268 $\mu\text{g}/\text{kg}$, sample year: 1995/1996, country: Uruguay/Canada/USA³⁹⁹, sa from Uruguay, *polenta

incidence: 34/55, conc. range: ≤ 790 $\mu\text{g}/\text{kg}$, \emptyset conc.: 260 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Switzerland⁴⁰⁰

incidence: 3/15, conc. range: ≤ 90 $\mu\text{g}/\text{kg}$, \emptyset conc.: 60 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Spain⁴⁰⁴

incidence: 3/3, conc. range: 140–270 µg/kg, Ø conc.: 196.7 µg/kg, sample year: 1990, country: USA⁴¹⁰ (2 sa co-contaminated with FB₁ and FB₂, 1 sa contaminated solely with FB₁)

incidence: 2/2, conc. range: 190–200 µg/kg, Ø conc.: 195 µg/kg, sample year: 1991, country: USA⁴¹⁰ (2 sa co-contaminated with FB₁ and FB₂)

incidence: 20/28, conc. range: ≤2,545 µg/kg, Ø conc.: 363 µg/kg, sample year: 1990/1991, country: South Africa⁴¹³, sa from South Africa and USA

incidence: 1/2, conc.: 13.9 µg/kg, sample year: 1992/1993, country: Germany⁴²⁰

incidence: 10/11*, conc. range: 19.9–1,230 µg/kg, Ø conc.: 364.6 µg/kg, sample year: 1992/1993, country: Germany⁴²⁰, *semolina

incidence: 27/27*, conc. range: 14–3,400 µg/kg, sample year: 1993, country: Switzerland⁴²³, *maize grits and meal

incidence: 4/8*, conc. range: 16–70 µg/kg, Ø conc.: 34 µg/kg, sample year: unknown, country: Sweden⁶⁸², *grits, flour, gruel

incidence: 46/46, conc. range: ≤1,380 µg/kg, Ø conc.: 104 µg/kg, sample year: 2004–2007, country: Japan⁹⁰⁰

incidence: 12/12, conc. range: 12–457 µg/kg, Ø conc.: 135 µg/kg, sample year: 1999, country: Argentina⁹⁵⁵

incidence: 10/12*, conc. range: 297–2,237 µg/kg, sample year: 2001, country: Brazil⁹⁶⁰, **Canjica* (1 sa co-contaminated with FB₁ and FB₂, 9 sa contaminated solely with FB₁)

incidence: 1/1, conc.: 170 µg/kg, sample year: 2001, country: Bulgaria⁹⁸⁰

incidence: 2/3*, conc. range: ≤183 µg/kg, sample year: 2005, country: Portugal¹²⁵⁰, *semolina

incidence: 4/4, conc. range: 1,146–3,194 µg/kg, Ø conc.: 2,240.3 µg/kg, sample year: unknown, country: Italy¹³²⁸

incidence: 6/12, conc. range: 210–270 µg/kg, Ø conc.: 230 µg/kg, sample year: 2005/2006, country: China/USA¹⁶⁵⁰, sa from China

FUMONISIN B₂

incidence: 1/7, conc.: 425 µg/kg, sample year: 1997/1998, country: Argentina²⁰⁸

incidence: 2/2, conc. range: 50–300 µg/kg, Ø conc.: 175 µg/kg, sample year: 1999, country: Brazil²¹⁵

incidence: 8/8, conc. range: 80–910 µg/kg, Ø conc.: 576.3 µg/kg, sample year: 1992/1993, country: Italy³⁶², *included corn grits and meal

incidence: 2/4, conc. range: 20–100 µg/kg, Ø conc.: 60 µg/kg, sample year: 1996/1997, country: Brazil/Argentina³⁶⁶, sa from Argentina (2 sa co-contaminated with FB₁ and FB₂)

incidence: 2/2, conc. range: 226–324 µg/kg, Ø conc.: 275 µg/kg, sample year: 1998, country: Brazil/Argentina³⁶⁶, sa from Argentina (2 sa co-contaminated with FB₁ and FB₂)

incidence: 1/1*, conc.: 22 µg/kg, sample year: 1996, country: Denmark³⁸⁵, *polenta

incidence: 13/55, conc. range: ≤160 µg/kg, Ø conc.: 100 µg/kg, sample year: 1991, country: Switzerland⁴⁰⁰

incidence: 2/3, conc. range: 60–110 µg/kg, Ø conc.: 85 µg/kg, sample year: 1990, country: USA⁴¹⁰ (2 sa co-contaminated with FB₁ and FB₂)

incidence: 2/2, conc. range: 50–90 µg/kg, Ø conc.: 70 µg/kg, sample year: 1991, country: USA⁴¹⁰ (2 sa co-contaminated with FB₁ and FB₂)

incidence: 9/28, conc. range: ≤1,065 µg/kg, Ø conc.: 246.1 µg/kg, sample year: 1990/1991, country: South Africa⁴¹³, sa from South Africa and USA

incidence: 27/27*, conc. range: 5–900 µg/kg, sample year: 1993, country: Switzerland⁴²³, *maize grits and meal

incidence: 1/8*, conc.: 11 µg/kg, sample year: unknown, country: Sweden⁶⁸², *grits, flour, gruel

incidence: 42/46, conc. range: ≤590 µg/kg, Ø conc.: 36.5 µg/kg, sample year: 2004–2007, country: Japan⁹⁰⁰

incidence: 7/12, conc. range: ≤155 µg/kg, Ø conc.: 39.1 µg/kg*, sample year: 1999, country: Argentina⁹⁵⁵, *of pos sa?

incidence: 1/12*, conc.: 98 µg/kg, sample year: 2001, country: Brazil⁹⁶⁰, *Canjica (1 sa co-contaminated with FB₁ and FB₂)

FUMONISIN B₃

incidence: 39/46, conc. range: ≤358 µg/kg, Ø conc.: 22.8 µg/kg, year: 2004–2007, country: Japan⁹⁰⁰

incidence: 7/12, conc. range: ≤37 µg/kg, Ø conc.: 10.2 µg/kg*, sample year: 1999, country: Argentina⁹⁵⁵, *of pos sa?

FUMONISINS (B₁, B₂, B₃)

incidence: 12/12*, conc. range: <100–100 µg/kg, sample year: 1993, country: USA³⁷⁰, *flaking grits

incidence: 16/20*, conc. range: 16–2,124 µg/kg, sample year: 1994/1995, country: UK³⁸³, *polenta

FUMONISINS

incidence: 3/3*, conc. range: 3.6–2,600 µg/kg, Ø conc.: 869 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *conventional (3 sa co-contaminated with DON, FBS, and ZEA)

incidence: 0/1*, conc.: no contamination, sample year: 1997, country: Germany⁵⁶², sa from Italy, *organic

incidence: 6/7*, conc. range: <9–1,243 µg/kg, Ø conc.: 559 µg/kg, sample year: 1995/1996, country: Czech Republic⁶⁷⁰, *gluten-free polenta

FUMONISINS (TOTAL)

incidence: 78/78*, conc. range: 73–1,053 µg/kg, Ø conc.: 366 µg/kg, sample

year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina, *flaking grits

incidence: 13/47*, conc. range: ≤258 µg/kg, Ø conc.: 140 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina, *cooked grits

incidence: 2/3*, conc. range: 47,100–64,000 µg/kg, Ø conc.: 55,550 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹, *corn semolina

incidence: 1/4, conc.: 36,300 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹

HT-2 TOXIN

incidence: 3/14*, conc. range: 5–26 µg/kg, Ø conc.: 12 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶, *semolina

incidence: 1/6*, conc.: 26 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *semolina

incidence: 1/6, conc.: 555 µg/kg, sample year: 2001/2002, country: Brazil¹²⁷⁵ (1 sa co-contaminated with HT-2 and T-2)

MONILIFORMIN

incidence: 16/20*, conc. range: ≤135 µg/kg, sample year: unknown, country: UK⁷⁴³, *polenta

incidence: 1/2, conc.: 31.1 µg/kg, sample year: unknown, country: Germany¹⁴⁶¹

NIVALENOL

incidence: 1/14*, conc. range: 36 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶, *semolina

incidence: 4/8*, conc. range: 12–46 µg/kg, sample year: 2000/2001, country: UK⁸³⁶, *polenta (2 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 1 sa co-contaminated with DON, NIV, and ZEA, 1 sa co-contaminated with DON and NIV)

T-2 TOXIN

incidence: 2/14*, conc. range: 4–8 µg/kg, Ø conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶, *semolina

incidence: 1/6*, conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *semolina

incidence: 1/6, conc.: 767 µg/kg, sample year: 2001/2002, country: Brazil¹²⁷⁵ (1 sa co-contaminated with HT-2 and T-2)

ZEARALENONE

incidence: 11/14*, conc. range: 2–42 µg/kg, Ø conc.: 12 µg/kg, sample year: 2000/2001, country: Germany⁵¹⁶, *semolina

incidence: 3/6*, conc. range: 2–9 µg/kg, Ø conc.: 5 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *semolina

incidence: 3/3*, conc. range: 38–90 µg/kg, Ø conc.: 58.3 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *conventional (3 sa co-contaminated with DON, FBS, and ZEA)

incidence: 1/1*, conc.: 18 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Italy, *organic (1 sa co-contaminated with DON and ZEA)

incidence: 5/8, conc. range: 8–23.4 µg/kg, sample year: 2000/2001, country: UK⁸³⁶ (2 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, NIV, and ZEA)

ZEARALENONE-4-SULFATE

incidence: 1/3*, conc.: 2.1 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, *polenta

Grit (wheat grits) Synonym: semolina may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 0/0* **, no sa investigated, sample year: 1997, country: Germany⁵⁶², *whole wheat grits, **conventional

incidence: 1/1* **, conc.: 160 µg/kg, sample year: 1997, country: Germany⁵⁶², *whole wheat grits, **organic

incidence: ?/3*, conc. range: <100 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, *wheat semolina

incidence: 13/13, conc. range: ≤172 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 15/15, conc. range: 5.8–55.4 µg/kg, Ø conc.: 17.3 µg/kg, sample year: unknown, country: Spain¹⁵⁴⁵

3-ACETYLDEOXYNIVALENOL

incidence: 2/13, conc. range: ≤0.47 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 1/15, conc.: 4.4 µg/kg, sample year: unknown, country: Spain¹⁵⁴⁵

15-ACETYLDEOXYNIVALENOL

incidence: 6/13, conc. range: ≤0.70 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/13, conc.: 0.18 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

HT-2 TOXIN

incidence: 7/13, conc. range: ≤0.67 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 5/15, conc. range: 6.7–15.2 µg/kg, Ø conc.: 8.9 µg/kg, sample year: unknown, country: Spain¹⁵⁴⁵

NIVALENOL

incidence: 4/13, conc. range: ≤35 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 3/15, conc. range: 8.8–13.6 µg/kg, Ø conc.: 10.9 µg/kg, sample year: unknown, country: Spain¹⁵⁴⁵

MONOACETOXYSCIRPENOL

incidence: 8/13, conc. range: ≤0.06 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TOXIN

incidence: 5/13, conc. range: ≤ 0.08 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

T-2 TETRAOL

incidence: 1/13, conc.: 0.46 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

Groats may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/25*, conc. range: 0.1 – 0.3 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Poland¹¹⁵⁶, *barley, corn, wheat

Groats (barley groats) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 21/31, conc. range: ≤ 0.95 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰

Groats (oat groats) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/2, conc. range: 59 – 88 $\mu\text{g}/\text{kg}$, \emptyset conc.: 74 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵²⁰

HT-2 TOXIN

incidence: 2/2, conc. range: 6 – 9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany⁵²⁰

Groats (wheat groats) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/40, conc.: 3.5 $\mu\text{g}/\text{kg}$, sample year: 1990–1992, country: Poland¹¹⁵⁶

Grogannut see Nut (grogannuts)

Groundnuts see Nut (peanuts)

Gruel may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/48*, conc.: 0.252 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Nigeria³⁶¹, *maize-based gruel (1 sa co-contaminated with AFB₁ and OTA)

AFLATOXIN B₂

incidence: 2/48*, conc. range: 0.002 – 0.056 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.029 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Nigeria³⁶¹, *maize-based gruel (1 sa co-contaminated with AFB₂, AFG₁, and AFM₁, 1 sa co-contaminated with AFB₂ and OTA)

AFLATOXIN G₁

incidence: 2/48*, conc. range: 4.830 – 19.716 $\mu\text{g}/\text{kg}$, \emptyset conc.: 12.3 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Nigeria³⁶¹, *maize-based gruel (1 sa co-contaminated with AFB₂, AFG₁, and AFM₁, 1 sa contaminated solely with AFG₁)

AFLATOXIN G₂

incidence: 2/48*, conc. range: 0.125 – 0.263 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.203 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Nigeria³⁶¹, *maize-based gruel

AFLATOXIN M₁

incidence: 6/48*, conc. range: 0.007 – 0.738 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.3983 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Nigeria³⁶¹, *maize-based gruel (1 sa co-contaminated with AFB₂, AFG₁, and AFM₁, 5 sa contaminated solely with AFM₁)

AFLATOXIN M₂

incidence: 1/48*, conc.: 0.184 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Nigeria³⁶¹, *maize-based gruel

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 4/48*, conc. range: 0.142–6.516 µg/kg, Ø conc.: 1.913 µg/kg, sample year: 1993, country: Nigeria³⁶¹, *maize-based gruel (1 sa co-contaminated with AFB₁ and OTA, 1 sa co-contaminated with AFB₂ and OTA, 2 sa contaminated solely with OTA)

Gruel consisted of cereals (oat, wheat, or rye flour, or rice) and is boiled in milk or water.

Guinea corn see Sorghum

Ham may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/22*, conc. range: ≤0.04–0.06 µg/kg, Ø conc.: 0.05 µg/kg, sample year: 2001/2002, country: Italy³²², *muscle for ham

incidence: 12/30*, conc. range: ≤28.42 µg/kg, Ø conc.: 4.06 µg/kg, sample year: 2001/2002, country: Italy³²², *dry-cured ham

incidence: 1/12*, conc.: 0.05 µg/kg, sample year: 2001/2002, country: Italy³²², *cooked ham

incidence: 17/21*, conc. range: 0.04–0.70 µg/kg (3 sa), 0.70–1.00 µg/kg (6 sa), >1.00–2.00 µg/kg (7 sa), 2.20 µg/kg (1 sa), sample year: unknown, country: Italy³⁹⁴, *6 month aged ham sa

incidence: 18/21*, conc. range: 0.04–0.70 µg/kg (6 sa), 0.70–1.00 µg/kg (5 sa), >1.00–2.00 µg/kg (7 sa), sample year: unknown, country: Italy³⁹⁴, *12 month aged ham sa

incidence: 25/30, conc. range: 0.20–2.00 µg/kg, Ø conc.: 0.75 µg/kg, sample year: unknown, country: Italy⁴⁸⁵

incidence: 2/5*, conc. range: 0.28–1.52 µg/kg, Ø conc.: 0.9 µg/kg, sample year: unknown, country: Italy¹⁴⁵⁴, *dry-cured ham (inner part)

incidence: 3/5*, conc. range: 0.11–7.28 µg/kg, Ø conc.: 2.67 µg/kg, sample year: unknown, country: Italy¹⁴⁵⁴, *dry-cured ham (outer part, 10-mm thickness)

incidence: 2/5*, conc. range: 5.20–6.20 µg/kg, Ø conc.: 5.7 µg/kg, sample year: unknown, country: Italy¹⁴⁵⁴, *smoked ham (outer part, 10-mm thickness)

incidence: 40/40*, conc. range: 0.61–4.11 µg/kg, Ø conc.: 1.86 µg/kg, sample year: 2007–2010, country: Italy¹⁶⁰³, *dry-cured ham

incidence: 10/20*, conc. range: 2.0–160.9 µg/kg, Ø conc.: 27.1 µg/kg, sample year: unknown, country: Spain¹⁶⁰⁷, *Iberian ham after 6 months of ripening (superficial portion, up to 0.5 cm from the surface)

incidence: 3/20*, conc. range: 2.0–28.4 µg/kg, Ø conc.: 16.3 µg/kg, sample year: unknown, country: Spain¹⁶⁰⁷, *Iberian ham after 6 months of ripening (deep portion, 0.5–1.0 cm beneath the surface)

Hard Rouse cheese see Cheese (Hard Rouse cheese)

Hare kidney see Kidney (hare kidney)

Hare liver see Liver (hare liver)

Hatomugi see Job's-tears

Haverti cheese see Cheese (Haverti cheese)

Hazelnut paste see Paste (hazelnut paste)

Hazelnuts see Nut (hazelnuts)

Helva may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/34*, conc. range:

1.5–18 µg/kg, Ø conc.: 7.5 µg/kg, sample year: 2004, country: Turkey¹⁵⁶³, *helva with pistachio

Helva (halvas) is a traditional Turkish food (mixture of tahin: milled dehulled roasted sesame seeds, sugar, citric or tartaric acid, and *Sapronaria officinalis* root extract).

Herbal drug see Medicinal plant

Herbal medicinal products and medicinal herbs see Medicinal plant

Herbs may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 9/31*, conc. range: 24–105 µg/kg, Ø conc.: 49 µg/kg, sample year: unknown, country: USA/Egypt¹⁶², sa from Egypt, *herbs and medicinal plants

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 5/41*, conc. range: 1–1.9 µg/kg (1 sa), 2–3.9 µg/kg (3 sa), 4–10 µg/kg (1 sa), sample year: unknown, country: UK¹²², sa imported, *herbs and spices (ginger: 1.3, 2.0, 8.4 µg total AF/ kg; garlic powder: 3.3 µg total AF/ kg; fenugreek: 2.5 µg total AF/ kg)

Fusarium Toxins

FUMONISIN B₁

incidence: 1/9*, conc.: 72.2 µg/kg, sample year: 2009/2010, country: China¹⁶³⁸, *not moldy aromatic herbs

FUMONISIN B₂

incidence: 1/2*, conc.: 139.7 µg/kg, sample year: 2009/2010, country: China¹⁶³⁸, *moldy aromatic herbs

incidence: 1/9*, conc.: 449.3 µg/kg, sample year: 2009/2010, country: China¹⁶³⁸, *not moldy aromatic herbs

Hot dog may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/25, conc.: 5 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 1/25, conc.: 2 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

Human breast milk see Milk (human breast milk)

Ice cream may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 6/16, conc. range: ≤0.02618 µg/kg, sample year: unknown, country: Turkey¹⁵²⁶

Incaparina may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/8, conc. range: 3–214 µg/kg, Ø conc.: 73.9 µg/kg, sample year: 1998/2000, country: USA⁸²⁴, sa from Guatemala and USA

AFLATOXIN B₂

incidence: 7/8*, conc. range: 1–32 µg/kg, Ø conc.: 14.9 µg/kg, sample year: 1998/2000, country: USA⁸²⁴, sa from Guatemala and USA

AFLATOXIN G₁

incidence: 1/5, conc.: 7 µg/kg, sample year: 1998/2000, country: USA⁸²⁴

Fusarium ToxinsFUMONISIN B₁

incidence: 1/1*, conc.: 970 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Guatemala, *harina de maiz + cottonseed flour (1 sa co-contaminated with FB₁ and FB₂)

incidence: 8/8*, conc. range: 200–1,700 µg/kg, Ø conc.: 663 µg/kg, sample year: 1998/2000, country: USA⁸²⁴, sa from Guatemala and USA

FUMONISIN B₂

incidence: 1/1*, conc.: 140 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Guatemala, *harina de maiz + cottonseed flour (1 sa co-contaminated with FB₁ and FB₂)

incidence: 4/8*, conc. range: 100–600 µg/kg, Ø conc.: 250 µg/kg, sample year: 1998/2000, country: USA⁸²⁴, sa from Guatemala and USA

FUMONISIN B₃

incidence: 2/8, conc. range: 100–200 µg/kg, Ø conc.: 150 µg/kg, sample year: 1998/2000, country: USA⁸²⁴, sa from USA and Guatemala

Incaparina is a mixture of corn and cottonseed flour, a high-protein food supplement.

Indian cassia see Spice (Indian cassia)

Infant cereal foods see Food (infant)

Infant food see Food (infant food) as well as Milk powder

Infant formula see Milk, infant formula as well as Cereal

Infulamfula see Beer

Ingwer see Spice (ingwer)

Instant food see Food

Isiqatha see Beer

Isoflavones (soy) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/12, conc.: 1 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet

Fusarium Toxins

FUMONISIN B₁

incidence: 1/12, conc.: 4 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet

Jam may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 7/12*, conc. range: 0.09–14.33 µg/kg, Ø conc.: 2.51 µg/kg, sample year: unknown, country: Germany⁶⁰⁴, *different moldy jams

PATULIN

incidence: 1/18*, conc.: 0.130 µg/kg, sample year: 1983, country: Italy¹⁰⁵, *jam and marmalade

Jam (apple jam) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/2*, conc.: 1,390 µg/kg, sample year: 1976, country: Finland⁷⁰⁰, *moldy apple jam

Jam (bean jam) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/68, conc.: 0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 5/41*, conc. range: 0.1–0.7 µg/kg, sample year: unknown, country: Japan¹⁸⁴, *white bean jam

incidence: 1/24*, conc.: 0.8 µg/kg, sample year: unknown, country: Japan¹⁸⁴, *red bean jam

AFLATOXIN B₂

incidence: 1/24*, conc.: 0.1 µg/kg, sample year: unknown, country: Japan¹⁸⁴, *red bean jam

Jam (quince jam) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 10/10*, conc. range: <LOQ–28.7 µg/kg, sample year: unknown, country: Portugal²⁵, *sa with different g of fruit and sugar

Jembe backing flour see Flour

Job's-tears may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/49, conc. range: 0.1–0.6 µg/kg, Ø conc.: 0.4 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 34?/144, conc. range: 0.1–14.9 µg/kg, sample year: unknown, country: Japan¹⁸⁴

incidence: 1/2, conc.: 1.1 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

AFLATOXIN B₂

incidence: 34?/144, conc. range: tr–1.8 µg/kg, sample year: unknown, country: Japan¹⁸⁴

incidence: 1/2, conc.: 0.1 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

AFLATOXIN G₁

incidence: 34?/144, conc. range: 0.3–0.7 µg/kg, sample year: unknown, country: Japan¹⁸⁴

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 13.6 µg/kg, sample year: unknown, country: Taiwan/Russia¹⁵⁰², sa from Taiwan

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/12, conc. range: 48–496 µg/kg, Ø conc.: 272 µg/kg, sample year: 1982–1985, country: Japan⁵³¹, sa from unknown origin (2 sa co-contaminated with DON, NIV, and ZEA)

NIVALENOL

incidence: 11/12, conc. range: 3–920 µg/kg, Ø conc.: 140 µg/kg, sample year: 1982–1985, country: Japan⁵³¹, sa from unknown origin (2 sa co-contaminated with DON, NIV, and ZEA, 4 sa co-contaminated with NIV and ZEA, 5 sa contaminated solely with NIV)

ZEARALENONE

incidence: 7/7, conc. range: 10–440 µg/kg, Ø conc.: 133 µg/kg, sample year: 1982–1985, country: Japan⁵³¹, sa from unknown origin (2 sa co-contaminated with DON, NIV, and ZEA, 4 sa co-contaminated with NIV and ZEA, 1 sa contaminated solely with ZEA)

incidence: 8/12, conc. range: 6–116 µg/kg, Ø conc.: 38.8 µg/kg, sample year: unknown, country: Japan⁵³⁵

Job's-tears serve as a source of food (cereals) and/or are a folk medicine.

Joints may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 14/40*, conc. range: ≤0.18 µg/kg, sample year: unknown, country: Germany⁵⁹⁸, *raw cured joints

Juice may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 7/7*, conc. range: 0.5–10 µg/kg, sample year: unknown, country: Germany⁷, *miscellaneous juices

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/11, conc.: 0.11 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

PATULIN

incidence: 7/40*, conc. range: 9.29–59.96 µg/l, Ø conc.: 19.9 µg/kg, sample year: unknown, country: Ivory Coast²⁷⁹, *apple, annanas, ginger, and passion fruit juice

incidence: 8/45*, conc. range: >LOQ to <10 µg/kg (8 sa, maximum: 1.7 µg/kg) sample year: 2003/2004, country: Italy¹³²⁷, *conventional

incidence: 6/12*, conc. range: >LOQ to <10 µg/kg (5 sa), 13.5 µg/kg (1 sa), sample year: 2003/2004, country: Italy¹³²⁷, *organic

incidence: 35/98*, conc. range: <10 µg/kg (20 sa), 10–50 µg/kg (15 sa, maximum: 44.89 µg/kg), sample year: 2005, country: Italy¹⁴³³, *conventional apple and mixed juices

incidence: 12/37*, conc. range: <10 µg/kg (4 sa), 10–50 µg/kg (7 sa), 55.41 µg/kg (1 sa), sample year: 2005, country: Italy¹⁴³³, *organic apple and mixed juices

Juice (apple juice) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 3/4, conc. range: 0.16–0.22 µg/kg, sample year: unknown, country: Germany⁹¹⁰

incidence: 9/44, conc. range: 1.7–3.5 µg/l, Ø conc.: 2.45 µg/l, sample year: 2009/2010, country: Germany¹⁰³⁸

incidence: 11/11, conc. range: 0.04–2.40 µg/l, Ø conc.: 0.98 µg/kg, sample year: unknown, country: Canada¹²²¹ (10 sa co-contaminated with AME and AOH, 1 sa contaminated solely with AOH)

ALTERNARIOL METHYL ETHER

incidence: 3/4, conc. range: pr, sample year: unknown, country: Germany⁹¹⁰

incidence: 1/7, conc.: 0.85 µg/l, sample year: unknown, country: Spain/Canada¹⁰⁵⁷

incidence: 10/11, conc. range: tr–0.43 µg/l, sample year: unknown, country: Canada¹²²¹ (10 sa co-contaminated with AME and AOH)

TENUAZONIC ACID

incidence: 5/5, conc. range: 0.6–6 µg/kg, sample year: unknown, country: Germany⁷

incidence: 1/7, conc.: 58 µg/l, sample year: unknown, country: Germany/Indonesia¹²¹¹, sa from Germany

Aspergillus ToxinsAFLATOXIN B₁

incidence: 5/5, conc. range: 20–30 µg/l, sample year: unknown, country: Egypt²²⁹

AFLATOXIN G₁

incidence: 5/5, conc. range: 20–30 µg/l, sample year: unknown, country: Egypt²²⁹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 15/51*, conc. range: ≤200 µg/l, Ø conc.: 123 µg/l, sample year: 2008, country: Saudi Arabia¹⁶¹⁵, *local and imported apple juice

PATULIN

incidence: 9/9* **, conc. range: <LOQ–12.6 µg/kg, sample year: unknown, country: Portugal²⁵, *100% apple juice, **conventional

incidence: 10/14* **, conc. range: <LOQ–9.9 µg/kg, sample year: unknown, country: Portugal²⁵, *different percentage of apple juice, **conventional

incidence: 6/6* **, conc. range: <LOQ–8.9 µg/kg, sample year: unknown,

country: Portugal²⁵, *different kinds of apple juice, **organic

incidence: 7/36*, conc. range: 20–300 µg/l, sample year: unknown, country: GDR¹⁷⁸, *trade apple juice

incidence: 5/10*, conc. range: 60–50,000 µg/l, sample year: unknown, country: GDR¹⁷⁸, *moldy apple juice

incidence: 122/234, conc. range: ≤376 µg/l, sample year: 1996, country: Turkey²¹⁸

incidence: 41/119, conc. range: ≤153 µg/l, sample year: 1997, country: Turkey²¹⁸

incidence: 5/67, conc. range: ≤103 µg/l, sample year: 1998, country: Turkey²¹⁸

incidence: 5/62, conc. range: ≤119 µg/l, sample year: 1999, country: Turkey²¹⁸

incidence: 2/13, conc. range: 5–10 µg/l, Ø conc.: 7.5 µg/kg, sample year: 1996–1998, country: South Africa²²²

incidence: 2/4*, conc. range: 5–45 µg/l, Ø conc.: 25 µg/kg, sample year: 1996–1998, country: South Africa²²², *carbonated apple juice

incidence: 2/3*, conc. range: 5 µg/l, Ø conc.: 5 µg/kg, sample year: 1996–1998, country: South Africa²²², *apple juice for infants

incidence: 27/45, conc. range: 19.1–47.3 µg/l (7 sa), 60.2–403.3 µg/l (19 sa), 732.8 µg/l (1 sa), Ø conc.: 140 µg/kg, sample year: 1998–2000, country: Turkey³¹⁶

incidence: 2/2, conc. range: 120–160 µg/l, Ø conc.: 140 µg/kg, sample year: unknown, country: South Africa³³¹

incidence: 1/1, conc.: 12 µg/l, sample year: unknown, country: USA⁴⁷⁹

incidence: 29/66, conc. range: 2.5–27 µg/l, sample year: unknown, country: Sweden⁴⁸⁴, sa imported and from Sweden

incidence: 20/20, conc. range: 1.1–107.6 µg/l, Ø conc.: 41.3 µg/l, sample year: unknown, country: Spain⁵⁰¹

incidence: 23/29, conc. range: tr (1 sa), LOQ–25 µg/l (14 sa), 25–50 µg/l (2 sa,

maximum: 38.8 µg/l), sample year: 2001, country: Belgium⁶⁷⁷

incidence: 12/14, conc. range: tr (1 sa), LOQ–25 µg/l (11 sa, maximum: 10.6 µg/l), sample year: 2001, country: Belgium⁶⁷⁷, sa from France, Germany, and Switzerland

incidence: 23/40, conc. range: 10 µg/l (4 sa), 11–50 µg/l (8 sa), 51–100 µg/l (4 sa), 101–200 µg/l (3 sa), 201–300 µg/l (3 sa), 350 µg/l (1 sa), sample year: 1976/1977, country: USA⁶⁹⁶

incidence: 140/241*, conc. range: 5–50 µg/l (69 sa), >50 µg/l (71 sa, maximum: 1,130 µg/l), sample year: 1989/1990, country: Australia⁶⁹⁷, *apple juice and mixed fruit juices

incidence: 1/30, conc.: 17 µg/l, sample year: 1992/1993 and 1995, country: Brazil⁶⁹⁸

incidence: 8/20*, conc. range: 30–16,400 µg/l, sample year: 1976, country: Finland⁷⁰⁰, *home-made apple juice

incidence: 8/13*, conc. range: 5–10 µg/l (5 sa), >10 µg/l (3 sa, maximum: 30 µg/l), sample year: unknown, country: UK⁷⁰³, *conventional

incidence: 1/1*, conc.: 56 µg/l, sample year: unknown, country: UK⁷⁰³, *organic

incidence: 1/3*, conc.: 5–10 µg/l, sample year: unknown, country: UK⁷⁰³, *long life apple juice

incidence: 82/100, conc. range: 0.5–10 µg/l (57 sa), >10–20 µg/l (10 sa), >20–30 µg/l (5 sa), >40–50 µg/l (3 sa), >50–60 µg/l (4 sa), >60–70 µg/l (1 sa), >100 µg/l (2 sa, maximum: 170 µg/l), sample year: 1992, country: Spain⁷⁰⁴

incidence: 10/10*, conc. range: 5.7–26 µg/l, sample year: 1996/1997, country: Germany⁷⁰⁵, *commercial products

incidence: 2/2*, conc. range: 11.4–23.9 µg/l, Ø conc.: 17.7 µg/l, sample year: 1996/1997, country: Germany⁷⁰⁵, *home-made apple juice

incidence: 1/1*, conc.: 0.7 µg/l, sample year: 1996/1997, country: Germany⁷⁰⁵, *apple-acerola, commercial product

incidence: 1/1, conc.: 1,000 µg/l, sample year: unknown, country: Canada⁷⁰⁶

incidence: 6/10, conc. range: 9.8–107.2 µg/l, Ø conc.: 36 µg/kg, sample year: unknown, country: Taiwan⁷⁰⁷

incidence: 140/140, conc. range: <1–220 µg/l, sample year: unknown, country: Norway⁷⁰⁸, sa from unknown origin and Norway

incidence: 8/13, conc. range: 44–309 µg/l, sample year: unknown, country: USA⁷⁰⁹

incidence: 74/113, conc. range: ≤50 µg/l (33 sa), >50 to ≤300 µg/l (33 sa), >300 µg/l (8 sa, maximum: 629 µg/l), sample year: 1988–1989, country: Australia⁷¹⁰

incidence: 3/20, conc. range: 106–216 µg/l, Ø conc.: 152 µg/kg, sample year: 1979–1980, country: New Zealand⁷¹²

incidence: 15/76, conc. range: 6.4–77.5 µg/l, Ø conc.: 15.38 µg/kg, sample year: unknown, country: Brazil⁷²⁶

incidence: 7/17*, conc. range: 10–49 µg/l (6 sa), 118 µg/l (1 sa), sample year: 1992, country: UK⁷²⁷, sa imported, *produced from concentrate

incidence: 7/21*, conc. range: 10–49 µg/l sample year: 1993, country: UK⁷²⁷, sa imported, *produced from concentrate

incidence: 11/15*, conc. range: 10–49 µg/l (7 sa), 50–99 µg/l (2 sa), 150–199 µg/l (1 sa), 434 µg/l (1 sa), sample year: 1992, country: UK⁷²⁷, *directly produced apple juice

incidence: 10/34*, conc. range: 10–49 µg/l (7 sa), 50–99 µg/l (3 sa, maximum: 92 µg/l), sample year: 1993, country: UK⁷²⁷, *directly produced apple juice

incidence: 26/76*, conc. range: 10–24 µg/l (19 sa), 50–99 µg/l (5 sa), >100 µg/l (2 sa, maximum: 118 µg/l), sample year: 1993, country: UK⁷³¹, *cloudy juice

incidence: 13/55*, conc. range: 10–24 µg/l (10 sa), 24–49 µg/l (2 sa), 50 µg/l (1 sa),

sample year: 1993, country: UK⁷³¹, *clear juice

incidence: 38/113*, conc. range: 10–24 µg/l (29 sa), 25–49 µg/l (5 sa), 50–99 µg/l (2 sa), >100 µg/l (2 sa, maximum: 497 µg/l), sample year: 1994, country: UK⁷³¹,

*directly produced equivalent to cloudy juice
incidence: 27/78*, conc. range: 10–24 µg/l (25 sa), 25–49 µg/l (2 sa), sample year: 1994, country: UK⁷³¹, *from concentrate equivalent to clear

incidence: 65/185*, conc. range: 10–24 µg/l (39 sa), 25–49 µg/l (15 sa), 50–99 µg/l (7 sa), >100 µg/l (4 sa, maximum: 490 µg/l), sample year: 1995, country: UK⁷³⁶, *cloudy juice

incidence: 62/173*, conc. range: 10–49 µg/l (58 sa), >50 µg/l (4 sa, maximum: 184 µg/l), sample year: unknown, country: UK⁷⁴¹, *directly produced and 1 concentrate

incidence: 110/199*, conc. range: 5–15 µg/l (55 sa), 15–50 µg/l (50 sa), >50 µg/l (5 sa, maximum: 171 µg/l), sample year: 1998, country: UK⁷⁴⁴, *directly produced

incidence: 38/101*, conc. range: 5–15 µg/l (35 sa), >15 µg/l (3 sa, maximum: 30 µg/l), sample year: 1998, country: UK⁷⁴⁴, *apple juice produced from concentrate

incidence: 3/140*, conc. range: tr (2 sa), 10–25 µg/l (1 sa), sample year: 2003, country: Japan⁸⁰⁴, *domestic sa

incidence: 1/6*, conc. range: 10–25 µg/l, sample year: 2003, country: Japan⁸⁰⁴, *imported sa

incidence: 5/39*, conc. range: tr, sample year: 2003, country: Japan⁸⁰⁴, *domestic from imported concentrate sa

incidence: 12/90*, conc. range: LOD–LOQ (8 sa), LOQ–25 µg/l (4 sa), Ø conc.: 10.2 µg/l, sample year: unknown, country: Belgium⁹²⁴, *conventional

incidence: 8/65*, conc. range: LOD–LOQ (3 sa), 25–50 µg/l (3 sa), >50–328.7 µg/l (2 sa), Ø conc.: 43.1 µg/l, sample year: unknown, country: Belgium⁹²⁴, *organic

incidence: 2/22*, conc. range: LOD–LOQ (1 sa), LOQ–25 µg/l (1 sa), Ø conc.: 10.5 µg/l, sample year: unknown, country: Belgium⁹²⁴, *handcrafted production method

incidence: 11/67*, conc. range: LOD–LOQ (5 sa), LOQ–25 µg/l (5 sa), 65.7 µg/l (1 sa), Ø conc.: 43.1 µg/l, sample year: unknown, country: Belgium⁹²⁴, *clear apple juice

incidence: 11/110*, conc. range: LOD–LOQ (7 sa), 25–50 µg/l (3 sa), 122.6 µg/l (1 sa), Ø conc.: 43.1 µg/l, sample year: unknown, country: Belgium⁹²⁴, *cloudy apple juice

incidence: 1/1*, conc.: 3.2 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴, *soft drink

incidence: 29/29, conc. range: 0.9–11.8 µg/kg, Ø conc.: 5.50 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴

incidence: 4/4, conc. range: 80–388 µg/kg, Ø conc.: 227.5 µg/kg, sample year: unknown, country: USA⁹⁶²

incidence: 30/71, conc. range: 6.25–10 µg/kg (25 sa), 10–25 µg/kg (5 sa, maximum: 15.0 µg/kg), sample year: 2008, country: Spain⁹⁶⁶

incidence: 15*/76, conc. range: 1.4–45.6 µg/kg, Ø conc.: 8.91 µg/kg, sample year: unknown, country: Japan⁹⁷¹, *5 clear, 1 cloudy, 1 blended, and 8 unspecified juice sa contaminated

incidence: 42/42, conc. range: <15 µg/l (13 sa), 15–50 µg/l (15 sa), >50 µg/l (14 sa, maximum: 285.3 µg/l), sample year: 2001/2002, country: Iran¹⁰²⁶

incidence: 2/2, conc. range: 38–78 µg/kg, Ø conc.: 58 µg/kg, sample year: unknown, country: Canada¹⁰⁴⁵

incidence: 31/145* **, conc. range: 8.8–2,700.4 µg/l, sample year: 2005/2006, country: USA¹¹³⁰, *apple-based beverages, **conventional

incidence: 6/14* **, conc. range: 17.9–264.8 µg/l, sample year: 2005/2006,

country: USA¹¹³⁰, *apple-based beverages, **organic

incidence: 3/27*, conc. range: 3–7 µg/kg, sample year: 2004/2005, country: Brazil¹¹⁵⁸, *apple-based juice

incidence: 54/58*, conc. range: 10–50 µg/l (48 sa), >50 µg/l (6 sa, maximum: 121.8 µg/l), sample year: 2006, country: Iran¹¹⁹⁴, *commercial clear apple juice

incidence: 4/15*, conc. range: 1.35–6.72 µg/l, Ø conc.: 3.35 µg/l, sample year: unknown, country: Japan¹¹⁹⁵, *cloudy apple juice

incidence: 5/15*, conc. range: 1.46–14.61 µg/l, Ø conc.: 5.87 µg/l, sample year: unknown, country: Japan¹¹⁹⁵, *clear apple juice

incidence: 2/12*, conc. range: 9.1–11.2 µg/l, Ø conc.: 10.15 µg/l, sample year: 2005, country: South Africa/Italy¹¹⁹⁷, sa from Italy, *included apple juice, nectar, and infant fruit juice organic or conventional; for detailed information please see the article

incidence: 5/8*, conc. range: 11.0–75.2 µg/l, Ø conc.: 31.2 µg/l, sample year: 2005, country: South Africa/Italy¹¹⁹⁷, sa from South Africa, *included apple juice, nectar and infant fruit juice organic or conventional; for detailed information please see the article

incidence: 7/14*, conc. range: 14.7–166 µg/l, Ø conc.: 83.89 µg/l, sample year: unknown, country: South Africa/Italy¹¹⁹⁷, sa from South Africa, *included apple juice, nectar, and one orange juice (uncontaminated); for detailed information please see the article

incidence: 3/52*, conc. range: 63.45–88.44 µg/l, Ø conc.: 78.36 µg/l, sample year: unknown, country: China/Singapore¹²³⁰, sa from China, *domestic apple-based drinks

incidence: 3/15, conc. range: 5–6 µg/l, Ø conc.: 5.33 µg/l, sample year: unknown,

country: Tunisia/France¹²⁷⁰, sa from Tunisia

incidence: 1/10, conc.: 6 µg/l, sample year: unknown, country: Tunisia/France¹²⁷⁰, sa imported

incidence: 63/95*, conc. range: 0.47–118.70 µg/l, Ø conc.: 30.04 µg/l, sample year: unknown, country: Spain¹²⁸⁹, *conventional

incidence: 3/5*, conc. range: 1.69–17.41 µg/l, Ø conc.: 11.4 µg/l, sample year: unknown, country: Spain¹²⁸⁹, *organic

incidence: 16/33*, conc. range: >LOQ to <10 µg/kg (14 sa), >10 to <25 µg/kg (1 sa), 53.4 µg/kg (1 sa), sample year: 2003/2004, country: Italy¹³²⁷, *conventional

incidence: 12/24*, conc. range: >LOQ to <10 µg/kg (10 sa), >50 µg/kg (2 sa, maximum: 69.3 µg/kg), sample year: 2003/2004, country: Italy¹³²⁷, *organic

incidence: 12/71, conc. range: 15–24 µg/l (8 sa), 24–49 µg/l (4 sa, maximum: 39.9 µg/l), sample year: unknown, country: Taiwan¹³³⁴

incidence: 5/39, conc. range: 2–50 µg/kg, sample year: 1996–1998, country: Sweden¹⁵⁶⁵

incidence: 3/51*, conc. range: ≤152.5 µg/l, Ø conc.: 140 µg/l, sample year: 2008, country: Saudi Arabia¹⁶¹⁵, *local and imported apple juice

incidence: 4/32* **, conc. range: LOD–LOQ (2 sa), LOQ–10 µg/kg (2 sa, maximum: 5.5 µg/kg), sample year: 2007–2009, country: Portugal¹⁶⁴³, *clear apple juice, **enclosed are 10 infant drinks

incidence: 24/36*, conc. range: LOD–LOQ (10 sa), LOQ–10 µg/kg (5 sa), 10–25 µg/kg (5 sa), 25–50 µg/kg (4 sa, maximum: 42 µg/kg), sample year: sample year: 2007–2009, country: Portugal¹⁶⁴³, *cloudy apple juice

Juice (apple concentrate) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 13/18, conc. range: tr (1 sa), 1.35–3.56 µg/l (12 sa), sample year: 1993, country: Spain²⁸⁶

incidence: 4/14, conc. range: 2.99–5.42 µg/l, sample year: 1994, country: Spain²⁸⁶

ALTERNARIOL METHYL ETHER

incidence: 13/18, conc. range: tr, sample year: 1993, country: Spain²⁸⁶

incidence: 4/14, conc. range: tr (3 sa), 1.71 µg/l (1 sa), sample year: 1994, country: Spain²⁸⁶

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 16/16, conc. range: 56–231 µg/l, Ø conc.: 107 µg/kg, sample year: unknown, country: Brazil¹¹⁶

incidence: 16/16, conc. range: 5–50 µg/l (6 sa), >50 µg/l (2 sa, maximum: 646 µg/l), sample year: 1989/1990, country: Australia⁶⁹⁷

incidence: 215/215, conc. range: 7–50 µg/l (117 sa), >50 µg/l (98 sa, maximum: 376 µg/l), sample year: 1996/1997, country: Turkey⁶⁹⁹

incidence: 13/64, conc. range: 50–690 µg/l, sample year: 1976, country: Finland⁷⁰⁰, sa imported

incidence: 2/7, conc. range: 460–1,450 µg/l, Ø conc.: 955 µg/kg, sample year: 1976, country: Finland⁷⁰⁰

incidence: 44/44, conc. range: 10 µg/l (9 sa), 11–20 µg/l (16 sa), 21–30 µg/l (7 sa), 31–40 µg/l (4 sa), 41–50 µg/l (6 sa), >50 µg/l (2 sa, maximum: 75.4 µg/l), sample year: 1996, country: Turkey⁷²⁵

incidence: 23/23*, conc. range: 2.6–36.8 µg/kg, Ø conc.: 11.60 µg/kg, sample

year: 2004–2006, country: Greece⁹³⁴, sa from Turkey, *concentrated fruit juice
 incidence: 14/14*, conc. range: 3.8–16.2 µg/kg, Ø conc.: 8.50 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴, sa from China, *concentrated fruit juice
 incidence: 23/23, conc. range: <15 µg/l (5 sa), 15–50 µg/l (5 sa), >50 µg/l (13 sa, maximum: 148.8 µg/l), sample year: 2001/2002, country: Iran¹⁰²⁶
 incidence: 1/8, conc.: 5 µg/l, sample year: unknown, country: Tunisia/France¹²⁷⁰, sa from Tunisia

Juice (apricot juice) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 2/2, conc. range: 25–27 µg/kg, Ø conc.: 26 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 2/2*, conc. range: 12.2–15.3 µg/kg, Ø conc.: 13.70 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴, sa from China, *concentrated fruit juice

Juice (banana juice) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 2/3, conc. range: 0.5–0.7 µg/kg, Ø conc.: 0.6 µg/kg, sample year: unknown, country: Germany⁷

Juice (black currant juice) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 5/5, conc. range: 0.5–2.3 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/19, conc. range: ≤0.06 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and different countries

PATULIN

incidence: 1/1, conc.: 0.1 µg/l, sample year: 1996/1997, country: Germany⁷⁰⁵, *commercial product

Juice (carrot juice) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/18, conc.: 0.01 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and different countries

Juice (cherry juice) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 6/6, conc. range: 0.8–54 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/1*, conc.: 0.2 µg/l, sample year: 1996/1997, country: Germany⁷⁰⁵, *sour cherry juice, commercial product

Chaetomium Toxins

CHAETOGLOBOSIN A

incidence: 1/1, conc.: pr, sample year: unknown, country: Denmark⁸⁹³

CHAETOGLOBOSIN C

incidence: 1/1, conc.: pr, sample year: unknown, country: Denmark⁸⁹³

Penicillium Toxins

COMMUNESIN B

incidence: 1/1, conc.: pr, sample year: unknown, country: Denmark⁸⁹³

ROQUEFORTINE

incidence: 1/1, conc.: pr, sample year:
unknown, country: Denmark⁸⁹³

Juice (cranberry juice) may contain
the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/5, conc.: 0.04 µg/l, sample
year: unknown, country: Canada⁹⁸⁶,
sa from Canada and USA

ALTERNARIOL METHYL ETHER

incidence: 1/5, conc.: 0.003 µg/l, sample
year: unknown, country: Canada⁹⁸⁶,
sa from Canada and USA

Juice (fruit juice) may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/14*, conc.: 1.16 µg/l, sample
year: unknown, country: Morocco²²⁸,
*various fruit juices

PATULIN

incidence: 2/6*, conc. range: 5 µg/l, Ø
conc.: 5 µg/kg, sample year: 1996–1998,
country: South Africa²²², *mixed
fruit juice

incidence: 4/7*, conc. range: 5–20 µg/l, Ø
conc.: 13.75 µg/l, sample year: 1996–1998,
country: South Africa²²², *mixed fruit
juices for infants

incidence: 12/12*, conc. range: 2.8–
11.2 µg/kg, Ø conc.: 5.60 µg/kg, sample
year: 2004–2006, country: Greece⁹³⁴,
*mixed fruit juices (apple included)

incidence: 2/12, conc. range: 5–6 µg/l,
Ø conc.: 5.5 µg/l, sample year: unknown,
country: Tunisia/France¹²⁷⁰,
sa from Tunisia (mixed fruit juice)

incidence: 1/8, conc.: 5 µg/l, sample year:
unknown, country: Tunisia/France¹²⁷⁰, sa
imported (mixed fruit juice)

Juice (gooseberry juice) may
contain the following mycotoxins:

Chaetomium Toxins

CHAETOGLOBOSIN A

incidence: 1/1, conc.: pr, sample year:
unknown, country: Denmark⁸⁹³

Penicillium Toxins

COMMUNESIN B

incidence: 1/1, conc.: pr, sample year:
unknown, country: Denmark⁸⁹³

Juice (grape juice) may contain the
following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 5/5, conc. range: 0.10–1.05 µg/
kg, sample year: unknown, country:
Germany⁹¹⁰ (2 sa co-contaminated with
AME and AOH, 3 sa contaminated solely
with AOH)

incidence: 3/10*, conc. range: 0.03–
0.46 µg/l, Ø conc.: 0.23 µg/l, sample year:
unknown, country: Canada⁹⁸⁶, sa from
Canada and USA, *red grape juice

incidence: 1/1, conc.: 1.6 µg/l, sample year:
unknown, country: Canada¹²²¹ (1 sa
co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 2/5, conc.: pr, sample year:
unknown, country: Germany⁹¹⁰ (2 sa co-
contaminated with AME and AOH)

incidence: 5/10*, conc. range: 0.01–
39.5 µg/l, Ø conc.: 7.916 µg/l, sample year:
unknown, country: Canada⁹⁸⁶, sa from
Canada and USA, *red grape juice

incidence: 1/1, conc.: 0.23 µg/l, sample year:
unknown, country: Canada¹²²¹ (1 sa
co-contaminated with AME and AOH)

TENUAZONIC ACID

incidence: 4/4, conc. range: 1.7–7 µg/
kg, sample year: unknown, country:
Germany⁷

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 7/7*, conc. range: 0.0016–0.0647 µg/l, Ø conc.: 0.0258 µg/kg, sample year: unknown, country: Poland²⁵⁰, *grape juice and drinks

incidence: 34/48, conc. range: 0.0212–0.100 µg/l, Ø conc.: 0.038 µg/l, sample year: unknown, country: Brazil/Argentina²⁶⁰, sa from Brazil

incidence: 19/20*, conc. range: 0.01–0.19 µg/l (9 sa), 0.41–1 µg/l (7 sa), 1.1–2 µg/l (2 sa), 2.05 µg/l (1 sa), sample year: 1998, country: UK⁶³⁸, sa from different countries, *red and white grape juice

incidence: 21/27*, conc. range: ≤1.3 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and other countries, *white grape juice

incidence: 56/64*, conc. range: ≤5.3 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and other countries, *red grape juice

incidence: 4/14*, conc. range: LOD–0.050 µg/l (3 sa), 0.071 µg/l (1 sa), sample year: 1999/2000, country: Canada⁶⁷⁶, sa from Canada and USA, *white grape juice

incidence: 5/25*, conc. range: LOD–0.050 µg/l (2 sa), >0.050 µg/l (3 sa, maximum: 0.104 µg/l), sample year: 1999/2000, country: Canada⁶⁷⁶, sa from Canada and USA, *red grape juice

incidence: 8/11*, conc. range: ≤0.311 µg/l, sample year: 1994/1995, country: Switzerland⁶⁹¹, sa from Switzerland, France, and Italy, *red and white grape juice

incidence: 27/37*, conc. range: ≤6.72 µg/l, Ø conc.: 0.82 µg/l, sample year: 1999/2000, country: Germany¹⁰¹⁰, *35 out of them red juices

PATULIN

incidence: 2/2*, conc. range: 4.9–5.2 µg/l, Ø conc.: 5.1 µg/kg, sample year: 1996/1997, country: Germany⁷⁰⁵, *commercial products

Juice (grapefruit juice) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/2, conc.: <LOQ, sample year: 2011, country: Argentina¹⁵⁸¹

Juice (guava juice) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 2/5, conc. range: 12 µg/l, sample year: unknown, country: Egypt²²⁹

Juice (hawthorn juice) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 6/43*, conc. range: 19.8–206.88 µg/l, Ø conc.: 116.34 µg/l, sample year: unknown, country: China/Singapore¹²³⁰, sa from China, *domestic hawthorn-based drinks

Juice (mango juice) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 2/5, conc. range: 12 µg/l, sample year: unknown, country: Egypt²²⁹

Juice (orange juice) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 2/2, conc. range: 0.16–0.24 µg/kg, Ø conc.: 0.20 µg/kg, sample year: unknown, country: Germany⁹¹⁰ (2 sa co-contaminated with AME and AOH)

incidence: 2/31, conc. range: <LOQ, sample year: 2011, country: Argentina¹⁵⁸¹

ALTERNARIOL METHYL ETHER

incidence: 2/2, conc. range: 0.18–0.27 µg/kg, Ø conc.: 0.23 µg/kg, sample year: unknown, country: Germany⁹¹⁰ (2 sa co-contaminated with AME and AOH)

TENUAZONIC ACID

incidence: 6/6, conc. range: 1.0–1.9 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus and *Penicillium* Toxins**PATULIN**

incidence: 1/1*, conc.: 0.1 µg/l, sample year: 1996/1997, country: Germany⁷⁰⁵, *commercial product

incidence: 3/3, conc. range: 3.1–10.8 µg/kg, Ø conc.: 6.80 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴

Juice (pear juice) may contain the following mycotoxins:

Alternaria Toxins**TENUAZONIC ACID**

incidence: 3/3, conc. range: 0.5–23 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus and *Penicillium* Toxins**PATULIN**

incidence: 1/7*, conc.: 1.1 µg/kg, sample year: 2003/2004, country: Italy¹³²⁷, *conventional

incidence: 4/8*, conc. range: >LOQ to <10 µg/kg (2 sa), >10 to <25 µg/kg (1 sa), 61.0 µg/kg (1 sa), sample year: 2003/2004, country: Italy¹³²⁷, *organic

Juice (pineapple juice) may contain the following mycotoxins:

Aspergillus Toxins**PATULIN**

incidence: 1/1*, conc.: 7.7 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴, sa from unknown origin, *concentrated fruit juice

Juice (pomegranate juice) may contain the following mycotoxins:

Alternaria Toxins**TENUAZONIC ACID**

incidence: 2/2, conc. range: 8–13 µg/kg, Ø conc.: 10.5 µg/kg, sample year: unknown, country: Germany⁷

Juice (raspberry juice) may contain the following mycotoxins:

Alternaria Toxins**ALTERNARIOL**

incidence: 1/1, conc.: 0.84 µg/l, sample year: unknown, country: Canada¹²²¹

Juice (Roseship juice) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins**PATULIN**

incidence: 2/2, conc. range: 3.5–3.6 µg/kg, Ø conc.: 3.55 µg/kg, sample year: 2004–2006, country: Greece⁹³⁴

Juice (strawberry juice) may contain the following mycotoxins:

Alternaria Toxins**TENUAZONIC ACID**

incidence: 2/2, conc. range: 5–6 µg/kg, Ø conc.: 5.5 µg/kg, sample year: unknown, country: Germany⁷

Juice (tomato juice) may contain the following mycotoxins:

Alternaria Toxins**ALTERNARIOL**

incidence: 2/2, conc. range: 0.52–1.99 µg/kg, Ø conc.: 1.26 µg/kg, sample year: unknown, country: Germany⁹¹⁰ (2 sa co-contaminated with AME and AOH)

incidence: 9/16, conc. range: 1.1–3.1 µg/l, Ø conc.: 1.9 µg/l, sample year: 2009/2010, country: Germany¹⁰³⁸

incidence: 1/1, conc.: 5.4 µg/kg, sample year: unknown, country: Germany¹²¹² (1 sa co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 2/2, conc. range: 0.23–0.38 µg/kg, Ø conc.: 0.31 µg/kg, sample year: unknown, country: Germany⁹¹⁰ (2 sa co-contaminated with AME and AOH)

incidence: 1/1, conc.: 0.9 µg/kg, sample year: unknown, country: Germany¹²¹² (1 sa co-contaminated with AME and AOH)

TENUAZONIC ACID

incidence: 3/15, conc. range: 61–227 µg/l, Ø conc.: 130.7 µg/kg, sample year: unknown, country: Germany/Indonesia¹²¹¹, sa from Germany

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/30*, conc. range: ≤0.032 µg/l, sample year: unknown, country: Germany⁶³⁹, *sa from Germany and different countries

Juice (vegetable juice) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/1*, conc.: 7.82 µg/kg, sample year: unknown, country: Germany⁹¹⁰, *consisted of tomatoes, carrots, celery, beetroot, and red pepper (1 sa co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/1*, conc.: 0.79 µg/kg, sample year: unknown, country: Germany⁹¹⁰, *consisted of tomatoes, carrots, celery, beetroot, and red pepper (1 sa co-contaminated with AME and AOH)

incidence: 1/2, conc.: 0.1 µg/kg, sample year: unknown, country: Germany¹²¹²

Kashar cheese see Cheese (Kashar cheese)

Kariesh cheese see Cheese (Kariesh cheese)

Kashkineh see Food

Kenkey may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 15/16*, conc. range: 1.1–153 µg/kg**, Ø conc.: 28.7 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *Ga Kenkey, **expressed on dry weight basis

AFLATOXIN B₂

incidence: 15/16*, conc. range: 0.8–43.5 µg/kg**, Ø conc.: 8.5 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *Ga Kenkey, **expressed on dry weight basis

AFLATOXIN G₁

incidence: 10/16*, conc. range: 1–69.4 µg/kg**, Ø conc.: 17.8 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *Ga Kenkey, **expressed on dry weight basis

AFLATOXIN G₂

incidence: 7/16*, conc. range: 1.6–5.7 µg/kg**, Ø conc.: 3.9 µg/kg**, sample year: unknown, country: Ghana/Denmark²⁸⁰, sa from Ghana, *Ga Kenkey, **expressed on dry weight basis

AFLATOXINS (TOTAL)

incidence: 15/16, conc. range: 6.15–196.10 µg/kg, sample year: unknown, country: Ghana/Denmark²⁷⁸, sa from Ghana; for detailed information please see the article Kenkey is an end product of maize dough fermentation.

Kernel (apricot kernels) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/8, conc.: 61.05 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Algeria (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 3/8, conc. range: 0.17–9.64 µg/kg*, Ø conc.: 3.38 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Algeria and Turkey (1 sa co-contaminated with AFB₁ and AFB₂, 2 sa co-contaminated with AFB₂ and AFG₁)

AFLATOXIN G₁

incidence: 2/8, conc. range: 0.22–0.32 µg/kg*, Ø conc.: 0.27 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey (2 sa co-contaminated with AFB₂ and AFG₁)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 4/15, conc. range: 0.7–5.6 µg/kg, Ø conc.: 2.65 µg/kg, sample year: 2009, country: Pakistan¹⁵³²

Kernel (pumpkin kernels) may contain the following mycotoxins:

Fusarium Toxins

HT-2 TOXIN

incidence: 1/5, conc.: 5 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

ZEARALENONE

incidence: 1/5, conc.: 4 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

Ketchup see Tomato ketchup

Kheri see Millet

Kidney (hare kidney) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 94/168*, conc. range: 0.300–3.210 µg/kg, Ø conc.: 0.658 µg/kg, sample year: unknown, country: Czechoslovakia³¹, *wild hares

Kidney (pig kidney) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 9/125, conc. range: 0.5 to <1.0 µg/kg (1 sa), 1.0 to <5.0 µg/kg (4 sa), 5.0 to <10.0 µg/kg (2 sa), >10.0 µg/kg (2 sa), sample year: unknown, country: UK⁵⁷⁵

OCHRATOXIN A

incidence: 3/300*, conc. range: 0.40–1.40 µg/kg, Ø conc.: 0.79 µg/kg, sample year: 1997, country: France²³⁴, *normal kidneys

incidence: 6/100*, conc. range: 0.16–0.48 µg/kg, sample year: 1997, country: France²³⁴, *nephropathic kidneys

incidence: 238/710*, conc. range: 0.17–5 µg/kg, sample year: 1998, country: France²³⁴, *normal kidneys

incidence: 52*/214,700**, conc. range: 1 to <2 µg/kg (27 sa), 2–10 µg/kg (25 sa), sample year: 1983/1984, country: Poland/Sweden⁵⁶⁰, sa from Poland, *suspected kidneys, **slaughtered pigs

incidence: 136/378, conc. range: 0.5 to <1.0 µg/kg (53 sa), 1.0 to <5.0 µg/kg (68 sa), 5.0 to <10.0 µg/kg (10 sa), >10.0 µg/kg (5 sa), sample year: unknown, country: UK⁵⁷⁵

incidence: 11/36, conc. range: 0.1–0.2 µg/kg (10 sa), 0.3 µg/kg (1 sa), sample year: unknown, country: Switzerland⁵⁷⁸

incidence: 4,498/7,639*, conc. range:
>25 µg/kg (4,293 sa), >150 µg/kg (205 sa),
sample year: 1983, country: Denmark⁵⁸³,
*suspected kidneys

incidence: 41/52*, conc. range: ≤3.18 µg/
kg, Ø conc.: 0.54 µg/kg, sample year: 1998,
country: Romania/Germany⁵⁸⁶, sa from
Romania, *slaughtered pigs

incidence: 21/71*, conc. range: 1–5 µg/kg
(18 sa), 5–20 µg/kg (3 sa), year: unknown,
country: Czechoslovakia⁵⁹⁵, *kidneys with
macroscopic lesions

incidence: 27/61, conc. range: ≤9.33 µg/
kg, sample year: unknown, country:
Germany⁵⁹⁸

incidence: 27/113*, conc. range: tr–23 µg/
kg, sample year: 1982/1983, country:
Poland/Sweden⁶²¹, sa from Poland,
*suspected kidneys

incidence: 284/300*, conc. range: 0.02–
0.06 µg/kg (54 sa), 0.06–0.09 µg/kg (27 sa),
0.09–0.5 µg/kg (140 sa), 0.5–1.00 µg/kg (39
sa), >1.00 µg/kg (24 sa, maximum: 15 µg/
kg), sample year: 1999, country:
Denmark⁶²⁶, *healthy slaughtered pigs

incidence: 21/60*, conc. range: 2–68 µg/kg,
sample year: 1975, country: Denmark⁶²⁸,
*suspected kidneys

incidence: 15/104, conc. range: 1–5 µg/kg (12
sa), 5.1–10 µg/kg (3 sa, maximum: 9.3 µg/kg),
sample year: 1990, country: UK⁶³⁶, sa from
UK and from other countries

incidence: 112/303*, conc. range: 0.5 to
<1.0 µg/kg (51 sa), 1.0 to <2.0 µg/kg
(39 sa), 2.0 to <5.0 µg/kg (14 sa), 5.0 to
<10.0 µg/kg (6 sa), >10.0 µg/kg (2 sa,
maximum: 12.4 µg/kg), sample year:
unknown, country: UK⁶⁴⁶, *kidneys
unsuitable for human consumption

incidence: 6/13, conc. range: 0.8–1.6 µg/
kg, Ø conc.: 1.22 µg/kg, sample year: 1986,
country: Belgium⁶⁵⁸

incidence: 3/4*, conc. range: 0.5–1.8 µg/kg,
Ø conc.: 1.33 µg/kg, sample year: 1986,
country: Belgium⁶⁵⁸, *piglet kidneys

incidence: 28/95*, conc. range: 0.2–
0.99 µg/kg (6 sa), 1.00–4.99 µg/kg (19 sa),
5.00–9.99 µg/kg (3 sa), sample year:
1986/1987, country: Belgium⁶⁵⁸,
*slaughtered pigs

incidence: 32/129, conc. range: ≥2 to <5 µg/
kg (25 sa), ≥5 to <10 µg/kg (2 sa), ≥10 µg/
kg (5 sa, maximum: 104 µg/kg), sample
year: unknown, country: Sweden⁶⁵⁹

incidence: 10/193*, conc. range: <0.1–
5.0 µg/kg, sample year: 1981/1982,
country: Finland⁶⁶⁷, *normal and
suspected kidneys

incidence: 42/150*, conc. range: 12.4–
40.6 µg/kg, Ø conc.: 21.3 µg/kg, sample
year: unknown, country: Egypt⁷²¹,
*probably pigs

incidence: 35*/85**, conc. range: ≤3.1 µg/
kg, sample year: 1991/1992, country:
Poland⁷²⁴, *kidneys, **slaughtered pigs

incidence: 10/12, conc. range: 4–112.7 µg/
kg, Ø conc.: 46.05 µg/kg, sample year:
unknown, country: Belgium/Scotland⁷⁵¹,
sa from Denmark

incidence: 16/60, conc. range: 0.5–1 µg/kg
(12 sa), 1–3 µg/kg (4 sa, maximum: 3 µg/
kg), sample year: 1991, country: Spain/
Paraguay⁹⁶⁵, sa from Spain

incidence: 1/63*, conc.: 2.8 µg/kg, sample
year: 1989, country: Czechoslovakia¹⁰⁹³,
*kidneys from healthy pigs

incidence: 20/96*, conc. range: 1–5 µg/kg
(18 sa), 5–20 µg/kg (2 sa), sample year:
1989, country: Czechoslovakia¹⁰⁹³,
*kidneys with macroscopic lesions (unfit
for human consumption)

incidence: 187/250*, conc. range: 0.2–
0.5 µg/kg (151 sa), 0.51–1.0 µg/kg (29 sa),
1.01–1.5 µg/kg (4 sa), 1.51–2.0 µg/kg (2
sa), 2.01–2.5 µg/kg (1 sa), sample year:
2002, country: UK¹¹²³, *condemned
kidneys with lesions

incidence: 24/90*, conc. range: 2–88 µg/kg,
sample year: 1978, country: Sweden¹¹⁷⁹,
*nephropathic pig kidneys

incidence: 1/1, conc.: 1.9 µg/kg, sample year: unknown, country: Italy¹²⁴⁰

incidence: 30/90, conc. range: 0.01–1 µg/kg (15 sa), 1–5 µg/kg (10 sa), >5 µg/kg (5 sa, maximum: 52.5 µg/kg), sample year: 2006/2007, country: Serbia¹²⁷⁶

incidence: 42/54, conc. range: 0.26–3.05 µg/kg, sample year: unknown, country: Italy¹²⁸¹

incidence: 5 or 10/5*, conc. range: 23.9–27.5 µg/kg, sample year: unknown, country: Italy¹⁶⁵², *pigs

Kidney (poultry kidney) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 1/43, conc.: <0.1 µg/kg, sample year: unknown, country: Brazil²⁷⁵

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5(10?)/14(28?)*, conc. range: 4.3–29.2 µg/kg, sample year: unknown, country: Denmark⁵⁹¹, *suspected kidneys

Kidney (roe deer kidney) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 39/56, conc. range: 0.300–1.930 µg/kg, Ø conc.: 0.795 µg/kg, sample year: unknown, country: Czechoslovakia³¹

Kokonte see Cassava

Koshk may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 1/1*, conc.: 0.19 µg/kg, sample year: 1989, country: Italy⁶⁸, sa from Syria

Koshk is a secondary dairy product.

Kubeba may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/25, conc.: 150 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 1/25, conc.: 25 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

Kubeba is a mixture of black pepper, coriander, garlic, minced meat, rice and various vegetables used in Egyptian households.

Kucha may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 56/87, conc. range: 1–5 µg/kg (3 sa), 6–15 µg/kg (34 sa), 16–25 µg/kg (9 sa), 26–50 µg/kg (5 sa), 51–100 µg/kg (4 sa), >100 µg/kg (1 sa), sample year: unknown, country: France/England/Germany/USA/Gambia¹⁴⁹⁴, sa from Gambia

Kucha is a leaf sauce.

Lancashire cheese see Cheese (Lancashire cheese)

Legume may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 6/108*, conc. range: ≤3 µg/kg, sample year: unknown, country: USSR¹⁹¹, sa imported, *soybean, kidney bean and pea

incidence: 2/30, conc. range: 1.0–3.6 µg/kg, Ø conc.: 2.3 µg/kg, sample year: unknown, country: Colombia²⁹⁶

incidence: 19/94, conc. range: 1–2,672 µg/kg, Ø conc.: 825.7 µg/kg, sample year: unknown, country: USA⁸⁷³

Leguminous trees see Legume

Leicester cheese see Cheese
(Leicester cheese)

Lemon see Fruit (lemon)

Lentil may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/3*, conc.: 3.1 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa

incidence: 1/2*, conc.: 1.8 µg/kg, sample year: 1989, country: Italy⁶⁸, sa from Syria, *ground lentils

incidence: 1/4, conc.: 72.1 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴

incidence: 13/23, conc. range: 21–100 µg/kg (9 sa), 101–500 µg/kg (4 sa, maximum: 268 µg/kg), sample year: 1987, country: India³⁹⁸

AFLATOXINS (B₁, B₂, G₁, G₂)
incidence: 1/13, conc.: 14.3 µg/kg, sample year: 1993–1996, country: Sudan³¹⁴

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1/13, conc.: 0.11 µg/kg, sample year: unknown, country: Lebanon⁹¹¹

Fusarium Toxins

T-2 TOXIN
incidence: 1/2* **, conc.: 460 µg/kg, sample year: unknown, country: Turkey³³⁶, *lentil (red), **bought from market

Lentil flour see Flour (lentil flour)

Libritos see Bread

Licorice see Liquorice

Lima beans see Beans

Lingonberries see Berry
(lingonberries)

Linseed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 15/48, conc. range: <20 µg/kg (2 sa), 21–100 µg/kg (7 sa), 101–500 µg/kg (3 sa), 501–1,000 µg/kg (3 sa, maximum: 875 µg/kg), sample year: 1987, country: India³⁹⁸

incidence: 22/105, conc. range: 120–810 µg/kg, sample year: 1984/1985, country: India⁸⁷²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 12/34, conc. range: ≤1.79 µg/kg, sample year: unknown, country: Germany⁵⁹²

Liquorice may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 5/28*, conc. range: ≤2.4 µg/kg, Ø conc.: 1.57 µg/kg, sample year: 2006/2007, country: Italy¹⁶⁰⁴, *dried liquorice extract

incidence: 8/54*, conc. range: ≤7.7 µg/kg, Ø conc.: 2.06 µg/kg, sample year: 2006/2007, country: Italy¹⁶⁰⁴, *liquorice confectionery

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 18/19*, conc. range: 0.4–3 µg/kg, Ø conc.: 1.3 µg/kg, sample year: unknown, country: Germany⁵⁸², sa from drugstores, grocer's shops, health food shops, retail shops, *sweet liquorice

incidence: 9/19*, conc. range:
0.3–216.5 µg/kg, Ø conc.: 29.8 µg/kg,
sample year: unknown, country:
Germany⁵⁸², sa from drugstores,
health food shops, herb shop, pharmacies,
*liquorice roots

incidence: 1/2*, conc.: 385 µg/kg, sample
year: unknown, country: Belgium/
Russia⁸⁷¹, sa from Belgium, Netherlands,
and Russia, *liquorice powder

incidence: 15/15*, conc. range: 1.4–
252.8 µg/kg, Ø conc.: 63.6 µg/kg, sample
year: unknown, country: Spain⁹⁰³, *dry
liquorice root

incidence: 8/8*, conc. range: 3.3–14.7 µg/
kg, Ø conc.: 9.2 µg/kg, sample year:
unknown, country: Spain⁹⁰³, *fresh
liquorice root

incidence: 4/4*, conc. range:
0.5–8.2 µg/kg, Ø conc.: 3.8 µg/kg, sample
year: unknown, country: Spain⁹⁰³,
*liquorice sweets

incidence: 2/2*, conc. range:
14.6–17.3 µg/kg, Ø conc.:
16.0 µg/kg, sample year: unknown,
country: Spain⁹⁰³, *liquorice extract
(liquid)

incidence: 1/1*, conc.: 39.5 µg/kg, sample
year: unknown, country: Spain⁹⁰³,
*liquorice block (solid)

incidence: 12/16*, conc. range:
0.70–12.0 µg/kg, sample year: 2007/2008,
country: Spain¹¹⁴⁴, *liquorice
confectionery (candy type: hard)

incidence: 11/28*, conc. range:
0.50–1.8 µg/kg, sample year: 2007/2008,
country: Spain¹¹⁴⁴, *liquorice
confectionery (candy type: soft)

incidence: 28/28*, conc. range: ≤990.1 µg/
kg, Ø conc.: 89.6 µg/kg, sample year:
2006/2007, country: Italy¹⁶⁰⁴, *dried
liquorice extract

incidence: 33/54*, conc. range:
≤8.3 µg/kg, Ø conc.: 1.53 µg/kg, sample
year: 2006/2007, country: Italy¹⁶⁰⁴,
*liquorice confectionery

Liver (chicken liver) may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 122/225, conc. range: 0.003–
35.45 µg/kg, sample year: 1996/1997,
country: Thailand⁹⁴⁴

Liver (cow liver) may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1/50, conc.: 14.4 µg/kg, sample
year: unknown, country: Egypt⁷²¹

Liver (duck liver) may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 33/41, conc. range: 0.300–
2.484 µg/kg, Ø conc.: 0.840 µg/kg, sample
year: unknown, country: Czechoslovakia³¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 4/7, conc. range: ≤0.16 µg/
kg, sample year: 1993/1994, country:
Denmark⁶²⁴

Liver (goose liver) may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 4/12, conc. range: ≤0.06 µg/
kg, sample year: 1993/1994, country:
Denmark⁶²⁴

Liver (hare liver) may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 89/168*, conc. range: 0.300–
1.421 µg/kg, Ø conc.: 0.407 µg/kg, sample

year: unknown, country: Czechoslovakia³¹,
*wild hares

Liver (pheasant liver) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 56/94, conc. range:
0.300–0.985 µg/kg, Ø conc.: 0.329 µg/
kg, sample year: unknown, country:
Czechoslovakia³¹

Liver (pig liver) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/43, conc.: 27 µg/kg,
sample year: unknown, country: Brazil²⁷⁵

incidence: 7/160, conc. range: 0.04–
0.24 µg/kg, Ø conc.: 0.091 µg/kg,
sample year: 1988, country: USA¹¹⁵⁰

incidence: 17/47, conc. range: 0.2–0.87 µg/
kg, Ø conc.: 0.43 µg/kg, sample year:
1988/1989, country: China/USA¹³⁵², sa
from China

AFLATOXIN M₁

incidence: 4/160, conc. range: 0.20–
0.44 µg/kg, Ø conc.: 0.285 µg/kg, sample
year: 1988, country: USA¹¹⁵⁰

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 39/52, conc. range: ≤0.61 µg/
kg, Ø conc.: 0.16 µg/kg, sample year: 1998,
country: Romania⁵⁸⁶

incidence: 10/59, conc. range: ≤2.72 µg/kg,
sample year: unknown, country:
Germany⁵⁹⁸

incidence: 24/90, conc. range: 0.01–1 µg/
kg (8 sa), 1–5 µg/kg (14 sa), >5 µg/kg
(2 sa, maximum: 14.5 µg/kg), sample
year: 2006/2007, country: Serbia¹²⁷⁶

Liver (roe deer liver) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 38/56, conc. range: 0.300–2.170 µg/
kg, Ø conc.: 0.696 µg/kg, sample year:
unknown, country: Czechoslovakia³¹

Liver (turkey liver) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/17, conc. range: ≤0.28 µg/
kg, sample year: 1993/1994, country:
Denmark⁶²⁴

Lor cheese see Cheese (Lor cheese)

Luncheon see Meat (luncheon meat)

Macaroni see Noodles

Mahua seed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 12/15, conc. range: 86.43–
322.45 µg/kg, Ø conc.: 208.26 µg/kg, sample
year: 2005, country: India¹⁴²⁰

AFLATOXINS (TOTAL)

incidence: 12/15, conc. range: 115.35–
395.54 µg/kg, Ø conc.: 257.40 µg/kg, sample
year: 2005, country: India¹⁴²⁰

Maize may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 3/15*, Ø conc.: 370 µg/kg,
sample year: unknown, country: Egypt²⁹¹,
*yellow maize

ALTERNARIOL

incidence: 3/26, conc. range: 5.1–16.0 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

ALTERNARIOL METHYL ETHER

incidence: 1/26, conc.: 18 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

ALBERTOXIN I

incidence: 2/26, conc. range: 3.4–10.8 µg/kg, Ø conc.: 7.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

TENUAZONIC ACID

incidence: 4/15*, Ø conc.: 253.6 µg/kg, sample year: unknown, country: Egypt²⁹¹, *yellow maize

Aspergillus ToxinsAFLATOXIN B₁

incidence: 980/2,074, conc. range: >5.0–666.0 µg/kg, sample year: unknown, country: India¹⁶

incidence: 3?/38, conc. range: 48–62 µg/kg, sample year: unknown, country: Tunisia/USA²⁰

incidence: 3/3*, conc. range: 30–1,477 µg/kg, sample year: unknown, country: Canada³⁸, *ncac

incidence: 147?/630, conc. range: 1–10 µg/kg (22 sa), >10–20 µg/kg (19 sa), >20–50 µg/kg (53 sa), >50–100 µg/kg (42 sa), >100–500 µg/kg (8 sa), >500–2,000 µg/kg (3 sa), >2,000 µg/kg (1 sa), sample year: during the 1990s, country: Cuba⁴⁷

incidence: 36/41, conc. range: 5.03–465.31 µg/kg, Ø conc.: 84.2 µg/kg, sample year: unknown, country: Mexico⁴⁸

incidence: 1/3*, conc.: 2.6 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1*/3, conc.: 25 µg/kg, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 187/238*, conc. range: 1–19 µg/kg (48 sa), 20–40 µg/kg (44 sa), 50–99 µg/kg (36 sa), 100–249 µg/kg (37 sa), 250–499 µg/kg (10 sa), 500–1,000 µg/kg (9 sa), >1000 µg/kg (3 sa), sample year: 1977, country: USA⁶⁹, *ncac

incidence: 3/3*, conc. range: 7.5–47 µg/kg, Ø conc.: 23.83 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 2/170, conc. range: 1 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 3/3, conc. range: 8.8–37.5 µg/kg, Ø conc.: 21.8 µg/kg, sample year: unknown, country: USA⁹², sa from Nepal

incidence: 6/6, conc. range: tr–15,600 µg/kg, sample year: probably 1974, country: India⁹⁷

incidence: 4/181, conc. range: 0.1–0.4 µg/kg, Ø conc.: 0.2 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 37/214*, conc. range: <5 µg/kg (7 sa), 6–10 µg/kg (15 sa), 11–20 µg/kg (11 sa), 21–40 µg/kg (3 sa), 41–56 µg/kg (1 sa), sample year: 1975, country: USA¹¹¹, *ncac

incidence: 38/84* **, conc. range: ≤9 µg/kg (6 sa), 10–19 µg/kg (8 sa), 20–39 µg/kg (8 sa), 40–79 µg/kg (8 sa), 80–159 µg/kg (5 sa), 160–319 µg/kg (3 sa), sample year: 1973, country: USA¹¹², *ncac, **corn sa taken from collection sites (at picker–sheller)

incidence: 54/100* **, conc. range: ≤9 µg/kg (6 sa), 10–19 µg/kg (10 sa), 20–39 µg/kg (16 sa), 40–79 µg/kg (10 sa), 80–159 µg/kg (6 sa), 160–319 µg/kg (3 sa), 320–639 µg/kg (3 sa), sample year: 1973, country: USA¹¹², *ncac, **corn sa taken from collection sites (at truck)

incidence: 37/71* **, conc. range: ≤9 µg/kg (3 sa), 10–19 µg/kg (13 sa), 20–39 µg/kg (11 sa), 40–79 µg/kg (5 sa), 80–159 µg/kg (3 sa), 160–319 µg/kg (1 sa), sample year: 1973, country: USA¹¹², *ncac, **corn sa taken from collection sites (at elevator: a.m.)

incidence: 23/42* **, conc. range: ≤9 µg/kg (6 sa), 10–19 µg/kg (6 sa), 20–39 µg/kg

(3 sa), 40–79 µg/kg (4 sa), 80–159 µg/kg (4 sa), sample year: 1973, country: USA¹¹², *ncac, **corn sa taken from collection sites (at elevator: p.m.)

incidence: 37/40*, conc. range: 0.1–203.3 µg/kg, Ø conc.: 36.81 µg/kg, sample year: unknown, country: USA¹²⁴, *ncac

incidence: 3/30*, conc. range: 22–50 µg/kg, Ø conc.: 34 µg/kg, sample year: 1993, country: Argentina/Chile¹³², sa from Argentina, *ncac (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/16*, conc. range: 378.8–612.1 µg/kg, Ø conc.: 495.5 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *yellow corn (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 4/49*, conc. range: 1,429.1–10,450 µg/kg, Ø conc.: 5,647.4 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *white corn (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 3 sa co-contaminated with AFB₁ and AFB₂)

incidence: 10/10*, conc. range: 7**–422*** µg/kg, Ø conc.: 156.9 µg/kg, sample year: unknown, country: USA¹⁴⁷, *ncac, **measured on day 2, ***measured on day 4; for detailed information please see the article

incidence: 8/8* **, conc. range: 210–3,200 µg/kg, Ø conc.: 891.25 µg/kg, sample year: 1973, country: USA¹⁶⁵, *ncac, **ground maize (8 sa co-contaminated with AFB₁, AFB₂, and AFM₁)

incidence: 21/60*, conc. range: 4–308 µg/kg, Ø conc.: 58.57 µg/kg, sample year: 1969/1970, country: USA¹⁶⁶, *yellow and white corn (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 3 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂, 6 sa contaminated solely with AFB₁)

incidence: 6/15, conc. range: 1–50 µg/kg (3 sa), 51–150 µg/kg (2 sa), 680 µg/kg

(1 sa), sample year: 1970/1980, country: India¹⁷⁴

incidence: 2/161, conc. range: 0.1 µg/kg, sample year: unknown, country: Japan¹⁸⁴

incidence: 16/567, conc. range: 20–350 µg/kg, sample year: 1981, country: Taiwan¹⁸⁹, sa from USA

incidence: 158/162, conc. range: 500–1,200 µg/kg, sample year: 1981, country: Taiwan¹⁸⁹, sa from Thailand

incidence: 39/214, conc. range: ≤155 µg/kg, sample year: unknown, country: USSR¹⁹¹, sa imported

incidence: 6/100, conc. range: ≤600 µg/kg, sample year: unknown, country: USSR¹⁹¹

incidence: 3/3*, conc. range: 11.5–72.5 µg/kg, Ø conc.: 34.2 µg/kg, sample year: unknown, country: USA²⁰¹, *ncac

incidence: 1/1* **, conc.: 68.5 µg/kg, sample year: unknown, country: USA²⁰¹, sa from WHO, *ncac, **yellow maize

incidence: 82/214*, conc. range: 0.2–129 µg/kg, Ø conc.: 9.4 µg/kg, sample year: 1997/1998, country: Brazil²⁰⁵, *ncac

incidence: 8/15, conc. range: 2–338 µg/kg, Ø conc.: 102.3 µg/kg, sample year: unknown, country: Denmark²⁰⁶, sa from Ghana (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, FB₁, and FB₂, 2 sa co-contaminated with AFB₁, AFB₂, and FB₁, 1 sa co-contaminated with AFB₁, FB₁, and FB₂)

incidence: 23/30, conc. range: 0.4–128.1 µg/kg, Ø conc.: 23.7 µg/kg, sample year: unknown, country: USA/China²⁰⁷, sa from China

incidence: 4/21, conc. range: ≤0.13 µg/kg, Ø conc.: 0.8 µg/kg, sample year: unknown, country: Spain²¹⁰

incidence: 8/36*, conc. range: 12–878 µg/kg, Ø conc.: 166.5 µg/kg, sample year: 1988, country: Brazil²³⁷, *for food and feed

incidence: 14/109*, conc. range: 2.0–103.3 µg/kg, Ø conc.: 17.3 µg/kg, sample year: unknown, country: Colombia²⁹⁶,

*maize and maize products

incidence: 17/20, conc. range: 9–2,496 µg/kg, Ø conc.: 460 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China (3 sa co-contaminated with AFB₁, AFB₂,

AFG₁, FB₁, FB₂, and FB₃, 2 sa

co-contaminated with AFB₁, AFB₂, AFG₁,

FB₁, and FB₂, 3 sa co-contaminated with

AFB₁, AFB₂, FB₁, FB₂, and FB₃, 2 sa

co-contaminated with AFB₁, AFB₂, AFG₁,

and FB₁, 1 sa co-contaminated with AFB₁,

AFB₂, and AFG₁, 1 sa co-contaminated

with AFB₁, AFB₂, and FB₁, 1 sa

co-contaminated with AFB₁, FB₁, and FB₂,

1 sa co-contaminated with AFB₁ and

AFB₂, 1 sa co-contaminated with AFB₁

and AFG₁, 2 sa contaminated solely with

AFB₁)

incidence: 1/20, conc.: 44 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China

incidence: 4/36*, conc. range: 6–27 µg/kg,

Ø conc.: 12.8 µg/kg, sample year:

1997/1998, country: Brazil³²³, *ncac

(2 sa co-contaminated with AFB₁, AFB₂,

AFG₁, and AFG₂, 1 sa co-contaminated

with AFB₁ and AFB₂, 1 sa contaminated

solely with AFB₁)

incidence: 20/36*, conc. range: 25–289 µg/kg,

Ø conc.: 152 µg/kg, sample year:

1997/1998, country: Brazil³²³, *ncac (5 sa

co-contaminated with AFB₁, AFB₂, AFG₁,

and AFG₂, 4 sa co-contaminated with

AFB₁, AFB₂, and AFG₁, 11 sa

co-contaminated with AFB₁ and AFB₂)

incidence: 33/38*, conc. range: 18–1,600 µg/kg,

Ø conc.: 451.6 µg/kg, sample year:

1997/1998, country: Brazil³²³, *ncac

(32 sa co-contaminated with AFB₁ and

AFB₂, 1 sa contaminated solely with AFB₁)

incidence: 42/60, conc. range: 1–19 µg/kg

(2 sa), 20–80 µg/kg (3 sa), 81–120 µg/kg

(12 sa), 121–250 µg/kg (8 sa), 251–500 µg/kg

(8 sa), 501–1,000 µg/kg (7 sa),

>1,000 µg/kg (2 sa), sample year: 1985,

country: India³⁸⁸

incidence: 76/76, conc. range: 21–100 µg/kg

(12 sa), 101–500 µg/kg (21 sa), 501–

1,000 µg/kg (25 sa), >1,000 µg/kg (18 sa,

maximum: 2,163 µg/kg), sample year:

1987, country: India³⁹⁸

incidence: 11/16, conc. range: 4–428 µg/kg,

Ø conc.: 102 µg/kg, sample year: 1995,

country: Japan/Indonesia⁴²⁶, sa from

Indonesia (2 sa co-contaminated with

AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa

co-contaminated with AFB₁, AFB₂, FB₁,

FB₂, and FB₃, 2 sa co-contaminated with

AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 1 sa

co-contaminated with AFB₁, AFB₂, AFG₁,

and FB₁, 2 sa co-contaminated with AFB₁,

AFB₂, and FB₁, 1 sa co-contaminated with

AFB₁, FB₁, and FB₂, 1 sa co-contaminated

with AFB₁, FB₁, and ZEA)

incidence: 107/246, conc. range: tr–12 µg/kg,

sample year: 1995/1996, country:

China⁴⁷⁵

incidence: 3/4, conc. range: 131–340 µg/kg,

Ø conc.: 200.7 µg/kg, sample year: 1977–

1982, country: Japan⁵⁰², sa from Argentina

(no contamination), Burma, and Thailand

(3 sa co-contaminated with AFB₁, AFB₂,

and CIT)

incidence: 10/10, conc. range: <1.5–20 µg/kg,

sample year: 2002, country: France/

Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (10

sa co-contaminated with AFB₁, FB₁, OTA,

and ZEA)

incidence: ?/12*, conc. range: 50–930 µg/kg,

sample year: 1995, country: India⁷²⁰,

*disease affected household

incidence: ?/6*, conc. range:

20–110 µg/kg, sample year: 1995,

country: India⁷²⁰, *not disease affected

household

incidence: 51/139*, conc. range: 0.1–1 µg/kg

(36 sa), 1.1–2 µg/kg (5 sa), >2 µg/kg

(10 sa, maximum: 16.4 µg/kg), sample

year: 1998/1999, country: UK⁷⁴⁵, sa from different countries, *ncac

incidence: 1*/?, conc.: tr, sample year: 1979, country: Kenya⁷⁴⁶, *sun dried green maize

incidence: 1*/?, conc.: 40 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶, *crushed maize grains (Njenga)

incidence: 2*/?, conc.: tr–15 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶, *maize and beans

incidence: 19/103*, conc. range: 3–130 µg/kg, Ø conc.: 22 µg/kg, sample year: 2001, country: Nigeria⁷⁵⁹, *preharvest maize

incidence: 5/150, conc. range: 10–50 µg/kg, Ø conc.: 24 µg/kg, sample year: 1987, country: Argentina⁷⁶² (2 sa co-contaminated with AFB₁, AFG₁ and ZEA, 3 sa contaminated solely with AFB₁)

incidence: 55/96, conc. range: 2–89 µg/kg, sample year: 1993, country: Brazil⁷⁶⁹

incidence: 17/106, conc. range: 3–58 µg/kg, sample year: 1994, country: Brazil⁷⁶⁹

incidence: 25/90, conc. range: 3–11 µg/kg, sample year: 1994, country: Brazil⁷⁶⁹

incidence: 6/37, conc. range: 5–50 µg/kg, sample year: 1993, country: Venezuela⁷⁷⁷

incidence: 27/167*, conc. range: 2.00–73.90 µg/kg, sample year: 1987, country: Turkey⁷⁸³, sa from Turkey and imported, *ncac

incidence: 45/102, conc. range: 20–7,400 µg/kg, sample year: unknown, country: India⁷⁸⁸

incidence: 13/30, conc. range: 30–750 µg/kg, sample year: 1981, country: India⁷⁸⁹

incidence: 32/126*, conc. range: ≤50.0 µg/kg, Ø conc.: 11.7 µg/kg, sample year: 1983, country: Argentina⁷⁹⁰, *ncac (3 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 10/138*, conc. range: ≤30.0 µg/kg, Ø conc.: 22.5 µg/kg, sample year: 1984, country: Argentina⁷⁹⁰, *ncac (6 sa

co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 19/35*, conc. range: ≤79.4 µg/kg, Ø conc.: 28.0 µg/kg, sample year: 1985, country: Argentina⁷⁹⁰, *ncac (4 sa co-contaminated with AFB₁, AFB₂ and ZEA, 6 sa co-contaminated with AFB₁ and AFB₂, 6 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 77/162*, conc. range: ≤560.0 µg/kg, Ø conc.: 32.1 µg/kg, sample year: 1989, country: Argentina⁷⁹⁰, *ncac (3 sa co-contaminated with AFB₁, AFB₂ and ZEA, 19 sa co-contaminated with AFB₁ and AFB₂, 8 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 123/491*, conc. range: ≤160.0 µg/kg, Ø conc.: 8.3 µg/kg, sample year: 1990, country: Argentina⁷⁹⁰, *ncac (7 sa co-contaminated with AFB₁, AFB₂ and ZEA, 13 sa co-contaminated with AFB₁ and AFB₂, 6 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 90/288*, conc. range: ≤200.0 µg/kg, Ø conc.: 9.3 µg/kg, sample year: 1991, country: Argentina⁷⁹⁰, *ncac (12 sa co-contaminated with AFB₁, AFB₂ and ZEA, 10 sa co-contaminated with AFB₁ and AFB₂, 28 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 94/349*, conc. range: ≤30.0 µg/kg, Ø conc.: 4.3 µg/kg, sample year: 1992, country: Argentina⁷⁹⁰, *ncac (7 sa co-contaminated with AFB₁, AFB₂ and ZEA, 3 sa co-contaminated with AFB₁ and AFB₂, 36 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 44/328*, conc. range: 5–900 µg/kg, Ø conc.: 64.6 µg/kg, sample year: 1985/1986, country: Brazil⁸⁰¹, *ncac

incidence: 6/283*, conc. range: 12–25 µg/kg, sample year: 1967, country: USA⁸¹¹, *ncac

incidence: 8/293*, conc. range: <6–25 µg/kg, sample year: 1968/1969, country: USA⁸¹², *ncac

incidence: 101/246*, conc. range: 1–19 µg/kg (6 sa), 20–80 µg/kg (10 sa), 81–120 µg/kg (23 sa), 121–250 µg/kg (19 sa), 251–500 µg/kg (20 sa), 501–1,000 µg/kg (17 sa), >1,000 µg/kg (6 sa), sample year: 1984–1986, country: India⁸¹⁵, *sa from field crops

incidence: 30/70*, conc. range: 20–80 µg/kg (5 sa), 81–250 µg/kg (9 sa), 251–500 µg/kg (6 sa), 501–1,000 µg/kg (7 sa), >1,000 µg/kg (3 sa), sample year: 1984–1986, country: India⁸¹⁵, *sa from storage

incidence: 39/45*, conc. range: 1–2,230 µg/kg, Ø conc.: 248 µg/kg, sample year: 1990, country: USA⁸²⁶, *ncac (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 1 sa co-contaminated with AFB₁, AFB₂, and CPA, 10 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and CPA, 4 sa contaminated solely with AFB₁)

incidence: 44/50* **, conc. range: 1–430 µg/kg, Ø conc.: 49 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Philippines, *for seeds, food and feed, **maize and ground maize

incidence: 17/27* **, conc. range: 1–606 µg/kg, Ø conc.: 63 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Thailand, *for seeds, food and feed, **maize and ground maize

incidence: 10/12* **, conc. range: 1–3,300 µg/kg, Ø conc.: 352 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Indonesia, *for seeds, food and feed, **maize and ground maize

incidence: 1/292*, conc.: 0.24 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries, *included sweet corn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃)

incidence: 17/17*, conc. range: 27–641 µg/kg, Ø conc.: 221 µg/kg, sample year: 1998, country: USA⁸⁷⁶, *conventional hybrids

incidence: 4/4*, conc. range: 54–430 µg/kg, Ø conc.: 193 µg/kg, sample year: 1998, country: USA⁸⁷⁶, *Bt hybrids

incidence: 46/74, conc. range: 0.14–970.32 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 48/135, conc. range: ≤1,850 µg/kg, Ø conc.: 81.78 µg/kg, sample year: unknown, country: India¹⁰²³

incidence: 1/17, conc.: 0.42 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹

incidence: 4/20*, conc. range: 30–140 µg/kg, Ø conc.: 85 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *included sugared, roasted, buttered, and fried corn (1 sa co-contaminated with AFB₁ and AFG₁, 3 sa contaminated solely with AFB₁)

incidence: 35/197, conc. range: 11.26–26.8 µg/kg, sample year: 1994–1997, country: India¹¹⁶²

incidence: 14/120*, conc. range: 5–90 µg/kg, sample year: 2006, country: Tanzania/Belgium¹²⁰⁵, sa from Tanzania, *home-stored maize

incidence: 24/28, conc. range: 4 to <20 µg/kg (11 sa), ≥20 µg/kg (13 sa, maximum: 450 µg/kg), sample year: 1994–1995, country: Japan/Thailand¹²³³, sa from Thailand

incidence: 7/17*, conc. range: 0.9–16.0 µg/kg, Ø conc.: 7.66 µg/kg, sample year: unknown, country: Japan¹²⁵¹, *ncac

incidence: 59/90* **, conc. range: 0.05–5.20 µg/kg, sample year: 1986, country: Italy¹²⁷⁴, *ncac, **corn hybrids

incidence: 2/50*, conc. range: 0.97–48.61 µg/kg, Ø conc.: 24.79 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴, *dry maize

incidence: 1/52*, conc.: 16.8 µg/kg, sample year: 1999, country: Argentina¹³¹³, *ncac

incidence: 6/6, conc. range: 1–44 µg/kg, Ø conc.: 16.5 µg/kg, sample year: 1997/1998, country: Japan¹³⁴⁸, sa from Philippines (1 sa co-contaminated with AFB₁ and CPA, 5 sa contaminated solely with AFB₁)

incidence: 27/39, conc. range: 0.13–5.13 µg/kg, Ø conc.: 1.14 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

incidence: 21/200*, conc. range: ≤1,393.0 µg/kg, sample year: 2005, country: Brazil¹³⁶³, *ncac

incidence: 3/11*, conc. range: 1.67–3.92 µg/kg, Ø conc.: 2.42 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and OTA, 1 sa contaminated solely with AFB₁)

incidence: 30/36*, conc. range: 8.56–30.96 µg/kg, Ø conc.: 18.1 µg/kg, sample year: 2007, country: Pakistan/UK¹⁴⁰⁹, sa from Pakistan, *ncac (30 sa co-contaminated with AFB₁ and OTA)

incidence: 108/108, conc. range: 0.4–136.8 µg/kg, sample year: unknown, country: China¹⁴³⁷ (100 sa co-contaminated with AFB₁ and FB₁, 8 sa contaminated solely with AFB₁)

incidence: 16/54*, conc. range: >5–46.4 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 10/13, conc. range: 2.1–31.1 µg/kg, Ø conc.: 12.74 µg/kg, sample year: 2004/2005, country: France¹⁴⁵⁶, sa from Vietnam (3 sa co-contaminated with AFB₁ and FB₁, 7 sa contaminated solely with AFB₁)

incidence: 13/26, conc. range: 3.4–636 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 6/13, conc. range: 16.3–363 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 35/35, conc. range: 1.75–151 µg/kg, sample year: unknown, country: USA¹⁵⁰⁹

incidence: 60/110*, conc. range: 6–1,600 µg/kg, Ø conc.: 309 µg/kg, sample year: 1997/1998, country: Brazil¹⁵¹⁸, *ncac (60 sa co-contaminated with FB₁ and FB₂; no further information available)

incidence: 2/2, conc. range: 1.14–71.67 µg/kg, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Congo

incidence: 4/4*, conc. range: 0.4–10.81 µg/kg, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Congo, *white maize

incidence: 3/3*, conc. range: 0.04–10.81 µg/kg, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Congo, *yellow maize

incidence: 4/4*, conc. range: 1.0–120.09 µg/kg, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Congo, *mixed maize

AFLATOXIN B₂

incidence: 3/3*, conc. range: 3.2–70 µg/kg, sample year: unknown, country: Canada³⁸, *ncac

incidence: 1/3*, conc.: 3.7 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 3/3*, conc. range: 0.9–42 µg/kg, Ø conc.: 14.73 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 3/3, conc. range: 2.3–5.0 µg/kg, Ø conc.: 4.1 µg/kg, sample year: unknown, country: USA⁹², sa from Nepal

incidence: 2/30*, conc. range: tr–3 µg/kg, sample year: 1993, country: Argentina/Chile¹³², sa from Argentina, *ncac (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/16*, conc.: 547 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *yellow corn (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 4/49*, conc. range: 577–5,481 µg/kg, Ø conc.: 3,660 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *white corn (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 3 sa co-contaminated with AFB₁ and AFB₂)

incidence: 8/8* **, conc. range: 15–290 µg/kg, Ø conc.: 100.25 µg/kg, sample year: 1973, country: USA¹⁶⁵, *ncac, **ground maize (8 sa co-contaminated with AFB₁, AFB₂, and AFM₁)

incidence: 15/60, conc. range: tr–40 µg/kg, sample year: 1969/1970, country: USA¹⁶⁶, *yellow and white corn (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 3 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4/567, conc. range: 52–129 µg/kg, sample year: 1981, country: Taiwan¹⁸⁹, sa from USA

incidence: 135/162, conc. range: 49–260 µg/kg, sample year: 1981, country: Taiwan¹⁸⁹, sa from Thailand

incidence: 43/214*, conc. range: 0.1–32 µg/kg, Ø conc.: 2.1 µg/kg, sample year: 1997/1998, country: Brazil²⁰⁵, *ncac

incidence: 7/15, conc. range: 1–54 µg/kg, Ø conc.: 12.3 µg/kg, sample year: unknown, country: Denmark²⁰⁶, sa from Ghana (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, FB₁, and FB₂, 2 sa co-contaminated with AFB₁, AFB₂, and FB₁)

incidence: 3/36*, conc. range: 7–180 µg/kg, Ø conc.: 78.3 µg/kg, sample year: 1988, country: Brazil²³⁷, *for food and feed

incidence: 13/20, conc. range: 11–320 µg/kg, Ø conc.: 82 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 3 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and FB₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFB₂, and FB₁, 1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/20, conc.: 11 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China

incidence: 3/36*, conc. range: 1.9–6 µg/kg, Ø conc.: 3.3 µg/kg, sample year: 1997/1998, country: Brazil³²³, *ncac (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 20/36*, conc. range: 7–55 µg/kg, Ø conc.: 22.1 µg/kg, sample year: 1997/1998, country: Brazil³²³, *ncac (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 4 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 11 sa co-contaminated with AFB₁ and AFB₂)

incidence: 32/38*, conc. range: 6–192 µg/kg, Ø conc.: 38.9 µg/kg, sample year: 1997/1998, country: Brazil³²³, *ncac (32 sa co-contaminated with AFB₁ and AFB₂)

incidence: 26/60, conc. range: 81–120 µg/kg (8 sa), 121–250 µg/kg (4 sa), 251–500 µg/kg (6 sa), 501–1,000 µg/kg (6 sa), >1,000 µg/kg (2 sa), sample year: 1985, country: India³⁸⁸

incidence: 9/16, conc. range: 1–160 µg/kg, Ø conc.: 20 µg/kg, sample year: 1995, country: Japan/Indonesia⁴²⁶, sa from Indonesia (2 sa co-contaminated with

AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 2 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and FB₁, 2 sa co-contaminated with AFB₁, AFB₂, and FB₁)

incidence: 3/4, conc. range: 17–47 µg/kg, Ø conc.: 27.33 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², sa from Argentina (no contamination), Burma, and Thailand (3 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 1*/?, conc.: tr, sample year: 1979, country: Kenya⁷⁴⁶, *sun dried green maize

incidence: 1*/?, conc.: 10 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶, *crushed maize grains (Njenga)

incidence: 1/?*, conc.: tr–5 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶, *maize and beans

incidence: 8/103*, conc. range: 4–26 µg/kg, Ø conc.: 10 µg/kg, sample year: 2001, country: Nigeria⁷⁵⁹, *preharvest maize

incidence: 24/96, conc. range: 1–17 µg/kg, sample year: 1993, country: Brazil⁷⁶⁹

incidence: 7/106, conc. range: 1–2 µg/kg, sample year: 1994, country: Brazil⁷⁶⁹

incidence: 2/90, conc. range: 2 µg/kg, sample year: 1994, country: Brazil⁷⁶⁹

incidence: 8/167*, conc. range: 1.50–6.00 µg/kg, sample year: 1987, country: Turkey⁷⁸³, sa from Turkey and imported, *ncac

incidence: 6/30, conc. range: 15–275 µg/kg, sample year: 1981, country: India⁷⁸⁹

incidence: 10/35*, conc. range: ≤32.3 µg/kg, Ø conc.: 14.9 µg/kg, sample year: 1985, country: Argentina⁷⁹⁰, *ncac (4 sa co-contaminated with AFB₁, AFB₂ and ZEA, 6 sa co-contaminated with AFB₁ and AFB₂)

incidence: 24/162*, conc. range: ≤96.0 µg/kg, Ø conc.: 9.1 µg/kg, sample year: 1989, country: Argentina⁷⁹⁰, *ncac (3 sa

co-contaminated with AFB₁, AFB₂ and ZEA, 19 sa co-contaminated with AFB₁ and AFB₂; no further information available)

incidence: 26/491*, conc. range: ≤130.0 µg/kg, Ø conc.: 5.9 µg/kg, sample year: 1990, country: Argentina⁷⁹⁰, *ncac (7 sa co-contaminated with AFB₁, AFB₂ and ZEA, 13 sa co-contaminated with AFB₁ and AFB₂; no further information available)

incidence: 22/288*, conc. range: ≤20.0 µg/kg, Ø conc.: 3.2 µg/kg, sample year: 1991, country: Argentina⁷⁹⁰, *ncac (12 sa co-contaminated with AFB₁, AFB₂ and ZEA, 10 sa co-contaminated with AFB₁ and AFB₂)

incidence: 10/349*, conc. range: ≤3.2 µg/kg, Ø conc.: 1.67 µg/kg, sample year: 1992, country: Argentina⁷⁹⁰, *ncac (7 sa co-contaminated with AFB₁, AFB₂ and ZEA, 3 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4/293*, conc. range: <3–25 µg/kg, sample year: 1968/1969, country: USA⁸¹², *ncac

incidence: 49/246*, conc. range: 81–120 µg/kg (3 sa), 121–250 µg/kg (15 sa), 251–500 µg/kg (13 sa), 501–1,000 µg/kg (13 sa), >1,000 µg/kg (5 sa), sample year: 1984–1986, country: India⁸¹⁵, *sa from field crops

incidence: 18/70*, conc. range: 20–80 µg/kg (1 sa), 81–250 µg/kg (3 sa), 251–500 µg/kg (5 sa), 501–1,000 µg/kg (6 sa), >1,000 µg/kg (3 sa), sample year: 1984–1986, country: India⁸¹⁵, *sa from storage

incidence: 34/45*, conc. range: tr–51 µg/kg, sample year: 1990, country: USA⁸²⁶, *ncac (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 1 sa co-contaminated with AFB₁, AFB₂ and AFG₁, 19 sa co-contaminated with AFB₁, AFB₂, and CPA, 10 sa co-contaminated with AFB₁ and AFB₂)

incidence: 34/50* **, conc. range: 1–78 µg/kg, Ø conc.: 14 µg/kg, sample year:

1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Philippines, *for seeds, food and feed, **maize and ground maize

incidence: 11/27* **, conc. range: 1–73 µg/kg, Ø conc.: 14 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Thailand, *for seeds, food and feed, **maize and ground maize

incidence: 8/12* **, conc. range: 1–680 µg/kg, Ø conc.: 90 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Indonesia, *for seeds, food and feed, **maize and ground maize

incidence: 1/292*, conc.: 0.03 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries, *included sweet corn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃)

incidence: 11/17*, conc. range: 2–29 µg/kg, Ø conc.: 7.81 µg/kg, sample year: 1998, country: USA⁸⁷⁶, *conventional hybrids

incidence: 3/4*, conc. range: 3–5 µg/kg, Ø conc.: 3.66 µg/kg, sample year: 1998, country: USA⁸⁷⁶, *Bt hybrids

incidence: 41/74, conc. range: 0.02–128.04 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 10/120*, conc. range: 1–20 µg/kg, sample year: 2006, country: Tanzania/Belgium¹²⁰⁵, sa from Tanzania, *home-stored maize

incidence: 7/200*, conc. range: 5.6–55.7 µg/kg, sample year: 2005, country: Brazil¹³⁶³, *ncac

incidence: 1/11*, conc.: 1.39 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4/26, conc. range: 7.4–46.3 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 4/13, conc. range: 6.9–31.4 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: ?/35, conc. range: ≤14.4 µg/kg, sample year: unknown, country: USA¹⁵⁰⁹

incidence: 57/110*, conc. range: 2–192 µg/kg, Ø conc.: 32 µg/kg, sample year: 1997/1998, country: Brazil¹⁵¹⁸, *ncac (57 sa co-contaminated with FB₁ and FB₂; no further information available)

AFLATOXIN G₁

incidence: 3?/38, conc. range: 8–22 µg/kg, sample year: unknown, country: Tunisia/USA²⁰

incidence: 1/3*, conc.: 74 µg/kg, sample year: unknown, country: Canada³⁸, *ncac

incidence: 20/41, conc. range: 1.59–57.1 µg/kg, Ø conc.: 9.7 µg/kg, sample year: unknown, country: Mexico⁴⁸

incidence: 32/238*, conc. range: 1–19 µg/kg (14 sa), 20–40 µg/kg (4 sa), 50–99 µg/kg (5 sa), 100–249 µg/kg (5 sa), 250–499 µg/kg (2 sa), 500–1,000 µg/kg (1 sa), 1,173 µg/kg (1 sa), sample year: 1977, country: USA⁶⁹, *ncac

incidence: 2/3*, conc. range: 0.3–105 µg/kg, Ø conc.: 52.65 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 1/3, conc.: 57.6 µg/kg, sample year: unknown, country: USA⁹², sa from Nepal

incidence: 2/16*, conc. range: 434.1–530 µg/kg, Ø conc.: 482.1 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *yellow corn (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/49*, conc.: 9,020 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *white corn (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 5/60, conc. range: tr–10 µg/kg, sample year: 1969/1970, country: USA¹⁶⁶, *yellow and white corn (2 sa co-contaminated with AFB₁, AFB₂, AFG₁,

and AFG₂, 3 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 17/162, conc. range: 50–250 µg/kg, sample year: 1981, country: Taiwan¹⁸⁹, sa from Thailand

incidence: 11/214*, conc. range: 0.2–12 µg/kg, Ø conc.: 1.9 µg/kg, sample year: 1997/1998, country: Brazil²⁰⁵, *ncac

incidence: 2/15, conc. range: 48–434 µg/kg, Ø conc.: 265 µg/kg, sample year: unknown, country: Denmark²⁰⁶, sa from Ghana (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, FB₁, FB₂, and FB₃)

incidence: 2/36*, conc. range: 28 µg/kg, Ø conc.: 28 µg/kg, sample year: 1988, country: Brazil²³⁷, *for food and feed

incidence: 9/20, conc. range: 12–21 µg/kg, Ø conc.: 15 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and FB₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 2/36*, conc. range: 39–254 µg/kg, Ø conc.: 146.5 µg/kg, sample year: 1997/1998, country: Brazil³²³, *ncac (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 9/36*, conc. range: 25–112 µg/kg, Ø conc.: 53.8 µg/kg, sample year: 1997/1998, country: Brazil³²³, *ncac (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 4 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 7/60, conc. range: 81–120 µg/kg (1 sa), 121–250 µg/kg (1 sa), 251–500 µg/kg (2 sa), 501–1,000 µg/kg (2 sa), >1,000 µg/kg (1 sa), sample year: 1985, country: India³⁸⁸

incidence: 5/16, conc. range: tr–8 µg/kg, sample year: 1995, country: Japan/Indonesia⁴²⁶, sa from Indonesia (2 sa

co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and FB₁)

incidence: 2*/?, conc. range: tr, sample year: 1979, country: Kenya⁷⁴⁶, *sun dried green maize

incidence: 1*/?, conc.: 5 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶, *crushed maize grains (Njenga)

incidence: 3/103*, conc. range: 5–11 µg/kg, Ø conc.: 8 µg/kg, sample year: 2001, country: Nigeria⁷⁵⁹, *preharvest maize

incidence: 2/150, conc. range: 10–25 µg/kg, Ø conc.: 17.5 µg/kg, sample year: 1987, country: Argentina⁷⁶² (2 sa co-contaminated with AFB₁, AFG₁, and ZEA)

incidence: 10/96, conc. range: 2–18 µg/kg, sample year: 1993, country: Brazil⁷⁶⁹

incidence: 3/106, conc. range: 3–85 µg/kg, sample year: 1994, country: Brazil⁷⁶⁹

incidence: 1/162*, conc.: 8 µg/kg, sample year: 1989, country: Argentina⁷⁹⁰, *ncac

incidence: 3/167*, conc. range: 2.00–5.40 µg/kg, sample year: 1987, country: Turkey⁷⁸³, sa from Turkey and imported, *ncac

incidence: 1/283*, conc.: 12 µg/kg, sample year: 1967, country: USA⁸¹¹, *ncac

incidence: 1/293*, conc.: 25 µg/kg, sample year: 1968/1969, country: USA⁸¹², *ncac

incidence: 15/246*, conc. range: 121–250 µg/kg (3 sa), 251–500 µg/kg (4 sa), 501–1,000 µg/kg (5 sa), >1,000 µg/kg (3 sa), sample year: 1984–1986, country: India⁸¹⁵, *sa from field crops

incidence: 6/70*, conc. range: 81–250 µg/kg (1 sa), 251–500 µg/kg (2 sa), 501–1,000 µg/kg (2 sa), >1,000 µg/kg (1 sa), sample year: 1984–1986, country: India⁸¹⁵, *sa from storage

incidence: 5/45*, conc. range: 1–36 µg/kg, Ø conc.: 13.4 µg/kg, sample year: 1990, country: USA⁸²⁶, *ncac (1 sa

co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 1 sa co-contaminated with AFB₁, AFB₂ and AFG₁)

incidence: 2/50* **, conc. range: 40–78 µg/kg, Ø conc.: 59 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Philippines, *for seeds, food and feed, **maize and ground maize

incidence: 3/27* **, conc. range: 2–7 µg/kg, Ø conc.: 5 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Thailand, *for seeds, food and feed, **maize and ground maize

incidence: 1/292*, conc.: 0.01 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries, *included sweet corn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃)

incidence: 9/74, conc. range: 0.36–4.76 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 1/14, conc.: 25.0 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 1/20*, conc.: 40 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *included sugared, roasted, buttered, and fried corn (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 11/120*, conc. range: 4–89 µg/kg, sample year: 2006, country: Tanzania/Belgium¹²⁰⁵, sa from Tanzania, *home-stored maize

incidence: 1/200*, conc.: 39.2 µg/kg, sample year: 2005, country: Brazil¹³⁶³, *ncac

incidence: 1/11*, conc.: 3.33 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed

incidence: 7/26, conc. range: 12.3–56.8 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 6/13, conc. range: 19.7–256 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 7/37, conc. range: 0.8–11.1 µg/kg, sample year: unknown, country: USA¹⁵⁰⁹

incidence: 12/110*, conc. range: 25–112 µg/kg, Ø conc.: 74 µg/kg, sample year: 1997/1998, country: Brazil¹⁵¹⁸, *ncac (12 sa co-contaminated with FB₁ and FB₂; no further information available)

AFLATOXIN G₂

incidence: 1/3*, conc.: 40 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 1/3, conc.: 9.7 µg/kg, sample year: unknown, country: USA⁹², sa from Nepal

incidence: 2/60, conc. range: 1 to <2 µg/kg, sample year: 1969/1970, country: USA¹⁶⁶, *yellow and white corn (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 2/162, conc. range: 49–110 µg/kg, sample year: 1981, country: Taiwan¹⁸⁹, sa from Thailand

incidence: 2/214*, conc. range: 0.4–4.0 µg/kg, Ø conc.: 2.2 µg/kg, sample year: 1997/1998, country: Brazil²⁰⁵, *ncac

incidence: 2/15, conc. range: 4–17 µg/kg, Ø conc.: 10.5 µg/kg, sample year: unknown, country: Denmark²⁰⁶, sa from Ghana (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, FB₁, FB₂, and FB₃)

incidence: 2/36*, conc. range: 6–11 µg/kg, Ø conc.: 8.5 µg/kg, sample year: 1988, country: Brazil²³⁷, *for food and feed

incidence: 2/36*, conc. range: 26–58 µg/kg, Ø conc.: 42 µg/kg, sample year: 1997/1998, country: Brazil³²³, *ncac (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 5/36*, conc. range: 7–26 µg/kg,
∅ conc.: 14.8 µg/kg, sample year:

1997/1998, country: Brazil³²³, *ncac

(5 sa co-contaminated with AFB₁, AFB₂,
AFG₁, and AFG₂)

incidence: 2*/?, conc. range: tr, sample
year: 1979, country: Kenya⁷⁴⁶, *sun dried
green maize

incidence: 1*/?, conc.: 5 µg/kg, sample
year: 1979, country: Kenya⁷⁴⁶, *crushed
maize grains (Njenga)

incidence: 1/103*, conc.: 7 µg/kg, sample
year: 2001, country: Nigeria⁷⁵⁹,
*preharvest maize

incidence: 6/96, conc. range: 1–4 µg/kg,
sample year: 1993, country: Brazil⁷⁶⁹

incidence: 1/106, conc.: 6 µg/kg, sample
year: 1994, country: Brazil⁷⁶⁹

incidence: 2/167*, conc. range: 2.00–
3.00 µg/kg, sample year: 1987, country:
Turkey⁷⁸³, sa from Turkey and imported,
*ncac

incidence: 1/293*, conc.: 6 µg/kg, sample
year: 1968/1969, country: USA⁸¹², *ncac

incidence: 2/45*, conc. range: tr–5 µg/kg,
sample year: 1990, country: USA⁸²⁶, *ncac
(1 sa co-contaminated with AFB₁, AFB₂,
AFG₁, AFG₂, and CPA, 1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
and AFG₂)

incidence: 2/50* **, conc. range: 13–33 µg/
kg, ∅ conc.: 18 µg/kg, sample year:
1992–1994, country: Japan/Philippines/
Indonesia⁸³², sa from Philippines, *for
seeds, food and feed, **maize and ground
maize

incidence: 1/14, conc.: 7.5 µg/kg, sample
year: 2010, country: Spain⁹⁷⁴, sa from
Mediterranean area

incidence: 12/120*, conc. range: 1–17 µg/
kg, sample year: 2006, country: Tanzania/
Belgium¹²⁰⁵, sa from Tanzania, *home-
stored maize

incidence: 1/200*, conc.: 29.7 µg/kg,
sample year: 2005, country: Brazil¹³⁶³,
*ncac

incidence: 1/11*, conc.: 3.4 µg/kg, sample
year: 2005, country: Romania¹³⁷⁶, *for food
and feed

incidence: 1/26, conc.: 13.2 µg/kg, sample
year: 2010, country: Austria/Nigeria¹⁴⁹³, sa
from Burkina Faso

incidence: 4/13, conc. range: 9.6–40.2 µg/
kg, sample year: 2010, country: Austria/
Nigeria¹⁴⁹³, sa from Mozambique

incidence: 2/35, conc. range: 0.9–1.2 µg/
kg, ∅ conc.: 1.05 µg/kg, sample year:
unknown, country: USA¹⁵⁰⁹

incidence: 8/110*, conc. range: 7–26 µg/kg,
∅ conc.: 22 µg/kg, sample year: 1997/1998,
country: Brazil¹⁵¹⁸, *ncac (8 sa
co-contaminated with FB₁ and FB₂; no
further information available)

AFLATOXIN M₁

incidence: 8/8* **, conc. range: 1–35 µg/
kg, ∅ conc.: 6.75 µg/kg, sample year: 1973,
country: USA¹⁶⁵, *ncac, **ground maize (8
sa co-contaminated with AFB₁, AFB₂, and
AFM₁)

incidence: 1/26, conc.: 8.1 µg/kg, sample
year: 2010, country: Austria/Nigeria¹⁴⁹³, sa
from Burkina Faso

incidence: 3/13, conc. range: 5.6–6.0 µg/
kg, sample year: 2010, country: Austria/
Nigeria¹⁴⁹³, sa from Mozambique

AFLATOXIN

incidence: 9/22*, conc. range: ≤107 µg/
kg, sample year: 1988–1991, country:
Nigeria¹⁰, *ncac

incidence: 113/250*, ∅ conc. range:
46–8,665 µg/kg, sample year: 1977,
country: USA⁴², *ncac

incidence: 90/7,937*, conc. range:
≤396 µg/kg, sample year: 1972, country:
USA⁷³, *ncac

incidence: 235/17,245*, conc. range: nc, sample
year: 1973/1974, country: USA⁷³, *ncac

incidence: 4,471/12,776*, conc. range:
21–70 µg/kg (2,136 sa), 71–200 µg/kg
(2,136 sa), 201–300 µg/kg (205 sa), 301–
400 µg/kg (25 sa), >400 µg/kg (2 sa),

sample year: 1989–1992, country: Mexico⁹⁰, *ncac

incidence: 45/45* **, conc. range: 0–19 µg/kg (23 sa), 20–99 µg/kg (15 sa), 100–399 µg/kg (5 sa), 400–799 µg/kg (2 sa), sample year: 1978, country: USA¹²⁸, *ncac, **early survey: July 25

incidence: 45/45* **, conc. range: 0–19 µg/kg (33 sa), 20–99 µg/kg (7 sa), 100–399 µg/kg (2 sa), 400–799 µg/kg (3 sa), sample year: 1978, country: USA¹²⁸, *ncac, **late survey: September 5

incidence: 6/923* **, conc. range: 13–151 µg/kg, Ø conc.: 45 µg/kg, sample year: 1977, country: USA¹⁷⁹, *ncac, **dried shelled corn

incidence: 33/76*, conc. range: 11–30 µg/kg (14 sa), 31–100 µg/kg (12 sa), >100 µg/kg (7 sa, maximum: 806 µg/kg), sample year: 2002, country: India¹⁹⁵, *ncac

incidence: 70/80* **, conc. range: ≤32 µg/kg, sample year: 2003, country: Uganda⁴⁸³, *sa from mid-altitude (moist) agroecological zone, **sa stored for 2–6 months

incidence: 62/80* **, conc. range: ≤22 µg/kg, sample year: 2003, country: Uganda⁴⁸³, *sa from mid-altitude (dry) agroecological zone, **sa stored for 2–6 months

incidence: 55/80* **, conc. range: ≤15 µg/kg, sample year: 2003, country: Uganda⁴⁸³, *sa from highland, **sa stored for 2–6 months

incidence: 40/50* **, conc. range: ≤50 µg/kg, sample year: 2003, country: Uganda⁴⁸³, *sa from mid-altitude (moist) agroecological zone, **sa stored for more than 6 months

incidence: 45/60* **, conc. range: ≤45 µg/kg, sample year: 2003, country: Uganda⁴⁸³, *sa from mid-altitude (dry) agroecological zone, **sa stored for more than 6 months

incidence: 24/40* **, conc. range: ≤18 µg/kg, sample year: 2003, country: Uganda⁴⁸³, *sa from highland, **sa stored for more than 6 months

incidence: 2/23?, conc. range: 6.7–131.8 µg/kg, Ø conc.: 69.3 µg/kg, sample year: 1992/1993, country: UK/Honduras⁷⁹¹, sa from Honduras

incidence: 50?/119* **, conc. range: tr–117 µg/kg, sample year: 1975/1976, country: USA⁸¹⁹, *ncac, **dry-milled maize

incidence: 3/14*, conc. range: 8.0–70.2 µg/kg, Ø conc.: 38.57 µg/kg, sample year: 2001, country: USA⁸⁷⁶, *conventional hybrids

incidence: ?/23, conc. range: 1.1–480 µg/kg, sample year: 2005, country: Nigeria/USA⁹²⁶, sa from Nigeria

incidence: 590/702*, Ø conc.: 45.9 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *maize and maize products, **of pos sa?

incidence: 86/519*, conc. range: 24–117.5 µg/kg, sample year: 2000/2001, country: Benin/Togo/Ghana¹¹⁶¹, sa from Benin, *maize grains from market stores

incidence: 256/600*, conc. range: 0.4–490.6 µg/kg, sample year: 2000/2001, country: Benin/Togo/Ghana¹¹⁶¹, sa from Ghana, *maize grains from market stores

incidence: 27/100*, conc. range: 0.7–108.8 µg/kg, sample year: 2000/2001, country: Benin/Togo/Ghana¹¹⁶¹, sa from Togo, *maize grains from market stores

incidence: 68/239*, conc. range: 4–487 µg/kg, Ø conc.: 49.6 µg/kg, sample year: unknown, country: Pakistan¹²⁰¹, *ncac

incidence: 89/91*, conc. range: ≤372 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from high incidence area of liver cancer

incidence: 41/46*, conc. range: ≤277 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from low incidence area of liver cancer

incidence: 104/104, conc. range: ≤ 20 $\mu\text{g}/\text{kg}$ (67 sa), 21–100 $\mu\text{g}/\text{kg}$ (16 sa), 101–1,000 $\mu\text{g}/\text{kg}$ (10 sa), $>1,000$ –13,000 $\mu\text{g}/\text{kg}$ (11 sa), sample year: 2005, country: Kenya/USA¹²⁹³, sa from Kenya

incidence: 168/2,100, \emptyset conc.: 44.7 $\mu\text{g}/\text{kg}$, sample year: unknown, country: South Africa/France/Kenya/Netherlands¹³¹⁹, sa from Swaziland

incidence: 3/30*, conc. range: ≤ 5 –15 $\mu\text{g}/\text{kg}$, sample year: 1985, country: Venezuela¹³⁶⁵, *yellow corn

incidence: 5/30*, conc. range: ≤ 5 to ≥ 20 $\mu\text{g}/\text{kg}$, sample year: 1985, country: Venezuela¹³⁶⁵, *cracked yellow corn

incidence: 355/516*, conc. range: 1–20 $\mu\text{g}/\text{kg}$ (288 sa), 21–100 $\mu\text{g}/\text{kg}$ (54 sa), >100 $\mu\text{g}/\text{kg}$ (13 sa, maximum: 1,030 $\mu\text{g}/\text{kg}$), sample year: 1983, country: USA¹³⁶⁷, *ncac

incidence: 25/25* **, conc. range: 176.0–2,033.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 926.2 $\mu\text{g}/\text{kg}$, sample year: 2000, country: USA¹⁵⁷², *ncac, **Texas: Burleson County

incidence: 25/25* **, conc. range: 282.5–3,550.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,742.1 $\mu\text{g}/\text{kg}$, sample year: 2000, country: USA¹⁵⁷², *ncac, **Texas: Weslaco

AFLATOXINS (B₁, B₂)

incidence: 7/68*, conc. range: <5 $\mu\text{g}/\text{kg}$ (2 sa), 6–20 $\mu\text{g}/\text{kg}$ (4 sa), 28 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1975/1976–?, country: Guatemala³³, *white corn

incidence: 8/8*, conc. range: 7–360 $\mu\text{g}/\text{kg}$, \emptyset conc.: 147 $\mu\text{g}/\text{kg}$, sample year: 1981, country: USA⁷¹³, *ncac (5 sa co-contaminated with AFB₁/AFB₂ and CTV, 3 sa contaminated solely with AFB₁/AFB₂)

incidence: 16/75*, conc. range: ≤ 20.8 $\mu\text{g}/\text{kg}$, sample year: 1985/1986, country: Venezuela⁸⁵¹, *white corn

AFLATOXINS (B₁, B₂, G₁)

incidence: 7/50*, conc. range: <5 $\mu\text{g}/\text{kg}$ (1 sa), 6–20 $\mu\text{g}/\text{kg}$ (3 sa), 21–50 $\mu\text{g}/\text{kg}$ (1 sa), >50 $\mu\text{g}/\text{kg}$ (2 sa, maximum: 240 $\mu\text{g}/\text{kg}$), sample year: 1975/1976–?, country: Guatemala³³, *yellow corn

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 22*/49, conc. range: 1–100 $\mu\text{g}/\text{kg}$ (13 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (9 sa), sample year: 1966/1967, country: Uganda/USA⁵, sa from Uganda, *19 sa contained AFB₁, 11 sa contained AFB₂, 14 sa contained AFG₁, 4 sa contained AFG₂

incidence: 7/42*, conc. range: 6–20 $\mu\text{g}/\text{kg}$ (4 sa), 21–100 $\mu\text{g}/\text{kg}$ (2 sa), 130 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1976, country: Guatemala³⁴, *analyzed within 20 days after harvest in rainy season

incidence: 10/42*, conc. range: <5 $\mu\text{g}/\text{kg}$ (3 sa), 21–100 $\mu\text{g}/\text{kg}$ (1 sa), >100 $\mu\text{g}/\text{kg}$ (6 sa, maximum: 1,650 $\mu\text{g}/\text{kg}$), sample year: 1976, country: Guatemala³⁴, *same sa like above but measured after 2 months of storage in rainy season

incidence: 3/18*, conc. range: 21–100 $\mu\text{g}/\text{kg}$ (3 sa, maximum: 30 $\mu\text{g}/\text{kg}$), sample year: 1976, country: Guatemala³⁴, *sa stored for 6 months during dry season and treated with CS₂

incidence: 1/36, conc. range: <25.0 $\mu\text{g}/\text{kg}$, sample year: 1970–1975, country: Canada⁵⁹

incidence: 30/30, conc. range: 4–400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 88 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁰⁸

incidence: 30/30*, conc. range: 4–389 $\mu\text{g}/\text{kg}$, \emptyset conc.: 84.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁰⁸, *fraction ≥ 4.5 mm

incidence: 30/30*, conc. range: 6–1,172 $\mu\text{g}/\text{kg}$, \emptyset conc.: 204 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁰⁸, *fraction <4.5 mm

incidence: 22/62, conc. range: $\leq 2,730$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 400 $\mu\text{g}/\text{kg}$, sample year: 1967–1969, country: Thailand¹⁶³

incidence: 9*/27, conc. range: tr–10 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK²²⁰, *included maize and maize products (3 sa co-contaminated with AFS and FBS, 6 sa contaminated solely with AFS)

incidence: 20/139*, conc. range: 0.4–1 $\mu\text{g}/\text{kg}$ (14 sa), 1.1–4 $\mu\text{g}/\text{kg}$ (9 sa), >4 to

≤29.1 µg/kg (7 sa), sample year: 1998/1999, country: UK⁷⁴⁵, sa from different countries, *ncac

incidence: 1/71* **, conc.: >20 µg/kg, sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac, **maize and by-products

incidence: 1/1*, conc.: pr, sample year: unknown, country: UK⁸⁰⁷, *ncac

incidence: 57/315* **, conc. range: tr->100 µg/kg, sample year: 1973/1974, country: USA⁸²⁰, *ncac, **type I sa

incidence: 17/57* ** ***, conc. range: >20–845 µg/kg, sample year: 1973/1974, country: USA⁸²⁰, *ncac, **type II sa, ***damaged maize

incidence: 71/73, Ø conc.: 0.99 µg/kg*, sample year: 2003, country: China⁹¹³, *of all sa?

incidence: 60/61*, Ø conc.: 0.84 µg/kg**, sample year: 2003, country: China⁹¹³, *stored for 1 year, **of all sa?

incidence: 9/10*, Ø conc.: 1.17 µg/kg**, sample year: 2003, country: China⁹¹³, *stored for 2 years, **of all sa?

incidence: 4/12* **, conc. range: 2.7–4.5 µg/kg, Ø conc.: 3.4 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 22/47, conc. range: 1.75–10.0 µg/kg (20 sa), >10 µg/kg (2 sa, maximum: 120.33 µg/kg), sample year: 2005, country: Turkey¹⁵⁵⁵

incidence: 17/51*, conc. range: 0.1–1 µg/kg (6 sa), 1.1–6.0 µg/kg (3 sa), 6.1–10 µg/kg (2 sa), >10 µg/kg (6 sa, maximum: 316.9 µg/kg), sample year: 2000, country: Iran/South Africa¹⁶¹⁹, sa from Iran, *for food and feed

AFLATOXINS (TOTAL)

incidence: 2/18* **, conc. range: 0.1–20 µg/kg (1 sa), 23.4 µg/kg (1 sa), sample year: 1997, country: Qatar², sa imported, *ncac, **included maize and maize products

incidence: 2/12* **, conc. range: 0.1–20 µg/kg (2 sa, maximum: 7.8 µg/kg), sample year: 1998, country: Qatar², sa imported, *ncac, **included maize and maize products

incidence: 5/47*, conc. range: >6.8–10 µg/kg (4 sa), –15 µg/kg (1 sa), sample year: 1992–1994, country: Switzerland¹³¹, sa from Ecuador, *soft endosperm corn

incidence: 16/42*, conc. range: >6.8–20 µg/kg (6 sa), –50 µg/kg (1 sa), –100 µg/kg (2 sa), –500 µg/kg (4 sa), –2,000 µg/kg (3 sa), sample year: 1992–1994, country: Switzerland¹³¹, sa from Ecuador, *hard endosperm corn

incidence: 2/2, conc. range: 19.0–138.0 µg/kg, Ø conc.: 78.5 µg/kg, sample year: unknown, country: Singapore/USA¹⁶⁸, sa probably from USA

incidence: 394/1,283, conc. range: <10 µg/kg (136 sa), 10–19 µg/kg (93 sa), 20–29 µg/kg (45 sa), 30–100 µg/kg (91 sa), >100 µg/kg (29 sa, maximum: 306 µg/kg), sample year: 1971, country: USA¹⁷³

incidence: 7/14, conc. range: 1.7–11.3 µg/kg, Ø conc.: 6.4 µg/kg, sample year: 2003, country: Argentina⁹⁵⁴

incidence: 7/17, conc. range: 0.2–22.4 µg/kg, Ø conc.: 4.94 µg/kg, sample year: 2004, country: Argentina⁹⁵⁴

incidence: 35/92, conc. range: ≤4.81 µg/kg, Ø conc.: 2.6 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa from Argentina

incidence: 11/11, conc. range: 0.50–145.20 µg/kg, Ø conc.: 45.92 µg/kg, sample year: unknown, country: USA¹⁵¹³

incidence: 2/71*, conc. range: ≤1.0 µg/kg, Ø conc.: 0.9 µg/kg, sample year: 2008/2009, country: Spain¹⁵⁵⁶, *sweet corn

AFLATOXINS

incidence: 42/42*, conc. range: 1–20 µg/kg (2 sa), 21–50 µg/kg (19 sa), 51–100 µg/kg (15 sa), 101–200 µg/kg (5 sa), 201–300 µg/kg (1 sa), Ø conc.: 66 µg/kg, sample year: 1983, country: Mexico³⁵, *sieved maize

incidence: 49/49*, conc. range: 51–100 µg/kg (6 sa), 101–200 µg/kg (12 sa), 201–300 µg/kg (11 sa), 301–400 µg/kg (12 sa), 401–500 µg/kg (5 sa), 501–600 µg/kg (2 sa), 610–2,000 µg/kg (1 sa), Ø conc.: 295 µg/kg, sample year: 1983, country: Mexico³⁵, *nonsieved maize

incidence: 9*/10, conc. range: 2–35 µg/kg, Ø conc.: 9.7 µg/kg, sample year: unknown, country: UK/France/USA⁷², sa from Gambia

incidence: 77/99* **, conc. range: 1–19 µg/kg (40 sa), 20–49 µg/kg (15 sa), 50–99 µg/kg (11 sa), 100–499 µg/kg (10 sa), ≥500 µg/kg (1 sa), sample year: 1983, country: USA¹⁵⁸, *ncac, **10.9 kg sa

incidence: 215/253* **, conc. range: 1–19 µg/kg (70 sa), 20–49 µg/kg (72 sa), 50–99 µg/kg (37 sa), 100–499 µg/kg (31 sa), ≥500 µg/kg (5 sa), sample year: 1983, country: USA¹⁵⁸, *ncac, **1.8 kg sa

incidence: 24/148*, conc. range: ≤364 µg/kg, Ø conc.: 57.8 µg/kg, sample year: 1986, country: USA¹⁹⁷, *shelled corn

incidence: 17/150*, conc. range: 38.0–460.0 µg/kg, sample year: 1994/1995, country: Brazil/Japan⁷⁸¹, sa from Brazil, *ncac

incidence: 7/22*, conc. range: 12–160 µg AFB₁/kg, 25–90 µg AFB₂/kg, 10–95 µg AFG₁/kg, 65 µg AFG₂/kg, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 72/84*, conc. range: 4–2,506 µg/kg, sample year: 1998, country: USA⁸⁷⁵, *corn sa from 21 corn hybrids

incidence: 4/15*, conc. range: 22.4–255.3 µg/kg, Ø conc.: 99.7 µg/kg, sample year: 1999, country: USA⁸⁷⁶, *conventional hybrids

incidence: 5/14*, conc. range: 5.7–25.1 µg/kg, Ø conc.: 10.14 µg/kg, sample year: 1999, country: USA⁸⁷⁶, *Bt hybrids

incidence: 36/36*, conc. range: ≤820 µg/kg, Ø conc.: 26.3 µg/kg, sample year: 2007, country: Italy¹⁰²², *for food and feed

incidence: 8/90*, conc. range: 5–54 µg/kg, Ø conc.: 24.1 µg/kg, sample year: 2003, country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: reception (8 sa co-contaminated with AFS and FBS)

incidence: 10/60*, conc. range: 10–56 µg/kg, Ø conc.: 23.4 µg/kg, sample year: 2003, country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: pre-drying (10 sa co-contaminated with AFS and FBS)

incidence: 1/90*, conc.: 40.0 µg/kg, sample year: 2004, country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: reception

incidence: 5/60*, conc. range: 12–52 µg/kg, Ø conc.: 35.2 µg/kg, sample year: 2004, country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: pre-drying

incidence: ?/114*, conc. range: 0.01–10 µg/kg, sample year: 2006, country: South Africa/Zambia¹²⁸⁸, sa from Zambia, *for food and feed

STERIGMATOCYSTIN

incidence: 10/167*, conc. range: ~20 µg/kg, sample year: 1987, country: Turkey⁷⁸³, sa from Turkey and imported, *ncac

incidence: 2/26, conc. range: 2.2–2.5 µg/kg, Ø conc.: 2.35 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 1/13, conc.: 2.7 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

Aspergillus and *Penicillium* Toxins

CITREOVIRIDIN

incidence: 5/8*, conc. range: 19–2,790 µg/kg, Ø conc.: 1,230 µg/kg, sample year: 1981, country: USA⁷¹³, *ncac (5 sa co-contaminated with AFB₁/AFB₂ and CTV)

CITRININ

incidence: 3/4, conc. range: 174–1,390 µg/kg, Ø conc.: 592 µg/kg, sample year: 1977–1982, country: Japan⁵⁰², sa from

Argentina (no contamination), Burma, and Thailand (3 sa co-contaminated with AFB₁, AFB₂, and CIT)

incidence: 3/36*, conc. range: 71.2–211.3 µg/kg, Ø conc.: 62.9 µg/kg, sample year: unknown, country: Egypt⁷²¹, *yellow maize

incidence: 1/1*, conc.: 450 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac

incidence: 1/197, conc.: 12.0 µg/kg, sample year: 1994–1997, country: India¹¹⁶²

incidence: 3/26, conc. range: 531–5,074 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 6/13, conc. range: 276–5,074 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

CYCLOPIAZONIC ACID

incidence: 23/45*, conc. range: tr–2,771 µg/kg, sample year: 1990, country: USA⁸²⁶, *ncac (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 19 sa co-contaminated with AFB₁, AFB₂, and CPA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 1 sa co-contaminated with AFB₁ and CPA)

incidence: 1/6, conc.: 76 µg/kg, sample year: 1997/1998, country: Japan¹³⁴⁸, sa from Philippines (1 sa co-contaminated with AFB₁ and CPA)

incidence: 1/13, conc.: 606 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

3-NITROPROPIONIC ACID

incidence: 7/26, conc. range: 161–951 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 6/13, conc. range: 205–3,553 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

OCHRATOXIN A

incidence: 2/2, conc. range: 5.2–26.9 µg/kg, Ø conc.: 16.05 µg/kg, sample year: unknown, country: Singapore/USA⁸², sa probably from USA

incidence: 1/21, conc.: 0.10 µg/kg, sample year: unknown, country: Spain²¹⁰

incidence: 19/49*, conc. range: 0.9–2.54 µg/kg, Ø conc.: 1.47 µg/kg, sample year: 2002, country: Croatia²⁴⁰, *ncac

incidence: 3/12*, conc. range: 60–740 µg/kg, sample year: unknown, country: India²⁷², *Zea mays var. *Diara composita*

incidence: 4/11*, conc. range: 90–870 µg/kg, sample year: unknown, country: India²⁷², *Zea mays var. *Suwan composita*

incidence: 2/36*, conc. range: 128–206 µg/kg, Ø conc.: 167 µg/kg, sample year: 1997/1998, country: Brazil²²³, *ncac

incidence: 10/105*, conc. range: 0.36–224 µg/kg, Ø conc.: 37.87 µg/kg, sample year: 1996, country: Croatia/Italy⁴⁶⁰, sa from Croatia, *for food and feed

incidence: 36/104*, conc. range: 0.26–614 µg/kg, Ø conc.: 57.13 µg/kg, sample year: 1997, country: Croatia/Italy⁴⁶⁰, sa from Croatia, *for food and feed

incidence: 10/10, conc. range: 0.09–0.86 µg/kg, Ø conc.: 0.36 µg/kg, sample year: 2002, country: France/Côte d'Ivoire³⁵⁷, sa from Côte d'Ivoire (10 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA)

incidence: 2/8, conc. range: 18–90 µg/kg, Ø conc.: 54 µg/kg, sample year: 1971–1975, country: Denmark/Yugoslavia⁶²⁹, sa from Yugoslavia, *EN area

incidence: 1/38*, conc.: 14 µg/kg, year: 1971–1975, country: Denmark/Yugoslavia⁶²⁹, sa from Yugoslavia, *Non-EN area

incidence: 5/39, conc. range: 1–5 µg/kg (4 sa), 11.2 µg/kg (1 sa), sample year: 1990, country: UK⁶³⁶, sa from UK and different countries?

incidence: 16/16, conc. range: 27–64 µg/kg, Ø conc.: 44 µg/kg, sample year: 1998, country: France/Côte d'Ivoire⁶⁴², sa from Côte d'Ivoire

incidence: 15/15, conc. range: 3–1,738 µg/kg, Ø conc.: 266 µg/kg, sample year: 2001, country: France/Côte d'Ivoire⁶⁴², sa from Côte d'Ivoire

incidence: ?/10, conc. range: 9.8–88 µg/kg, Ø conc.: 37 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁶⁴², sa from Côte d'Ivoire

incidence: 2/22*, conc. range: 0.9–24.3 µg/kg, sample year: 1981/1982, country: Bulgaria/France⁶⁵³, sa from Bulgaria, *control BEN area

incidence: 6/22*, conc. range: 11.2–47.4 µg/kg, sample year: 1981/1982, country: Bulgaria/France⁶⁵³, sa from Bulgaria, *BEN area

incidence: 17/51*, conc. range: 0.02–40.00 µg/kg, sample year: 1999/2000, country: Croatia⁶⁵⁵, *ncac

incidence: 3/21, conc. range: 30–50 µg/kg, Ø conc.: 36.7 µg/kg, sample year: unknown, country: India⁶⁵⁶

incidence: 19/31, conc. range: ≤3.347 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰

incidence: 2/27*, conc. range: 12.8–14.7 µg/kg, Ø conc.: 13.7 µg/kg, sample year: unknown, country: Egypt⁷²¹, *white maize

incidence: 19/36*, conc. range: 16.2–80.0 µg/kg, Ø conc.: 25.1 µg/kg, sample year: unknown, country: Egypt⁷²¹, *yellow maize

incidence: 14/139*, conc. range: 0.1–1 µg/kg (12 sa), 1.1–4 µg/kg (2 sa, maximum: 1.5 µg/kg), sample year: 1998/1999, country: UK⁷⁴⁵, sa from different countries, *ncac

incidence: 2/167*, conc. range: ~10 µg/kg, sample year: 1987, country: Turkey⁷⁸³, sa from Turkey and imported, *ncac

incidence: 1/22*, conc.: pr, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 1/283*, conc.: 110–150 µg/kg, sample year: 1967, country: USA⁸¹¹, *ncac

incidence: 3/293*, conc. range: 83–166 µg/kg, Ø conc.: 123 µg/kg, sample year: 1968/1969, country: USA⁸¹², *ncac

incidence: 1/12*, conc.: 32 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *dried white corn

incidence: 5/292*, conc. range: 0.2–1.7 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries, *included sweet corn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with FB₁, FB₂, FB₃, OTA, and ZEA, 4 sa co-contaminated with FB₁ and OTA)

incidence: 8/20, conc. range: ≤7.22 µg/kg, Ø conc.: 1.08 µg/kg, sample year: unknown, country: Morocco⁸⁶⁶ (1 sa co-contaminated with FB₁, OTA, and ZEA, 7 sa co-contaminated with FB₁ and OTA)

incidence: 6/17, conc. range: 0.28–22.3 µg/kg, sample year: 2005/2006, country: Tunisia⁹³⁹

incidence: 4/11, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 0.8 µg/kg), sample year: 1991, country: EU¹⁰³⁴, sa from UK

incidence: 11/19, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 0.7 µg/kg), sample year: 1991, country: EU¹⁰³⁴, sa from UK

incidence: 1/3, conc.: 0.3 µg/kg, sample year: 1994, country: EU¹⁰³⁴, sa from UK

incidence: 5/15, conc. range: 0.73–2.54 µg/kg, Ø conc.: 1.40 µg/kg, sample year: 2002, country: Croatia¹⁰⁶⁸

incidence: 3/197, conc. range: 10.0–20.0 µg/kg, sample year: 1994–1997, country: India¹¹⁶²

incidence: 1/69, conc.: 0.1 µg/kg, sample year: unknown, country: China¹¹⁷⁷

incidence: 1/6, conc.: 1.90 µg/kg, sample year: 2005, country: Portugal/Spain¹¹⁸¹, sa from Spain

incidence: 1/5, conc.: 0.80 µg/kg, sample year: 2005, country: Portugal/Spain¹¹⁸¹, sa from Portugal

incidence: 2/2* **, conc. range: 1.66–1.93 µg/kg, Ø conc.: 1.795 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac, **1 moist grain and 1 dry grain sa (1 sa co-contaminated with DON, NIV, and OTA, 1 sa contaminated solely with OTA)

incidence: 14/90* **, conc. range: 1–2 µg/kg, sample year: 1986, country: Italy¹²⁷⁴, *ncac, **corn hybrids

incidence: 24/80*, conc. range: LOD–0.9 µg/kg (15 sa), 1.0–4.9 µg/kg (8 sa), 5.2 µg/kg (1 sa), sample year: unknown, country: Italy¹²⁹⁰, *ncac

incidence: 87/978, conc. range: 2–30 µg/kg (78 sa), 31–90 µg/kg (6 sa), 91–140 µg/kg (3 sa), sample year: 1972–1978, country: Yugoslavia/Sweden/USA¹³³⁹, sa from Yugoslavia

incidence: 1/11*, conc.: 4.39 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁ and OTA)

incidence: 3/12* **, conc. range: 2.5–31.7 µg/kg, Ø conc.: 12.7 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 36/36*, conc. range: 1.13–7.32 µg/kg, Ø conc.: 3.96 µg/kg, sample year: 2007, country: Pakistan/UK¹⁴⁰⁹, sa from Pakistan, *ncac (30 sa co-contaminated with AFB₁ and OTA, 6 sa contaminated solely with OTA)

incidence: 1/26, conc.: 18.6 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 2/2, conc. range: 10.4–15.8 µg/kg, Ø conc.: 13.1 µg/kg, sample year: unknown, country: Taiwan/Russia¹⁵⁰², sa from Taiwan

incidence: 1/10, conc.: 0.07 µg/kg, sample year: unknown, country: China¹⁵⁵⁴

incidence: 27/47, conc. range: 0.625–3.00 µg/kg (25 sa), >3.00 µg/kg (2 sa, maximum: 8.572 µg/kg), sample year: 2005, country: Turkey¹⁵⁵⁵

OCHRATOXIN B

incidence: 2/12*, conc. range: 30–420 µg/kg, Ø conc.: 225 µg/kg, sample year: unknown, country: India²⁷², **Zea mays* var. *Diara composite*

incidence: 1/11*, conc.: 60 µg/kg, sample year: unknown, country: India²⁷², **Zea mays* var. *Suwan composite*

incidence: 2/293*, conc. range: tr, sample year: 1968/1969, country: USA⁸¹², *ncac

incidence: 3/69, conc. range: 0.4–0.5 µg/kg, Ø conc.: 0.47 µg/kg, sample year: unknown, country: China¹¹⁷⁷

PENICILLIC ACID

incidence: 7/20* **, conc. range: 5–231 µg/kg, Ø conc. 59 µg/kg, sample year: 1973, country: USA⁷⁵², *ncac, **mold damaged corn

Fusarium Toxins

BEAUVERICIN

incidence: 6/31*, conc. range: ≤59,000 µg/kg, Ø conc.: 17,000 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 4/6* **, conc. range: 5,000–10,000 µg/kg, Ø conc.: 7,500 µg/kg, sample year: 1992/1993, country: Italy⁴³³, *ncac, **moldy maize (4 sa co-contaminated with BEA and FB₁)

incidence: 18/105*, conc. range: 13–1,864 µg/kg, Ø conc.: 393 µg/kg, sample year: 1996, country: Croatia/Italy⁴⁶⁰, sa from Croatia, *for food and feed

incidence: 1/104*, conc.: 696 µg/kg, sample year: 1997, country: Croatia/Italy⁴⁶⁰, sa from Croatia, *for food and feed

incidence: 12/12*, conc. range: 1,800–36,890 µg/kg, Ø conc.: 15,221 µg/kg, sample year: 1993, country: Poland⁴⁶³, *ncac (6 sa co-contaminated with BEA and MON, 6 sa contaminated solely with BEA)

incidence: 4/42* **, conc. range: 4,000–40,000 µg/kg, Ø conc.: 21,000 µg/kg, sample year: 1992/1993, country: Italy⁴⁹⁴, *ncac, **selected preharvest-infected

maize ears (1 sa co-contaminated with BEA, FB₁, and MON, 3 sa co-contaminated with BEA and FB₁)

incidence: 8/9* **, conc. range: 10,000–60,000 µg/kg, Ø conc.: 18,571 µg/kg, sample year: 1990, country: Italy/Poland⁴⁹⁵, *ncac, **preharvest infected corn ears, sa from Poland (7 sa co-contaminated with BEA and MON, 1 sa contaminated solely with BEA)

incidence: 5/5* **, conc. range: 5,000–30,000 µg/kg, Ø conc.: 15,000 µg/kg, sample year: 1991, country: Italy/Poland⁴⁹⁵, *ncac, **preharvest infected corn ears, sa from Poland

incidence: 6/22* **, conc. range: tr–520,000 µg/kg, sample year: 1994, country: Italy⁵¹³, *ncac, **visibly moldy (1 sa co-contaminated with BEA and FB₁, 5 sa co-contaminated with BEA, FB₁, and FP)

incidence: 2/14, conc. range: 2.1–73.9 µg/kg, Ø conc.: 38 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 6/28, conc. range: ≤9,310 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 1/11*, conc.: 3,000 µg/kg, sample year: 1996, country: Slovakia/Italy¹⁴³⁵, sa from Slovakia, *ncac (1 sa co-contaminated with BEA, FB₁, FB₂, and FP)

incidence: 14/26, conc. range: 0.1–5.9 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 11/13, conc. range: 0.1–35.6 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

DEOXYNIVALENOL

incidence: 15/18*, conc. range: tr–2,800 µg/kg, Ø conc.: 400 µg/kg, sample year: 1996, country: France²⁰⁴, *ncac

incidence: 14/21*, conc. range: tr–558 µg/kg, Ø conc.: 70 µg/kg, sample year: 1997, country: France²⁰⁴, *ncac

incidence: 5/9* **, conc. range: 100–500 µg/kg, Ø conc.: 166.7 µg/kg, sample year: 1996, country: Cameroon/South Africa/Benin²⁴¹, sa from Cameroon, *ncac, **sa from humid forest (5 sa co-contaminated with DON, FB₁ and ZEA)

incidence: 9/9* **, conc. range: 100–1,300 µg/kg, Ø conc.: 433.3 µg/kg, sample year: 1996, country: Cameroon/South Africa/Benin²⁴¹, sa from Cameroon, *ncac, **sa from western highlands (7 sa co-contaminated with DON, FB₁, and ZEA, 2 sa co-contaminated with DON and ZEA)

incidence: 22/34*, conc. range: 13–1,160 µg/kg, Ø conc.: 400 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 2/20*, conc. range: 15–87 µg/kg, Ø conc.: 51 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 42/196*, conc. range: <2–600 µg/kg, Ø conc.: 239.4 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 2/2*, conc. range: 256–21,200 µg/kg, Ø conc.: 10,728 µg/kg, sample year: 1989, country: China³⁴², *powdered corn (1 sa co-contaminated with DON, 15-AcDON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, FB₂, FB₃, NIV and ZEA)

incidence: 15/15*, conc. range: 727–5,223 µg/kg, Ø conc.: 2,766.7 µg/kg, sample year: unknown, country: USA³⁷², *ncac

incidence: 7/8, conc. range: 1,200–3,000 µg/kg, Ø conc.: 1,800 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 2/16, conc. range: 21–32 µg/kg, Ø conc.: 27 µg/kg, sample year: 1995, country: Japan/Indonesia⁴²⁶, sa from Indonesia (1 sa co-contaminated with DON, FB₁, NIV, and ZEA, 1 sa co-contaminated with DON, FB₁, and NIV)

incidence: 1/7, conc.: 1,900 µg/kg, sample year: 1985–1993, country: Poland/Austria/Sweden⁴³⁸, sa from Poland, *ncac, **heavily damaged kernels

incidence: 14/17*, conc. range: 20–100 µg/kg (6 sa), ≤1,450 µg/kg (8 sa), sample year: unknown, country: UK⁴⁵⁰, sa imported, *included maize, popcorn, and flaked maize

incidence: 8/11*, conc. range: 10–20 µg/kg (1 sa), 20–100 µg/kg (5 sa), >100 µg/kg (2 sa, maximum: 140 µg/kg), sample year: unknown, country: UK⁴⁵⁰, *brewers maize

incidence: 12/12* **, conc. range: 1,422–12,670 µg/kg, Ø conc.: 6,783 µg/kg, sample year: 1985, country: China⁴⁵⁶, *corn and corn meal, **high EC area (12 sa co-contaminated with DON and NIV?)

incidence: 12/12* **, conc. range: 360–11,641 µg/kg, Ø conc.: 3,969 µg/kg, sample year: 1986, country: China⁴⁵⁶, *corn and corn meal, **high EC area (12 sa co-contaminated with DON and NIV?)

incidence: 5/13*, conc. range: 30–300 µg/kg, Ø conc.: 164 µg/kg, sample year: 1984, country: New Zealand⁴⁵⁷, *ncac (3 sa co-contaminated with DAS, DON, T-2, and ZEA, 2 sa co-contaminated with DON, T-2, and ZEA)

incidence: 2/2, conc. range: 20–30 µg/kg, Ø conc.: 25 µg/kg, sample year: unknown, country: New Zealand⁴⁵⁷ (1 sa co-contaminated with DAS, DON, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 30/46, conc. range: 29–2,752 µg/kg, Ø conc.: 310 µg/kg, sample year: 1990/1991, country: Korea/Japan⁴⁶², sa from Korea

incidence: 7/16*, conc. range: 900–2,700 µg/kg, Ø conc.: 1,400 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *raw corn

incidence: 25/93*, conc. range: 4–871 µg/kg, Ø conc.: 247.6 µg/kg, sample year: unknown, country: Italy⁴⁸¹, *ncac

incidence: ?/27*, conc. range: 17–3,505 µg/kg, Ø conc.: 574 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *high EC area

incidence: 8/20*, conc. range: 11–612 µg/kg, Ø conc.: 99 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *low EC area

incidence: 10/10*, conc. range: 48–3,919 µg/kg, Ø conc.: 650 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 5/5*, conc. range: 129–713 µg/kg, Ø conc.: 356 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *medial incidence of Kashin-Beck disease

incidence: 10/10*, conc. range: 20–725 µg/kg, Ø conc.: 163 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *low incidence of Kashin-Beck disease

incidence: 3/3*, conc. range: 24–36 µg/kg, Ø conc.: 30.7 µg/kg, sample year: unknown, country: Netherlands⁵⁰⁰, sa from unknown origin, *ncac

incidence: 1/3, conc.: 352 µg/kg, sample year: 1989, country: Korea⁵⁰⁹ (1 sa co-contaminated with DON and NIV)

incidence: 14/15*, conc. range: 22–442 µg/kg, Ø conc.: 145 µg/kg, sample year: 1992, country: Korea⁵¹⁴, *ncac (1 sa co-contaminated with DON, FUS-X, NIV, and ZEA, 3 sa co-contaminated with DON, FUS-X, and NIV, 1 sa co-contaminated with DON and FUS-X, 4 sa co-contaminated with DON and NIV, 5 sa contaminated solely with DON)

incidence: 41/43*, conc. range: 260–2,240 µg/kg, Ø conc.: 550 µg/kg, sample year: 1980, country: Canada⁵²¹, *ncac

incidence: 26/26*, conc. range: 170–620 µg/kg, Ø conc.: 340 µg/kg, sample year: 1981, country: Canada⁵²¹, *ncac

incidence: 36/36*, conc. range: 50–880 µg/kg, Ø conc.: 200 µg/kg, sample year: 1982, country: Canada⁵²¹, *ncac

incidence: 17/18*, conc. range: 60–1,190 µg/kg, Ø conc.: 180 µg/kg, sample year: 1983, country: Canada⁵²¹, *ncac

incidence: 13/13*, conc. range: 20–1,020 µg/kg, Ø conc.: 510 µg/kg, sample year: 1984, country: Canada⁵²¹, *ncac

incidence: 14/16*, conc. range: 120–2,280 µg/kg, Ø conc.: 1,340 µg/kg, sample year: 1985, country: Canada⁵²¹, *ncac

incidence: 12/16*, conc. range: 580–3,050 µg/kg, Ø conc.: 1,430 µg/kg, sample year: 1986, country: Canada⁵²¹, *ncac

incidence: 17/18*, conc. range: 220–4,090 µg/kg, Ø conc.: 1,150 µg/kg, sample year: 1987, country: Canada⁵²¹, *ncac

incidence: 3/10*, conc. range: 250–1,590 µg/kg, Ø conc.: 910 µg/kg, sample year: 1988, country: Canada⁵²¹, *ncac

incidence: 8/11*, conc. range: 150–650 µg/kg, Ø conc.: 300 µg/kg, sample year: 1989, country: Canada⁵²¹, *ncac

incidence: 15/15*, conc. range: 350–2,200 µg/kg, Ø conc.: 920 µg/kg, sample year: 1990, country: Canada⁵²¹, *ncac

incidence: 8/10*, conc. range: 120–1,500 µg/kg, Ø conc.: 560 µg/kg, sample year: 1991, country: Canada⁵²¹, *ncac

incidence: 12/12*, conc. range: 120–1,530 µg/kg, Ø conc.: 550 µg/kg, sample year: 1992, country: Canada⁵²¹, *ncac

incidence: 12/20*, conc. range: 220–1,800 µg/kg, Ø conc.: 660 µg/kg, sample year: 1993, country: Canada⁵²¹, *ncac

incidence: 8/11*, conc. range: 140–1,970 µg/kg, Ø conc.: 780 µg/kg, sample year: 1994, country: Canada⁵²¹, *ncac

incidence: 1/8*, conc.: 160 µg/kg, sample year: 1995, country: Canada⁵²¹, *ncac

incidence: 2/86, conc. range: 410–2,020 µg/kg, Ø conc.: 1,215 µg/kg, sample year: 1989, country: India⁵²⁶ (2 sa co-contaminated with DON and T-2)

incidence: 34/36*, conc. range: 6–15,200 µg/kg, Ø conc.: 4,000 µg/kg, sample year: 1997,

country: Korea⁵²⁷, *visibly moldy (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and NIV, 5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and NIV, 2 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 5 sa co-contaminated with DON, 15-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, and 15-AcDON, 1 sa co-contaminated with DON, FUS-X, and NIV, 1 sa co-contaminated with DON and 15-AcDON; no further information available)

incidence: 8/35*, conc. range: 10–100 µg/kg, Ø conc.: 40 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy (2 sa co-contaminated with DON, 3-AcDON, and 15-AcDON, 3 sa co-contaminated with DON, 15-AcDON, and NIV, 1 sa co-contaminated with DON, FUS-X, and NIV, 1 sa co-contaminated with DON and 15-AcDON; no further information available)

incidence: 9/45*, Ø conc.: 402 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 4/5*, conc. range: 240–570 µg/kg, Ø conc.: 410 µg/kg, sample year: unknown, country: Japan⁵³², sa from USA, *ncac

incidence: 1/1*, conc.: 960 µg/kg, sample year: 1984, country: Japan⁵³⁷, sa from Canada, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 2/20*, Ø conc.: 111 µg/kg, sample year: 1983, country: Japan⁵³⁸, sa from Argentina, *ncac

incidence: 2/3*, Ø conc.: 402 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Italy, *ncac

incidence: 3/9*, Ø conc.: 541 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 1/12*, conc.: 6 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 2/2*, conc. range: 240–420 µg/kg, Ø conc.: 330 µg/kg, sample year: unknown, country: Canada⁵⁴⁰, *ncac

incidence: 1/1*, conc.: 420 µg/kg, sample year: 1978, country: South Africa⁵⁴¹, *visibly moldy

incidence: 1/1*, conc.: 2,500 µg/kg, sample year: 1978, country: South Africa⁵⁴¹, *hand-selected visibly *Fusarium* infected kernels

incidence: 48/50*, conc. range: 20–200 µg/kg (21 sa), 210–400 µg/kg (15 sa), 410–600 µg/kg (4 sa), 610–800 µg/kg (3 sa), 810–1,000 µg/kg (2 sa), 1,010–2,200 µg/kg (3 sa), sample year: 1982, country: USA⁵⁴⁵, *ncac

incidence: 8/105, conc. range: 95–312 µg/kg, sample year: probably 1978/1981, country: Taiwan/USA⁵⁴⁷, sa from South Africa and USA

incidence: 48/50*, conc. range: ≤2,100 µg/kg, sample year: 1983, country: USA⁵⁶¹, *ncac

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *conventional

incidence: 2/4*, conc. range: 280–640 µg/kg, Ø conc.: 460 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Italy, USA, and unknown origin, *organic (1 sa co-contaminated with DON, FBS, and ZEA, 1 sa co-contaminated with DON and FBS)

incidence: 3/5* **, conc. range: 12,500–175,200 µg/kg, Ø conc.: 88,633 µg/kg, sample year: 1988, country: Italy/Poland⁵⁶³, sa from Poland, *ncac, **red ear rot symptoms (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, and ZEA, 1 sa co-contaminated with DON, 15-AcDON, and ZEA)

incidence: 61/92*, conc. range: 100–1,870 µg/kg, sample year: 1984, country: USA⁵⁶⁹

incidence: 32/106*, conc. range: 100–2,470 µg/kg, sample year: 1985, country: USA⁵⁶⁹

incidence: 14/58*, conc. range: 200–400 µg/kg, sample year: 1987, country: Argentina⁷⁶², *ncac

incidence: 18/41, conc. range: ≤925 µg/kg, sample year: 1989, country: South Africa⁷⁹⁸

incidence: 38/52, conc. range: ≤1,830 µg/kg, sample year: 1990, country: South Africa⁷⁹⁸

incidence: 41/292*, conc. range: 50.4–2,081.9 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and from different countries, *included sweet corn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (13 sa co-contaminated with DON, FB₁, FB₂, FB₃, and ZEA, 7 sa co-contaminated with DON, FB₁, FB₂, and FB₃, 1 sa co-contaminated with DON, FB₁, FB₂, and ZEA, 1 sa co-contaminated with DON, FB₁, and FB₂, 3 sa co-contaminated with DON, FB₁, and FB₃, 2 sa co-contaminated with DON, FB₁, and ZEA, 12 sa co-contaminated with DON and FB₁, 2 sa contaminated solely with DON)

incidence: 1/11*, conc.: 650 µg/kg, sample year: unknown, country: Turkey⁸⁶³, *dried corn

incidence: 40/180*, conc. range: 204–745 µg/kg, sample year: 2005, country: Nigeria/Germany⁸⁸⁰, sa from Nigeria, *maize seeds

incidence: 54/54, conc. range: 42–3,680 µg/kg, Ø conc.: 753 µg/kg, sample year: 2006, country: Austria⁹³³, sa from Austria, Germany, and Slovakia (54 sa co-contaminated with DON and DON3G)

incidence: 5/10*, conc. range: 40–2,460 µg/kg, Ø conc.: 536 µg/kg, sample year: 2004, country: Serbia⁹³⁷, *ncac

incidence: 29/66*, conc. range: 40–2,210 µg/kg, Ø conc.: 363 µg/kg, sample year: 2005, country: Serbia⁹³⁷, *ncac

incidence: 64/82*, conc. range: 3.6–807.3 µg/kg, Ø conc.: 132.3 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸, *dried corn

incidence: ?/126*, conc. range: ≤1,950 µg/kg, Ø conc.: 140 µg/kg**, sample year: unknown, country: Germany⁹⁴⁵, *corn/corn products, **of pos sa?

incidence: 4/12, conc. range: 159.9–834.4 µg/kg, Ø conc.: 355.4 µg/kg, sample year: 2003, country: Argentina⁹⁵⁴

incidence: 1/14, conc.: 265 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 2/72*, conc. range: 89–139 µg/kg, Ø conc.: 114 µg/kg, sample year: 2008, country: Spain⁹⁷⁷, *sweet corn

incidence: 2/24, conc. range: 200 µg/kg, sample year: 1996, country: Bulgaria⁹⁷⁹

incidence: 3/21, conc. range: 200–500 µg/kg, sample year: 1997, country: Bulgaria⁹⁷⁹

incidence: 5/22, conc. range: 200–300 µg/kg, sample year: 1998, country: Bulgaria⁹⁷⁹

incidence: 6/28, conc. range: 300–700 µg/kg, sample year: 1999, country: Bulgaria⁹⁷⁹

incidence: 4/30, conc. range: 200–400 µg/kg, sample year: 2001, country: Bulgaria⁹⁷⁹

incidence: 20/46* **, conc. range: 5–3,430 µg/kg, Ø conc.: 1,003.2 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize (1 sa co-contaminated with DON and FUS-X, 1 sa co-contaminated with DON and NIV, 11 sa co-contaminated with DON and 3-AcDON + 15-AcDON; no further information available)

incidence: 2/5*, conc. range: 35.1–60.6 µg/kg, Ø conc.: 47.5 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *tinned sweet corn

incidence: 3/5*, conc. range: 32.8–85.7 µg/kg, Ø conc.: 51.2 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *frozen corn

incidence: 47/47*, conc. range: 197–3,980 µg/kg, Ø conc.: 1,042 µg/kg, sample year: 2006, country: Italy¹⁰²², *for food and feed

incidence: 32/36*, conc. range: ≤13,990 µg/kg, sample year: 2007, country: Italy¹⁰²², *for food and feed

incidence: 52/53, conc. range: ≤43,200 µg/kg, sample year: unknown, country: China¹¹⁵²

incidence: 2/197, conc. range: 17–21 µg/kg, Ø conc.: 19 µg/kg, sample year: 1994–1997, country: India¹¹⁶²

incidence: 86/86*, conc. range: 170–14,000 µg/kg** ***, sample year: 2008, country: Canada¹¹⁷³, *ncac, **free DON, ***84% of the sa below 2,000 µg DON/kg

incidence: 61/69, conc. range: 2.7–311.2 µg/kg, Ø conc.: 86.0 µg/kg, sample year: unknown, country: China¹¹⁷⁷

incidence: 1/2* **, conc.: 180 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac, **1 moist grain (1 sa co-contaminated with DON, NIV, and OTA) and 1 dry grain sa

incidence: 6/32*, Ø conc.: 66 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³, *canned corn

incidence: 74/96*, Ø conc.: 166 µg/kg, sample year: 2005–2008, country: Korea¹³⁰³, *dried corn

incidence: 23/31* **, conc. range: 28–12,400 µg/kg, Ø conc.: 1,846.7 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (2 sa co-contaminated with DON, NIV and ZEA, 2 sa co-contaminated with DON and NIV, 13 sa co-contaminated with DON and ZEA, 6 sa contaminated solely with DON)

incidence: 33/100*, conc. range: tr–1,200 µg/kg, sample year: 1987/1989, country: Argentina¹³⁹¹, *for food and feed

incidence: 29/29*, conc. range: 25–2,159 µg/kg, Ø conc.: 749 µg/kg, sample year: unknown, country: Austria¹⁴⁰⁴, *ncac

incidence: 36/54*, conc. range: >1,750–11,000 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 6/6*, conc. range: 411–5,245 µg/kg, Ø conc.: 2,036 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, α-ZEL4G, and β-ZEL4G, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL)

incidence: 69/98*, conc. range: 200–700 µg/kg (56 sa), 800–1,900 µg/kg (7 sa), >1,900 µg/kg (6 sa), sample year: 1993, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 48/81*, conc. range: 200–700 µg/kg (42 sa), 800–1,900 µg/kg (2 sa), >1,900 µg/kg (4 sa), sample year: 1994, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 44/64*, conc. range: 200–700 µg/kg (37 sa), 800–1,900 µg/kg (1 sa), >1,900 µg/kg (6 sa), sample year: 1995, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 101?/135*, conc. range: 200–700 µg/kg (50 sa), 800–1,900 µg/kg (26 sa), >1,900 µg/kg (26 sa), sample year: 1996, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 119?/199*, conc. range: 200–700 µg/kg (56 sa), 800–1,900 µg/kg (22 sa), >1,900 µg/kg (42 sa), sample year: 1997, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 109?/135*, conc. range: 200–700 µg/kg (50 sa), 800–1,900 µg/kg (34 sa), >1,900 µg/kg (26 sa), sample year: 1998, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 76/86*, conc. range: 200–700 µg/kg (21 sa), 800–1,900 µg/kg (22 sa), >1,900 µg/kg (33 sa), sample year: 1999, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 49/58*, conc. range: 200–700 µg/kg (30 sa), 800–1,900 µg/kg (12 sa), >1,900 µg/kg (7 sa), sample year: 2000, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 14/15, conc. range: 574–4,865 µg/kg, Ø conc.: 1557.1 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, and T-2, 2 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and FB₂, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, T-2, and ZEA, 3 sa co-contaminated with DON, 3-AcDON + 15AcDON, and ZEA, 2 sa co-contaminated with DON and 3-AcDON + 15AcDON)

incidence: 1/26, conc.: 31.4 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 2/13, conc. range: 116–124 µg/kg, Ø conc.: 120 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 9/10*, conc. range: 26–381 µg/kg, Ø conc.: 153.8 µg/kg, sample year: unknown, country: China/Belgium¹⁵⁴⁴, *ncac

incidence: 5/5*, conc. range: 64–2,864 µg/kg, Ø conc.: 725 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from France, *ncac (5 sa co-contaminated with DON and DON3G)

incidence: 22/24* **, conc. range: 154–16,528 µg/kg, sample year: 2011, country: Serbia¹⁵⁸⁷, *ncac, **silo maize (22 sa co-contaminated with DON and FBS)

incidence: 103/203, conc. range: 2–4,374 µg/kg, Ø conc.: 283 µg/kg, sample year: 2008, country: China¹⁵⁹²

incidence: 18/20, conc. range: 0.4–519 µg/kg, Ø conc.: 93 µg/kg, sample year: 2009, country: China¹⁵⁹²

incidence: 49/60, conc. range: 0.3–2,149 µg/kg, Ø conc.: 314 µg/kg, sample year: 2010, country: China¹⁵⁹²

incidence: 6/6, conc. range: 21–376 µg/kg, Ø conc.: 119 µg/kg, sample year: 2011, country: China¹⁵⁹²

incidence: 24/24, conc. range: <100 µg/kg (16 sa), 100–200 µg/kg (7 sa), 205.7 µg/kg (1 sa), Ø conc.: 95.0 µg/kg, sample year: unknown, country: Indonesia/Austria¹⁶²⁶, sa from Indonesia

incidence: 9/9*, conc. range: <100 µg/kg (2 sa), 100–200 µg/kg (6 sa), 348.0 µg/kg (1 sa), Ø conc.: 155.4 µg/kg, sample year: unknown, country: Indonesia/Austria¹⁶²⁶, sa from Indonesia, *fried maize

incidence: 3/5*, conc. range: 0.2–60 µg/kg, Ø conc.: 22.7 µg/kg, sample year: 2005, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (3 sa co-contaminated with DON and FBS)

incidence: 5/8*, conc. range: 0.4–99 µg/kg, Ø conc.: 32.5 µg/kg, sample year: 2006, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (5 sa co-contaminated with DON and FBS)

incidence: 4/7*, conc. range: 10–320 µg/kg, Ø conc.: 98 µg/kg, sample year: 2007, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (3 sa

co-contaminated with DON and FBS; 1 sa contaminated solely with DON)

incidence: 7/7*, conc. range: 25–1,900 µg/kg, Ø conc.: 503 µg/kg, sample year: 2008, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (7 sa co-contaminated with DON and FBS)

3-ACETYLDEOXYNIVALENOL

incidence: 5?/24* **, conc. range: 30–185 µg/kg, Ø conc.: 113 µg/kg, sample year: 1985/1986, country: China⁴⁵⁶, *corn and corn meal, **high EC area (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, NIV, and ZEA)

incidence: 20/93*, conc. range: 2–514 µg/kg, Ø conc.: 77.2 µg/kg, sample year: unknown, country: Italy⁴⁸¹, *ncac

incidence: 2/10*, conc. range: 47–110 µg/kg, Ø conc.: 79 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 4/5*, conc. range: 5–36 µg/kg, Ø conc.: 18 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *medial incidence of Kashin-Beck disease

incidence: 5/10*, conc. range: 5–121 µg/kg, Ø conc.: 47 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *low incidence of Kashin-Beck disease

incidence: 12?/36*, conc. range: 20–1,500 µg/kg, Ø conc.: 200 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly moldy (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and NIV, 2 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and NIV, 1 sa co-contaminated with DON, 3-AcDON, and 15-AcDON; no further information available)

incidence: 2/35*, conc. range: 50–200 µg/kg, Ø conc.: 125 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy (2 sa co-contaminated with DON, 3-AcDON, and 15-AcDON)

incidence: 2/5* **, conc. range: 2,400–7,500 µg/kg, Ø conc.: 4,950 µg/kg, sample year: 1988, country: Italy/Poland⁵⁶³, sa from Poland, *ncac, **red ear rot symptoms (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, and ZEA)

incidence: 31/180*, conc. range: 1–72 µg/kg, sample year: 2005, country: Nigeria/Germany⁸⁸⁰, sa from Nigeria, *maize seeds

incidence: 6/54, conc. range: pr, sample year: 2006, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 35/69, conc. range: 2–8.1 µg/kg, Ø conc.: 3.79 µg/kg, sample year: unknown, country: China¹¹⁷⁷

incidence: 6/6*, conc. range: 63–613 µg/kg, Ø conc.: 305.3 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, α-ZEL4G, and β-ZEL4G, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL)

incidence: 72/203, conc. range: 1–368 µg/kg, Ø conc.: 19 µg/kg, sample year: 2008, country: China¹⁵⁹²

incidence: 11/20, conc. range: 0.3–3 µg/kg, Ø conc.: 1 µg/kg, sample year: 2009, country: China¹⁵⁹²

incidence: 34/60, conc. range: 0.3–59 µg/kg, Ø conc.: 7 µg/kg, sample year: 2010, country: China¹⁵⁹²

incidence: 2/6, conc. range: 0.3–2 µg/kg, Ø conc.: 1 µg/kg, sample year: 2011, country: China¹⁵⁹²

15-ACETYLDEOXYNIVALENOL

incidence: 13/34*, conc. range: 76–620 µg/kg, Ø conc.: 237 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 1/2*, conc.: 2,537 µg/kg, sample year: 1989, country: China³⁴², *powdered corn (1 sa co-contaminated with DON, 15-AcDON, FB₁, FB₂, FB₃, and ZEA)

incidence: 5?/24* **, conc. range: 160–1,435 µg/kg, Ø conc.: 495 µg/kg, sample year: 1985/1986, country: China⁴⁵⁶, *corn and corn meal, **high EC area (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, NIV, and ZEA)

incidence: 12/46, conc. range: 22–1,726 µg/kg, Ø conc.: 297 µg/kg, sample year: 1990/1991, country: Korea/Japan⁴⁶², sa from Korea

incidence: 2/16*, conc. range: 500–700 µg/kg, Ø conc.: 600 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *raw corn

incidence: ?/27*, conc. range: 44–752 µg/kg, Ø conc.: 274 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *high EC area

incidence: 1/20*, conc.: 104 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *low EC area

incidence: 7/10*, conc. range: 48–918 µg/kg, Ø conc.: 211 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 5/5*, conc. range: 96–284 µg/kg, Ø conc.: 176 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *medial incidence of Kashin-Beck disease

incidence: 10/10*, conc. range: 25–918 µg/kg, Ø conc.: 64.8 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *low incidence of Kashin-Beck disease

incidence: 30/36*, conc. range: 20–4,600 µg/kg, Ø conc.: 900 µg/kg, sample year: 1997,

country: Korea⁵²⁷, *visibly moldy (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and NIV, 5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and NIV, 5 sa co-contaminated with DON, 15-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, 3-AcDON, and 15-AcDON, 1 sa co-contaminated with DON and 15-AcDON; no further information available)

incidence: 6/35*, conc. range: 2–100 µg/kg, Ø conc.: 40 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy (2 sa co-contaminated with DON, 3-AcDON, and 15-AcDON, 3 sa co-contaminated with DON, 15-AcDON, and NIV, 1 sa co-contaminated with DON and 15-AcDON)

incidence: 2/5* **, conc. range: 500–600 µg/kg, Ø conc.: 550 µg/kg, sample year: 1988, country: Italy/Poland⁵⁶³, sa from Poland, *ncac, **red ear rot symptoms (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, 15-AcDON, and ZEA)

incidence: 43/54, conc. range: pr, sample year: 2006, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 60/69, conc. range: 2.1–32.5 µg/kg, Ø conc.: 11.44 µg/kg, sample year: unknown, country: China¹¹⁷⁷

incidence: 6/6*, conc. range: 61–792 µg/kg, Ø conc.: 333.7 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, α-ZEL4G, and β-ZEL4G, 2 sa co-contaminated with DON, 3-AcDON,

15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL)

incidence: 97/203, conc. range: 2–1,734 µg/kg, Ø conc.: 156 µg/kg, sample year: 2008, country: China¹⁵⁹²

incidence: 16/20, conc. range: 1–95 µg/kg, Ø conc.: 29 µg/kg, sample year: 2009, country: China¹⁵⁹²

incidence: 54/60, conc. range: 0.3–465 µg/kg, Ø conc.: 58 µg/kg, sample year: 2010, country: China¹⁵⁹²

incidence: 4/6, conc. range: 6–65 µg/kg, Ø conc.: 28 µg/kg, sample year: 2011, country: China¹⁵⁹²

3-ACETYLDEOXYNIVALENOL + 15-ACETYLDEOXYNIVALENOL

incidence: 12/46* **, conc. range: 6–3,500 µg/kg, Ø conc.: 314.3 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize (11 sa co-contaminated with DON and 3-AcDON + 15-AcDON; no further information available)

incidence: 14/15, conc. range: 75–690 µg/kg, Ø conc.: 211.8 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, and T-2, 2 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and FB₂, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, T-2, and ZEA, 3 sa co-contaminated with DON, 3-AcDON + 15AcDON, and ZEA, 2 sa co-contaminated with DON and 3-AcDON + 15AcDON)

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 54/54, conc. range: 10–763 µg/kg, Ø conc.: 141 µg/kg, sample year: 2005, country: Austria⁹³³, sa from Austria, Germany, and Slovakia (54 sa co-contaminated with DON and DON3G)

incidence: 6/6*, conc. range: 36–1,003 µg/kg, Ø conc.: 339.8 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, α-ZEL4G, and β-ZEL4G, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL)

incidence: 3/13, conc. range: 12.6–32.5 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 5/5*, conc. range: 4.0–237 µg/kg, Ø conc.: 72.6 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from France, *ncac (5 sa co-contaminated with DON and DON3G)

incidence: 68/203, conc. range: 3–499 µg/kg, Ø conc.: 66 µg/kg, sample year: 2008, country: China¹⁵⁹²

incidence: 12/20, conc. range: 3–93 µg/kg, Ø conc.: 23 µg/kg, sample year: 2009, country: China¹⁵⁹²

incidence: 39/60, conc. range: 3–495 µg/kg, Ø conc.: 73 µg/kg, sample year: 2010, country: China¹⁵⁹²

incidence: 5/6, conc. range: 40–978 µg/kg?, Ø conc.: 6 µg/kg?, sample year: 2011, country: China¹⁵⁹²

ENNIATIN A₁

incidence: 13?/31*, conc. range: ≤445 µg/kg, Ø conc.: 207 µg/kg, sample year:

unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 25?/28, conc. range: ≤813,010 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 2?/3, conc. range: ≤29,600 µg/kg, Ø conc.: 29,600 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 2/13, conc. range: 0.1 µg/kg, Ø conc.: 0.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

ENNIATIN B

incidence: 13?/31*, conc. range: ≤100 µg/kg, Ø conc.: 54 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 25?/28, conc. range: ≤6,310 µg/kg, year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

ENNIATIN B₁

incidence: 13?/31*, conc. range: ≤8 µg/kg, Ø conc.: 8 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 25?/28, conc. range: ≤4,340 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 2?/3, conc. range: ≤17,000 µg/kg, Ø conc.: 17,000 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 1/26, conc.: 0.2 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 1/13, conc.: 0.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

FUMONISIN B₁

incidence: 50/50*, conc. range: 185–27,050 µg/kg, Ø conc.: 2,229 µg/kg, sample year: 1993/1994, country: Argentina/Italy¹⁶⁷, sa from Argentina, *ncac (50 sa co-contaminated with FB₁ and FB₂)

incidence: 212/214*, conc. range: 200–6,100 µg/kg, Ø conc.: 2,200 µg/kg, sample year: 1997/1998, country: Brazil²⁰⁵, *ncac

incidence: 14/14, conc. range: 70–2,621 µg/kg, Ø conc.: 608.8 µg/kg, sample year: unknown, country: Denmark²⁰⁶, sa from Ghana (6 sa co-contaminated with FB₁, FB₂, and FB₃, 5 sa co-contaminated with FB₁ and FB₂, 3 sa contaminated solely with FB₁)

incidence: 15/15, conc. range: 11–1,655 µg/kg, Ø conc.: 358.1 µg/kg, sample year: unknown, country: Denmark²⁰⁶, sa from Ghana (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, FB₁, and FB₂, 2 sa co-contaminated with AFB₁, AFB₂, and FB₁, 1 sa co-contaminated with AFB₁, FB₁, and FB₂, 1 sa co-contaminated with FB₁, FB₂, and FB₃, 3 sa co-contaminated with FB₁ and FB₂, 3 sa contaminated solely with FB₁)

incidence: 1/6*, conc.: 956 µg/kg, sample year: 1997/1998, country: Argentina²⁰⁸, *yellow maize

incidence: 1/2*, conc.: 1,322 µg/kg, sample year: 1997/1998, country: Argentina²⁰⁸, *white maize

incidence: 2/11*, conc. range: ≤80 µg/kg, Ø conc.: 70 µg/kg, sample year: 1999, country: Brazil²¹⁵, *canned sweet maize

incidence: 8/11*, conc. range: ≤4,520 µg/kg, Ø conc.: 1,160 µg/kg, sample year: 1999, country: Brazil²¹⁵, *degerminated maize

incidence: 30/30*, conc. range: 460–9,950 µg/kg, Ø conc.: 3,939 µg/kg, sample year: 1994/1995, country: Argentina²³⁶, *ncac (28 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with FB₁, FB₂, and ZEA, 1 sa co-contaminated with FB₁ and ZEA)

incidence: 49/49*, conc. range: 142.2–1,377.6 µg/kg, Ø conc.: 459 µg/kg, sample year: 2002, country: Croatia²⁴⁰, *ncac

incidence: 9/9* **, conc. range: 1,900–26,000 µg/kg, Ø conc.: 7,477.7 µg/kg, sample year: 1996, country: Cameroon/South Africa/Benin²⁴¹, sa from Cameroon, *ncac, **sa from humid forest (5 sa co-contaminated with DON, FB₁, and ZEA, 1 sa co-contaminated with FB₁ and ZEA, 3 sa contaminated solely with FB₁)

incidence: 7/9* **, conc. range: 300–2,000 µg/kg, Ø conc.: 1,214.3 µg/kg, sample year: 1996, country: Cameroon/South Africa/Benin²⁴¹, sa from Cameroon, *ncac, **sa from western highlands (7 sa co-contaminated with DON, FB₁, and ZEA)

incidence: 32/36* ** ***, conc. range: 100–8,290 µg/kg, Ø conc.: 1,500 µg/kg, sample year: 1997, country: Cameroon/South Africa/Benin²⁴¹, sa from Cameroon, *ncac, **sa from western highlands, ***stored 2 months after harvest

incidence: 26/33* ** ***, conc. range: 240–15,130 µg/kg, Ø conc.: 3,046.7 µg/kg, sample year: 1997, country: Cameroon/South Africa/Benin²⁴¹, sa from Cameroon, *ncac, **sa from western highlands, ***stored 4 months after harvest

incidence: 27/34*, conc. range: 76–21,000 µg/kg, Ø conc.: 2,730 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 10/20*, conc. range: 79–8,470 µg/kg, Ø conc.: 2,702 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 15/20, conc. range: 58–1,976 µg/kg, Ø conc.: 377 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 3 sa co-contaminated with

AFB₁, AFB₂, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and FB₁, 1 sa co-contaminated with AFB₁, AFB₂, and FB₁, 1 sa co-contaminated with AFB₁, FB₁, and FB₂, 1 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁ and FB₂, 1 sa contaminated solely with FB₁)

incidence: 15/20, conc. range: 72–294 µg/kg, Ø conc.: 129 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China

incidence: 149/150*, conc. range: 70–13,460 µg/kg, sample year: 1995/1996, country: Brazil/Japan³²⁶, sa from Brazil, *ncac

incidence: 2/2*, conc. range: 517–541 µg/kg, Ø conc.: 529 µg/kg, sample year: 1989, country: China³⁴², *powdered corn (1 sa co-contaminated with DON, 15-AcDON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, FB₂, FB₃, NIV and ZEA)

incidence: 52/57*, conc. range: 90–17,690 µg/kg, sample year: 1999, country: Brazil³⁴⁹, *ncac

incidence: 20/20*, conc. range: <50–4,100 µg/kg, sample year: unknown, country: USA³⁵⁰, *ncac (20 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 55/108, conc. range: 65–1,830 µg/kg, sample year: 2000, country: Nigeria³⁵¹

incidence: 2/3, conc. range: 15,000–36,000 µg/kg, Ø conc.: 25,500 µg/kg, sample year: unknown, country: USA³⁵²

incidence: 8/8*, conc. range: ≤300,000 µg/kg, sample year: unknown, country: Italy³⁵³, *ncac

incidence: 23/23*, conc. range: 1,630–25,690 µg/kg, Ø conc.: 5,610 µg/kg, sample year: 1997/1998, country: Brazil³⁵⁴, *ncac (23 sa co-contaminated with FB₁ and FB₂)

incidence: 48/55*, conc. range: 200–19,200 µg/kg, Ø conc.: 4,800 µg/kg, sample year: 1994–1996, country: Spain³⁵⁵, *ncac (22 sa co-contaminated

with FB₁ and FB₂, 26 sa contaminated solely with FB₁)

incidence: 15/47*, conc. range: 100–22,200 µg/kg, Ø conc.: 2,200 µg/kg, sample year: unknown, country: South Africa³⁵⁸, *sa from rural areas

incidence: 3/49*, conc. range: 200–500 µg/kg, Ø conc.: 300 µg/kg, sample year: unknown, country: South Africa³⁵⁸, *sa from urban areas

incidence: 35/35*, conc. range: 4–16,000 µg/kg, Ø conc.: 2,500 µg/kg, sample year: unknown, country: Denmark/Costa Rica³⁵⁹, sa from Costa Rica, *ncac

incidence: 26/26* **, conc. range: 10–2,330 µg/kg, Ø conc.: 381.9 µg/kg, sample year: 1989–1991, country: Italy/France/Norway³⁶⁰, sa from Italy, *ncac, **inbred lines (13 sa co-contaminated with FB₁ and FB₂, 13 sa contaminated solely with FB₁)

incidence: 9/9* **, conc. range: 90–2,300 µg/kg, Ø conc.: 1,031.1 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Portugal, *ncac, **hybrids (8 sa co-contaminated with FB₁ and FB₂, 1 sa contaminated solely with FB₁)

incidence: 11/19* **, conc. range: 10–60 µg/kg, Ø conc.: 19.1 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Croatia, *ncac, **hybrids (4 sa co-contaminated with FB₁ and FB₂, 7 sa contaminated solely with FB₁)

incidence: 2/7* **, conc. range: 10–20 µg/kg, Ø conc.: 15 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Poland, *ncac, **hybrids (1 sa co-contaminated with FB₁ and FB₂, 1 sa contaminated solely with FB₁)

incidence: 3/6* **, conc. range: 10–20 µg/kg, Ø conc.: 13.3 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Romania, *ncac, **hybrids (1 sa co-contaminated with FB₁ and FB₂, 2 sa contaminated solely with FB₁)

incidence: 9/9* **, conc. range:
20–2,630 µg/kg, Ø conc.: 570 µg/kg,
sample year: 1992, country: Italy/France/
Norway³⁶⁰, sa from Benin, *ncac,
**hybrids (7 sa co-contaminated with FB₁
and FB₂, 2 sa contaminated solely
with FB₁)

incidence: 20/20* **, conc. range:
20–1,420 µg/kg, Ø conc.: 180 µg/kg,
sample year: 1992, country: Italy/France/
Norway³⁶⁰, sa from Zambia, *ncac,
**hybrids (15 sa co-contaminated with
FB₁ and FB₂, 5 sa contaminated solely
with FB₁)

incidence: 7/7*, conc. range: 100–5,310 µg/
kg, Ø conc.: 2,107.1 µg/kg, sample year:
1992/1993, country: Italy³⁶², *ncac

incidence: 6/6*, conc. range: 790–
6,100 µg/kg, Ø conc.: 3,145 µg/kg, sample
year: 1992/1993, country: Italy³⁶², *puffed
corn

incidence: 5/5* **, conc. range:
60–790*** µg/kg, Ø conc.: 298 µg/kg,
sample year: 1992/1993, country: Italy³⁶²,
*sweet corn, **canned and one sa fresh
cobs***

incidence: 1/1, conc.: 8,790 µg/kg, sample
year: unknown, country: USA³⁶³, *ncac

incidence: 6/6, conc. range: 4,000–8,000 µg/
kg, Ø conc.: 5,166.7 µg/kg, sample year:
1995–1997, country: Zimbabwe/Belgium³⁶⁵,
sa from Zimbabwe

incidence: 48/48*, conc. range: 600–
18,520 µg/kg, Ø conc.: 5,080 µg/kg, sample
year: 1990/1991, country: Brazil³⁶⁷, *for
food and feed

incidence: 1/1*, conc.: 26 µg/kg, sample
year: 1990, country: USA³⁶⁹, *canned
yellow corn (1 sa co-contaminated with
FB₁ and HFB₁)

incidence: 47/197, conc. range: 110–
12,000 µg/kg, Ø conc.: 670 µg/kg, sample
year: 1996, country: Kenya³⁷¹

incidence: 5/12*, conc. range: 47–1,010 µg/
kg, Ø conc.: 298 µg/kg, sample year: 1996,
country: Korea³⁷⁵, *corn for popping

incidence: 62/62, conc. range: tr–3,350 µg/
kg, Ø conc.: 626.8 µg/kg, sample year:
1994–1996, country: Netherlands³⁷⁹, sa
from Bahrein, France, Greece and
unknown origin

incidence: 3/5*, conc. range: ≤300 µg/kg,
sample year: 1995, country:
Netherlands³⁸⁰, *puffed maize, broken
maize, maize flakes and waffles

incidence: 2/10*, conc. range: tr–110 µg/
kg, sample year: 1995, country:
Netherlands³⁸⁰, *maize for popcorn

incidence: 8/19*, conc. range: tr–380 µg/
kg, sample year: 1996, country:
Netherlands³⁸⁰, *maize for bread
production

incidence: 1/7*, conc.: 360 µg/kg**,
sample year: 1996, country: Turkey³⁸¹,
*bought from market, **sa from USA

incidence: 2/4* **, conc. range: 300–
320 µg/kg, Ø conc.: 310 µg/kg, sample
year: unknown, country: Turkey³⁸¹,
*canned maize, **bought from market

incidence: 176/195* **, conc. range: 870–
49,310 µg/kg, Ø conc.: 9,720 µg/kg, sample
year: unknown, country: Brazil³⁸², *ncac,
**hybrids Br 201, C 125, and Cx 322
freshly harvested or stored

incidence: 1/1*, conc.: 3,750 µg/kg, sample
year: unknown, country: Japan³⁸⁷, sa
imported?, *ncac (1 sa co-contaminated
with FB₁ and FB₂)

incidence: 11/22, conc. range: 165–
5,787 µg/kg, Ø conc.: 1,876.2 µg/kg, sample
year: 1995/1996, country: Uruguay/
Canada/USA³⁹⁹, sa from Uruguay

incidence: 1/2*, conc.: 155 µg/kg, sample
year: 1995/1996, country: Uruguay/
Canada/USA³⁹⁹, sa from Uruguay, *frozen
corn

incidence: 1/7*, conc.: 70 µg/kg, sample
year: 1991, country: Switzerland⁴⁰⁰,
*sweet corn

incidence: 212/214*, conc. range: ≥200 to
≤1,000 µg/kg (42 sa), >1,000 to ≤3,000 µg/
kg (124 sa), >3,000 to ≤6,000 µg/kg

(48 sa), sample year: 1998, country: Brazil⁴⁰¹, *ncac

incidence: 2/12*, conc. range: ≤550, Ø conc.: 375 µg/kg, sample year: 1985, country: South Africa⁴⁰², *good corn, low-EC area

incidence: 12/12*, conc. range: 50–7,900 µg/kg, Ø conc.: 1,600 µg/kg, sample year: 1985, country: South Africa⁴⁰², *good corn, high-EC area

incidence: 11/11*, conc. range: 450–18,900 µg/kg, Ø conc.: 6,520 µg/kg, sample year: 1985, country: South Africa⁴⁰², *moldy corn intended for beer brewing or animal feed, low-EC area

incidence: 12/12*, conc. range: 3450–46,900 µg/kg, Ø conc.: 23,900 µg/kg, sample year: 1985, country: South Africa⁴⁰², *moldy corn intended for beer brewing or animal feed, high-EC area

incidence: 6/8*, conc. range: ≤3,310 µg/kg, Ø conc.: 667 µg/kg, sample year: 1989, country: South Africa⁴⁰², *good corn, low-EC area

incidence: 5/6*, conc. range: ≤5,380 µg/kg, Ø conc.: 1,840 µg/kg, sample year: 1989, country: South Africa⁴⁰², *good corn, high-EC area

incidence: 7/7*, conc. range: 110–11,340 µg/kg, Ø conc.: 4,050 µg/kg, sample year: 1989, country: South Africa⁴⁰², *moldy corn, low-EC area

incidence: 6/6*, conc. range: 3020–117,520 µg/kg, Ø conc.: 53,740 µg/kg, sample year: 1989, country: South Africa⁴⁰², *moldy corn, high-EC area

incidence: ?/5*, conc. range: 300–3,400 µg/kg, sample year: 1988–1992, country: USA⁴⁰³, *Indian corn

incidence: 6/10*, conc. range: 50–880 µg/kg, Ø conc.: 376.7 µg/kg, sample year: 1999, country: Iran⁴⁰⁸, *purchased as maize ears

incidence: 5/5* **, conc. range: 80–16,310 µg/kg, Ø conc.: 3,612 µg/kg, sample year: 1990/1991, country: USA⁴¹⁰,

sa from Canada and USA, *ncac, **included 1 white corn sa (5 sa co-contaminated with FB₁ and FB₂)

incidence: 1/1*, conc.: 60 µg/kg, sample year: 1991, country: USA⁴¹⁰, *hominy corn (1 sa co-contaminated with FB₁ and FB₂)

incidence: 47/47*, conc. range: 50–700 µg/kg, Ø conc.: 307.4 µg/kg, sample year: 1992, country: South Africa⁴¹¹, sa from Argentina, *ncac

incidence: 79/79*, conc. range: 900–3,900 µg/kg, Ø conc.: 2,347 µg/kg, sample year: 1992, country: South Africa⁴¹¹, sa from USA, *ncac

incidence: 17/17*, conc. range: 1,655–6,695 µg/kg, Ø conc.: 2,876.8 µg/kg, sample year: 1991, country: South Africa/Argentina⁴¹², sa from Argentina, *ncac (17 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 7/7, conc. range: 105–1,915 µg/kg, Ø conc.: 635 µg/kg, sample year: 1989, country: South Africa⁴¹³, sa from USA

incidence: 1/1*, conc.: 1,848 µg/kg, sample year: unknown, country: USA⁴¹⁴, *ncac (1 sa co-contaminated with FB₁ and FB₂)

incidence: 28/70*, conc. range: 4–19 µg/kg (16 sa), 20–33 µg/kg (8 sa), 65–82 µg/kg (3 sa), 235 µg/kg (1 sa), Ø conc.: 201 µg/kg, sample year: 1993, country: USA⁴¹⁶, *canned corn (kernels)

incidence: 3/20*, conc. range: 4–10 µg/kg (2 sa), 26 µg/kg (1 sa), Ø conc.: 12.7 µg/kg, sample year: 1993, country: USA⁴¹⁶, *canned corn (liquid)

incidence: 9/27*, conc. range: 8–18 µg/kg (6 sa), 21–25 µg/kg (2 sa), 350 µg/kg (1 sa), Ø conc.: 53.3 µg/kg, sample year: 1993, country: USA⁴¹⁶, *frozen corn

incidence: 49/110, conc. range: 109–1,148 µg/kg, sample year: 1996/1997, country: Taiwan⁴¹⁷

incidence: 12/24*, conc. range: ≤1,089 µg/kg, Ø conc.: 400.4 µg/kg, sample year:

unknown, country: Taiwan⁴¹⁸, *sweet
canned maize

incidence: 4/78*, conc. range: $\leq 1,614$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 619.0 $\mu\text{g}/\text{kg}$, sample year: 1997/1998,
country: Taiwan⁴¹⁹, sa from USA, *ncac

incidence: 2/20*, conc. range: ≤ 334 $\mu\text{g}/\text{kg}$, \emptyset
conc.: 307.7 $\mu\text{g}/\text{kg}$, sample year: 1997/1998,
country: Taiwan⁴¹⁹, sa from Thailand, *ncac

incidence: 2/10*, conc. range: ≤ 477 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 332.0 $\mu\text{g}/\text{kg}$, sample year:
1997/1998, country: Taiwan⁴¹⁹, sa from
Australia, *ncac

incidence: 11/39*, conc. range: 22.4–
119.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 55.96 $\mu\text{g}/\text{kg}$, sample
year: 1998–2000, country: Spain⁴²¹, *sweet
corn

incidence: 7/51*, conc. range: 16.49–
211.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 48.38 $\mu\text{g}/\text{kg}$, sample
year: 1998–2000, country: Spain⁴²¹, *corn
grain for popcorn

incidence: 4/36*, conc. range: 17.56–
88.45 $\mu\text{g}/\text{kg}$, \emptyset conc.: 38.33 $\mu\text{g}/\text{kg}$, sample
year: 1998–2000, country: Spain⁴²¹,
*toasted corn

incidence: 13/27*, conc. range: 186–
2,964 $\mu\text{g}/\text{kg}$, \emptyset conc.: 872 $\mu\text{g}/\text{kg}$, sample
year: 1989, country: Japan⁴²², sa from
China, *high-EC area

incidence: 5/20*, conc. range: 197–
1,732 $\mu\text{g}/\text{kg}$, \emptyset conc.: 890 $\mu\text{g}/\text{kg}$, sample
year: 1989, country: Japan⁴²², sa from
China, *low-EC area

incidence: 16/16, conc. range: 51–2,440 $\mu\text{g}/$
 kg , \emptyset conc.: 788 $\mu\text{g}/\text{kg}$, sample year: 1995,
country: Japan/Indonesia⁴²⁶, sa from
Indonesia (2 sa co-contaminated with
AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
FB₁, and FB₂, 2 sa co-contaminated with
AFB₁, AFB₂, FB₁, FB₂, and FB₃, 1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
and FB₁, 1 sa co-contaminated with DON,
FB₁, NIV, and ZEA, 2 sa co-contaminated
with AFB₁, AFB₂, and FB₁, 1 sa
co-contaminated with AFB₁, FB₁, and FB₂, 1
sa co-contaminated with AFB₁, FB₁, and

ZEA, 1 sa co-contaminated with DON, FB₁,
and NIV, 1 sa co-contaminated with FB₁
and FB₂, 2 sa contaminated solely with FB₁)

incidence: 6/6* **, conc. range: 125,000–
250,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 187,500 $\mu\text{g}/\text{kg}$,
sample year: 1992/1993, country: Italy⁴³³,
*ncac, **moldy maize (4 sa
co-contaminated with BEA and FB₁, 2 sa
contaminated solely with FB₁)

incidence: 71/100, conc. range:
43–1,642 $\mu\text{g}/\text{kg}$, sample year: 1998,
country: USA⁴⁵³

incidence: 48/49*, conc. range: 1,190–
12,950 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6,273.9 $\mu\text{g}/\text{kg}$,
sample year: 2000, country: Iran/South
Africa⁴⁷³, sa from Iran, *visually healthy
maize

incidence: 129/246, conc. range: 500–
16,000 $\mu\text{g}/\text{kg}$, sample year: 1995/1996,
country: China⁴⁷⁵

incidence: 2/16*, conc. range: 2,200–
2,400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,100 $\mu\text{g}/\text{kg}$, sample
year: 1996, country: China/USA⁴⁷⁸, sa from
China, *raw corn

incidence: 4/42* **, conc. range: 150,000–
250,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 202,500 $\mu\text{g}/\text{kg}$,
sample year: 1992/1993, country: Italy⁴⁹⁴,
*ncac, **selected preharvest-infected maize
ears (1 sa co-contaminated with BEA, FB₁,
and MON, 3 sa co-contaminated with BEA
and FB₁)

incidence: 20/22* **, conc. range:
tr–300,000 $\mu\text{g}/\text{kg}$, sample year: 1994,
country: Italy⁵¹³, *ncac, **visibly moldy (5 sa
co-contaminated with BEA, FB₁, and FP, 4 sa
co-contaminated with FB₁ and FP, 1 sa
co-contaminated with BEA and FB₁, 10 sa
co-contaminated solely with FB₁)

incidence: 33/36*, conc. range: 100–
168,800 $\mu\text{g}/\text{kg}$, \emptyset conc.: 23,200 $\mu\text{g}/\text{kg}$,
sample year: 1997, country: Korea⁵²⁷,
*visibly moldy

incidence: 10/35*, conc. range:
90–12,500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3,200 $\mu\text{g}/\text{kg}$,
sample year: 1997, country: Korea⁵²⁷,
*visibly healthy (5 sa co-contaminated

with FB₁, FB₂, and FB₃; no further information available)

incidence: 8/8*, conc. range: 10–590 µg/kg, Ø conc.: 169 µg/kg, sample year: 1998, country: South Africa/Iran⁵⁵³, sa from Iran, *corn ears (2 sa co-contaminated with FB₁, FB₂, and FB₃, 6 sa contaminated solely with FB₁)

incidence: 10/10, conc. range: 300–1,500 µg/kg, Ø conc.: 900 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (10 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA)

incidence: ?/96*, conc. range: 400–77,200 µg/kg**, sample year: unknown, country: USA/Guatemala⁶⁶⁸, sa from Guatemala, *nixtamalized maize, **dry weight

incidence: 8/15, conc. range: 25–2,170 µg/kg, Ø conc.: 486 µg/kg, year: 1998, country: Colombia⁶⁷² (5 sa co-contaminated with FB₁ and FB₂, 3 sa contaminated solely with FB₁)

incidence: 12/12*, conc. range: 250–64,700 µg/kg, sample year: 1995, country: India⁷²⁰, *disease affected household

incidence: ?/6*, conc. range: 50–240 µg/kg, sample year: 1995, country: India⁷²⁰, *not disease affected household

incidence: 139/139*, conc. range: 10–100 µg/kg (30 sa), 101–500 µg/kg (42 sa), 501–1,000 µg/kg (28 sa), 1001–5,000 µg/kg (39 sa, maximum: 3,406 µg/kg), sample year: 1998/1999, country: UK⁷⁴⁵, sa from different countries, *nca

incidence: 81/103*, conc. range: 70–1,780 µg/kg, Ø conc.: 495 µg/kg, sample year: 2001, country: Nigeria⁷⁵⁹, *preharvest maize (55 sa co-contaminated with FB₁ and FB₂; only inaccurate information available)

incidence: 1/1*, conc.: 165 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana, *coarse maize (1 sa co-contaminated with FB₁, FB₂ and FB₃)

incidence: 1/1, conc.: 350 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana (1 sa co-contaminated with FB₁, FB₂ and FB₃)

incidence: 3/3, conc. range: 240–295 µg/kg, Ø conc.: 260 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Mozambique (3 sa co-contaminated with FB₁, FB₂ and FB₃)

incidence: 7/8, conc. range: 20–115 µg/kg, Ø conc.: 67.1 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Malawi (1 sa co-contaminated with FB₁ and FB₂, 6 sa contaminated solely with FB₁)

incidence: 1/2, conc.: 125 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zimbabwe (1 sa co-contaminated with FB₁ and FB₂)

incidence: 1/1, conc.: 780 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Kenya (1 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA)

incidence: 8/9, conc. range: 25–165 µg/kg, Ø conc.: 79.4 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Tanzania (1 sa co-contaminated with FB₁ and FB₂, 1 sa co-contaminated with FB₁ and ZEA, 6 sa contaminated solely with FB₁)

incidence: 1/1, conc.: 605 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Uganda (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 31/37, conc. range: 25–15,050 µg/kg, sample year: 1993, country: Venezuela⁷⁷⁷

incidence: 6/6, conc. range: 12,200–75,200 µg/kg, sample year: unknown, country: USA⁷⁷⁸, sa from Burundi

incidence: 23?/23?, conc. range: 68–6,555 µg/kg, Ø conc.: 1,357 µg/kg, sample year: 1992/1993, country: UK/Honduras⁷⁹¹, sa from Honduras

incidence: 81/121, conc. range: $\leq 5,420$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 480.6 $\mu\text{g}/\text{kg}$, sample year: 1989, country: South Africa⁷⁹⁸

incidence: 106/128, conc. range: $\leq 5,030$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 332.2 $\mu\text{g}/\text{kg}$, sample year: 1990, country: South Africa⁷⁹⁸

incidence: 10/36*, conc. range: ≤ 630 $\mu\text{g}/\text{kg}$, \emptyset conc.: 205 $\mu\text{g}/\text{kg}$, sample year: 1989, country: South Africa⁷⁹⁹, sa exported to Taiwan, *sa collected in South Africa before export

incidence: 14/32*, conc. range: ≤ 865 $\mu\text{g}/\text{kg}$, \emptyset conc.: 355 $\mu\text{g}/\text{kg}$, sample year: 1989, country: South Africa⁷⁹⁹, sa exported to Taiwan, *sa collected from the end-point distributors in Taiwan after export

incidence: 26/50* **, conc. range: 57–1,820 $\mu\text{g}/\text{kg}$, \emptyset conc.: 419 $\mu\text{g}/\text{kg}$, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Philippines, *for seeds, food and feed, **maize and ground maize

incidence: 19/27* **, conc. range: 63–18,800 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,580 $\mu\text{g}/\text{kg}$, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Thailand, *for seeds, food and feed, **maize and ground maize

incidence: 7/12* **, conc. range: 226–1,780 $\mu\text{g}/\text{kg}$, \emptyset conc.: 843 $\mu\text{g}/\text{kg}$, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Indonesia, *for seeds, food and feed, **maize and ground maize

incidence: 7/7*, conc. range: 280–33,450 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6,616 $\mu\text{g}/\text{kg}$, sample year: unknown, country: USA⁸³³, *ncac (5 sa co-contamination with FB₁ and FB₂, 2 sa contaminated solely with FB₁)

incidence: 7/7*, conc. range: 365–3,276 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,428 $\mu\text{g}/\text{kg}$, sample year: unknown, country: USA⁸³³, sa from China, *ncac (1 sa co-contaminated with FB₁, FB₂, and FB₃, 4 sa co-contaminated with FB₁ and FB₂, 2 sa contaminated solely with FB₁)

incidence: 222/292*, conc. range: 7.6–6,341.7 $\mu\text{g}/\text{kg}$, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries,

*includes sweetcorn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 13 sa co-contaminated with DON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with FB₁, FB₂, FB₃, OTA, and ZEA, 7 sa co-contaminated with DON, FB₁, FB₂, and FB₃, 1 sa co-contaminated with DON, FB₁, FB₂, and ZEA, 2 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, and FB₂, 3 sa co-contaminated with DON, FB₁, and FB₂, 2 sa co-contaminated with DON, FB₁, and ZEA, 33 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁, FB₂, and ZEA, 1 sa co-contaminated with FB₁, FB₃, and ZEA, 12 sa co-contaminated with DON and FB₁, 4 sa co-contaminated with FB₁ and FB₂, 5 sa co-contaminated with FB₁ and FB₃, 4 sa co-contaminated with FB₁ and OTA, 9 sa co-contaminated with FB₁ and ZEA, 121 sa contaminated solely with FB₁)

incidence: 230/259, conc. range: 100–25,500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,927 $\mu\text{g}/\text{kg}$, sample year: 2001/2002, country: China⁸⁶¹

incidence: 10/20, conc. range: $\leq 5,960$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,930 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Morocco⁸⁶⁶ (1 sa co-contaminated with FB₁, OTA, and ZEA, 2 sa co-contaminated with FB₁ and ZEA, 7 sa co-contaminated with FB₁ and OTA)

incidence: 32/52*, conc. range: $\leq 11,015$ $\mu\text{g}/\text{kg}$, sample year: 2000, country: Iran⁸⁶⁷, *for food and feed

incidence: 4/4*, conc. range: 680.8–1,652.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,193.9 $\mu\text{g}/\text{kg}$, sample year: 2001, country: USA⁸⁶⁹, *raw corn

incidence: 4/4*, conc. range: 181.9–440.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 311 $\mu\text{g}/\text{kg}$,

sample year: 2001, country: USA⁸⁶⁹,
*cooked corn

incidence: 4/4*, conc. range: 138.8–
195.6 µg/kg, Ø conc.: 167.3 µg/kg,
sample year: 2001, country: USA⁸⁶⁹,
*steeped corn

incidence: 17/17*, conc. range: 10,400–
75,000 µg/kg, Ø conc.: 41,800 µg/kg,
sample year: 1998, country: USA⁸⁷⁶,
*conventional hybrids

incidence: 4/4*, conc. range: 25,300–
42,400 µg/kg, Ø conc.: 34,400 µg/kg,
sample year: 1998, country: USA⁸⁷⁶, *Bt
hybrids

incidence: 133/182, conc. range: 10–760 µg/
kg, sample year: 2005, country: Nigeria/
Germany⁸⁸¹, sa from Nigeria

incidence: 2/127*, conc. range: 16.8–36 µg/
kg, Ø conc.: 26.4 µg/kg, sample year:
2004–2007, country: Japan⁹⁰⁰, *frozen or
canned corn

incidence: 49/57*, conc. range: ≤354 µg/
kg, Ø conc.: 67.5 µg/kg, sample year:
2004–2007, country: Japan⁹⁰⁰, *popcorn
grain

incidence: 4/30*, Ø conc.: 43.19 µg/kg**,
sample year: 2001–2003, country: Spain⁹⁰⁵,
*of all sa, **conventional

incidence: 3/30*, Ø conc.: 35.36 µg/kg**,
sample year: 2001–2003, country: Spain⁹⁰⁵,
*of all sa, **organic

incidence: 14/14, conc. range: 54–5,960 µg/
kg, Ø conc.: 1,540 µg/kg, sample year:
1999, country: Argentina⁹⁵⁵

incidence: 3?/8*, conc. range: ≤1,310 µg/
kg, sample year: 2003–2005, country:
Brazil⁹⁵⁸, *sweet corn, frozen

incidence: 3?/15*, conc. range: ≤1,440 µg/
kg, sample year: 2003–2005, country:
Brazil⁹⁵⁸, *sweet corn, canned

incidence: 17/40, conc. range: 30–2,720 µg/
kg, Ø conc.: 670 µg/kg, sample year: 2001,
country: Bulgaria⁹⁸⁰

incidence: 2/3, conc. range: 40–50 µg/kg,
Ø conc.: 45 µg/kg, sample year: unknown,
country: Japan¹⁰²⁵

incidence: 15/15, conc. range: 196.8–
1,377.6 µg/kg, Ø conc.: 459.5 µg/kg, sample
year: 2002, country: Croatia¹⁰⁶⁸

incidence: 9?/17, Ø conc.: 442.6 µg/kg,
sample year: 2005/2006, country:
Tunisia¹⁰⁹⁷

incidence: 27/39*, conc. range:
66–3,191 µg/kg, Ø conc.: 730.2 µg/kg,
sample year: unknown, country: Japan/
China¹¹⁰⁰, sa from China and Vietnam,
*ncac (8 sa co-contaminated with FB₁,
FB₂, and FB₃, 4 sa co-contaminated with
FB₁ and FB₂, 15 sa contaminated solely
with FB₁)

incidence: 281/282, conc. range:
3–71,121 µg/kg, sample year: 2005,
country: China¹¹¹⁶

incidence: 4/24*, conc. range: 22.2–
52.7 µg/kg, Ø conc.: 40.8 µg/kg, sample
year: 1997, country: USA¹¹⁴⁸, *corn and
corn-based products; for detailed
information please see
the article

incidence: 24/26*, conc. range: ≤5,520 µg/
kg, sample year: 2003, country: South
Africa¹¹⁶⁵, *good maize

incidence: 18/18*, conc. range:
12–41,700 µg/kg, sample year: 2003,
country: South Africa¹¹⁶⁵, *moldy
maize

incidence: 133/255*, conc. range:
≤15,070 µg/kg, sample year: 2010, country:
China¹¹⁷¹, *for food and feed

incidence: 24/67*, conc. range:
71–12,616 µg/kg, sample year: 2006,
country: Tanzania/Belgium¹¹⁸⁶, sa from
Tanzania, *freshly harvested maize

incidence: 8/55*, conc. range: 24–1,349 µg/
kg, sample year: 2006, country: Tanzania/
Belgium¹¹⁸⁶, sa from Tanzania, *stored
maize

incidence: 4/4*, conc. range: 1,960–
4,515 µg/kg, Ø conc.: 3,128.8 µg/kg,
sample year: unknown, country: South
Africa¹¹⁸⁹, sa from Brazil, *ncac (4 sa
co-contaminated with FB₁, FB₂, FB₃, and
epi-FB₃)

incidence: 3/3* **, conc. range: 1,370–2,980 µg/kg, Ø conc.: 2,233.3 µg/kg, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **home-grown, good corn (3 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 5/5* **, conc. range: 2,665–26,240 µg/kg, Ø conc.: 10,357 µg/kg, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **home-grown, moldy corn (5 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 62?/120*, conc. range: ≤6,125 µg/kg, sample year: 2005/2006, country: Tanzania/Belgium¹²⁰⁴, sa from Tanzania, *home grown maize

incidence: 6/9*, conc. range: ≤871 µg/kg, sample year: 2005, country: Portugal¹²⁵⁰, *yellow maize

incidence: 1/2*, conc.: 725 µg/kg, sample year: 2005, country: Portugal¹²⁵⁰, *white maize

incidence: 2/11*, conc. range: ≤523 µg/kg, sample year: 2005, country: Portugal¹²⁵⁰, *sweet maize

incidence: 18/19, conc. range: 111–3,230 µg/kg, Ø conc.: 930.1 µg/kg, sample year: 2007, country: Bulgaria¹²⁵⁵ (17 sa co-contaminated with FB₁ and FB₂, 1 sa contaminated solely with FB₁)

incidence: 36/41*, conc. range: 50–130 µg/kg (17 sa), 131–400 µg/kg (19 sa), sample year: unknown, country: Portugal¹²⁵⁶, *sweet corn

incidence: 30/52*, conc. range: 47.0–3,347.1 µg/kg, sample year: 1999, country: Argentina¹³¹³, *ncac

incidence: 196/200*, conc. range: 15–9,670 µg/kg, sample year: 2005, country: Brazil¹³⁶³, *ncac

incidence: 3/12*, conc. range: 121.98–268.12 µg/kg, Ø conc.: 200.84 µg/kg, sample year: unknown, country: South Korea¹⁴⁰⁶, *dried corn

incidence: 3/3*, conc. range: 400–4,400 µg/kg, Ø conc.: 2,566.7 µg/kg, sample year:

unknown, country: South Africa¹⁴¹², *commercial corn (3 sa co-contaminated with FB₁ and FB₂)

incidence: 10/11*, conc. range: 10–26,900 µg/kg, Ø conc.: 4,729 µg/kg, sample year: 1996, country: Slovakia/Italy¹⁴³⁵, sa from Slovakia, *ncac (1 sa co-contaminated with BEA, FB₁, FB₂, and FP, 5 sa co-contaminated with FB₁, FB₂ and FP, 4 sa co-contaminated with FB₁ and FB₂)

incidence: 11/11*, conc. range: 10–12,100 µg/kg, Ø conc.: 2,645.5 µg/kg, sample year: 1998, country: Slovakia/Italy¹⁴³⁵, sa from Slovakia, *ncac (1 sa co-contaminated with FB₁, FB₂, and FP, 10 sa co-contaminated with FB₁ and FB₂)

incidence: 100/108, conc. range: 200–37,000 µg/kg, sample year: unknown, country: China¹⁴³⁷ (100 sa co-contaminated with AFB₁ and FB₁)

incidence: 3/13, conc. range: 500–1,150 µg/kg, Ø conc.: 750 µg/kg, sample year: 2004/2005, country: France¹⁴⁵⁶, sa from Vietnam (3 sa co-contaminated with AFB₁ and FB₁)

incidence: 9/98*, conc. range: 1,000–1,900 µg/kg (6 sa), 2,000–2,900 µg/kg (3 sa), sample year: 1993, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 1/81*, conc.: 1,000–1,900 µg/kg, sample year: 1994, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 6/64*, conc. range: 1,000–1,900 µg/kg (3 sa), 2,000–2,900 µg/kg (2 sa), >2,900 µg/kg (1 sa), sample year: 1995, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 8?/135*, conc. range: 1,000–1,900 µg/kg (5 sa), 2,000–2,900 µg/kg (1 sa), sample year: 1996, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 84/199*, conc. range: 1,000–1,900 µg/kg (60 sa), 2,000–2,900 µg/kg (24 sa), sample year: 1997, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 37/135*, conc. range: 1,000–1,900 µg/kg (18 sa), 2,000–2,900 µg/kg (18 sa), >2,900 µg/kg (1 sa), sample year: 1998, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 48/86*, conc. range: 1,000–1,900 µg/kg (24 sa), 2,000–2,900 µg/kg (16 sa), >2,900 µg/kg (8 sa), sample year: 1999, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 10/58*, conc. range: 1,000–1,900 µg/kg (6 sa), 2,000–2,900 µg/kg (4 sa), sample year: 2000, country: Canada¹⁴⁷⁴, *for food and feed

incidence: 8/15, conc. range: 19–476 µg/kg, Ø conc.: 191 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, and T-2, 2 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and FB₂, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and ZEA)

incidence: 49/54, conc. range: 101–53,863 µg/kg, Ø conc.: 8,189 µg/kg, sample year: unknown, country: South Africa¹⁴⁸³

incidence: 21/26, conc. range: 22.5–1,343 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 12/13, conc. range: 159–7,615 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 110/110*, conc. range: 1,150–43,800 µg/kg, Ø conc.: 6,790 µg/kg, sample year: 1997/1998, country: Brazil¹⁵¹⁸, *ncac (110 sa co-contaminated with FB₁ and FB₂, 60 sa co-contaminated with AFB₁, 57

sa co-contaminated with AFB₂, 12 sa co-contaminated with AFG₁, 8 sa co-contaminated with AFG₂)

incidence: 28/65, conc. range: 210–1,800 µg/kg, Ø conc.: 575 µg/kg, sample year: 2005, country: China¹⁶⁵³

incidence: 4/4*, conc. range: 20–1,680 µg/kg, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Congo, *white maize

incidence: 4/4*, conc. range: 50–9,620 µg/kg, sample year: unknown, country: Nigeria/Benin/Tanzania¹⁶⁶⁰, sa from Congo, *mixed maize

incidence: 3/4*, conc. range: ≤415 µg/kg, Ø conc.: 324 µg/kg, sample year: 2001/2002, country: Iran/South Africa¹⁶⁶⁵, sa from Uruguay, *for food and feed

incidence: 2/3*, conc. range: ≤235 µg/kg, Ø conc.: 174 µg/kg, sample year: 2001/2002, country: Iran/South Africa¹⁶⁶⁵, sa from Argentina, *for food and feed

incidence: 6/10*, conc. range: ≤325 µg/kg, Ø conc.: 190 µg/kg, sample year: 2001/2002, country: Iran/South Africa¹⁶⁶⁵, sa from USA, *for food and feed

incidence: 3/6*, conc. range: ≤356 µg/kg, Ø conc.: 200 µg/kg, sample year: 2001/2002, country: Iran/South Africa¹⁶⁶⁵, sa from Brazil, *for food and feed

HYDROLYZED FUMONISIN B₁

incidence: 1/1*, conc.: pr, sample year: 1990, country: USA³⁶⁹, *canned yellow corn (1 sa co-contaminated with FB₁ and HFB₁)

FUMONISIN B₂

incidence: 50/50*, conc. range: 40–9,950 µg/kg, Ø conc.: 812 µg/kg, sample year: 1993/1994, country: Argentina/Italy¹⁶⁷, sa from Argentina, *ncac (50 sa co-contaminated with FB₁ and FB₂)

incidence: 11/14, conc. range: 60–1,375 µg/kg, Ø conc.: 228.5 µg/kg, sample year:

unknown, country: Denmark²⁰⁶, sa from Ghana (6 sa co-contaminated with FB₁, FB₂, and FB₃, 5 sa co-contaminated with FB₁ and FB₂)

incidence: 10/15, conc. range: 10–772 µg/kg, Ø conc.: 252.9 µg/kg, sample year:

unknown, country: Denmark²⁰⁶, sa from Ghana (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, FB₁, and FB₂, 1 sa co-contaminated with AFB₁, FB₁, and FB₂, 1 sa co-contaminated with FB₁, FB₂, and FB₃, 3 sa co-contaminated with FB₁ and FB₂)

incidence: 1/6*, conc.: 319 µg/kg, sample year: 1997/1998, country: Argentina²⁰⁸, *yellow maize

incidence: 6/11*, conc. range: ≤210 µg/kg, Ø conc.: 150 µg/kg, sample year: 1999, country: Brazil²¹⁵, *canned sweet maize

incidence: 8/11*, conc. range: ≤640 µg/kg, Ø conc.: 210 µg/kg, sample year: 1999, country: Brazil²¹⁵, *degerminated maize

incidence: 29/30*, conc. range: 140–3,060 µg/kg, Ø conc.: 1,144 µg/kg, sample year: 1994/1995, country: Argentina²³⁶, *ncac (28 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with FB₁, FB₂, and ZEA)

incidence: 3/49*, conc. range: 68.4–3,084 µg/kg, Ø conc.: 1,087.2 µg/kg, sample year: 2002, country: Croatia²⁴⁰, *ncac

incidence: 20/34*, conc. range: 50–4,350 µg/kg, Ø conc.: 696 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 8/20*, conc. range: 89–1,220 µg/kg, Ø conc.: 591 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 11/20, conc. range: 56–890 µg/kg, Ø conc.: 257 µg/kg, sample year: 1998,

country: Japan/China³⁰⁷, sa from China (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 3 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with AFB₁, FB₁, and FB₂, 1 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁ and FB₂)

incidence: 7/20, conc. range: 54–104 µg/kg, Ø conc.: 76 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China

incidence: 138/150*, conc. range: 80–6,920 µg/kg, sample year: 1995/1996, country: Brazil/Japan³²⁶, sa from Brazil, *ncac

incidence: 2/2*, conc. range: 114–137 µg/kg, Ø conc.: 125.5 µg/kg, sample year: 1989, country: China³⁴², *powdered corn (1 sa co-contaminated with DON, 15-AcDON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, FB₂, FB₃, NIV and ZEA)

incidence: 33/57*, conc. range: 50–5,240 µg/kg, sample year: 1999, country: Brazil³⁴⁹, *ncac

incidence: 20/20*, conc. range: <50–1,050 µg/kg, sample year: unknown, country: USA³⁵⁰, *ncac (20 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 23/23*, conc. range: 380–8,600 µg/kg, Ø conc.: 1,860 µg/kg, sample year: 1997/1998, country: Brazil³⁵⁴, *ncac (23 sa co-contaminated with FB₁ and FB₂)

incidence: 22/55*, conc. range: 200–5,900 µg/kg, Ø conc.: 1,900 µg/kg, sample year: 1994–1996, country: Spain³⁵⁵, *ncac (22 sa co-contaminated with FB₁ and FB₂)

incidence: 13/26* **, conc. range: 10–520 µg/kg, Ø conc.: 143.1 µg/kg, sample year: 1989–1991, country: Italy/France/Norway³⁶⁰, sa from Italy, *ncac, **inbred lines (13 sa co-contaminated with FB₁ and FB₂)

incidence: 8/9* **, conc. range: 250–4,450 µg/kg, Ø conc.: 1,211.3 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Portugal, *ncac, **hybrids (8 sa co-contaminated with FB₁ and FB₂)

incidence: 4/19* **, conc. range: 10 µg/kg, Ø conc.: 10 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Croatia, *ncac, **hybrids (4 sa co-contaminated with FB₁ and FB₂)

incidence: 1/7* **, conc.: 10 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Poland, *ncac, **hybrids (1 sa co-contaminated with FB₁ and FB₂)

incidence: 1/6* **, conc. range: 10 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Romania, *ncac, **hybrids (1 sa co-contaminated with FB₁ and FB₂)

incidence: 7/9* **, conc. range: 20–680 µg/kg, Ø conc.: 147.1 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Benin, *ncac, **hybrids (7 sa co-contaminated with FB₁ and FB₂)

incidence: 15/20* **, conc. range: 10–290 µg/kg, Ø conc.: 50.7 µg/kg, sample year: 1992, country: Italy/France/Norway³⁶⁰, sa from Zambia, *ncac, **hybrids (15 sa co-contaminated with FB₁ and FB₂)

incidence: 7/7*, conc. range: 30–1,480 µg/kg, Ø conc.: 838.6 µg/kg, sample year: 1992/1993, country: Italy³⁶², *ncac

incidence: 6/6*, conc. range: 110–740 µg/kg, Ø conc. 397 µg/kg, sample year: 1992/1993, country: Italy³⁶², *puffed corn

incidence: 46/48*, conc. range: 1,200–19,130 µg/kg, Ø conc.: 4,822.8 µg/kg, sample year: 1990/1991, country: Brazil³⁶⁷, *for food and feed

incidence: 190/195* **, conc. range: 1,960–29,160 µg/kg, Ø conc.: 7,600 µg/kg, sample year: unknown, country: Brazil³⁸²,

*ncac, **hybrids Br 201, C 125, and Cx 322 freshly harvested or stored

incidence: 1/1*, conc.: 1,440 µg/kg, sample year: unknown, country: Japan³⁸⁷, sa imported?, *ncac (1 sa co-contaminated with FB₁ and FB₂)

incidence: 3/12*, conc. range: ≤150 µg/kg, Ø conc.: 83 µg/kg, sample year: 1985, country: South Africa⁴⁰², *good corn, low-EC area

incidence: 10/12*, conc. range: ≤2,250 µg/kg, Ø conc.: 610 µg/kg, sample year: 1985, country: South Africa⁴⁰², *good corn, high-EC area

incidence: 11/11*, conc. range: 150–6,750 µg/kg, Ø conc.: 2,500 µg/kg, sample year: 1985, country: South Africa⁴⁰², *moldy corn intended for beer brewing or animal feed, low-EC area

incidence: 12/12*, conc. range: 900–16,300 µg/kg, Ø conc.: 7,550 µg/kg, sample year: 1985, country: South Africa⁴⁰², *moldy corn intended for beer brewing or animal feed, high-EC area

incidence: 2/8*, conc. range: ≤970 µg/kg, Ø conc.: 515 µg/kg, sample year: 1989, country: South Africa⁴⁰², *good corn, low-EC area

incidence: 5/6*, conc. range: ≤1,320 µg/kg, Ø conc.: 508 µg/kg, sample year: 1989, country: South Africa⁴⁰², *good corn, high-EC area

incidence: 6/7*, conc. range: ≤3,700 µg/kg, Ø conc.: 1,277 µg/kg, sample year: 1989, country: South Africa⁴⁰², *moldy corn, low-EC area

incidence: 6/6*, conc. range: 750–22,960 µg/kg, Ø conc.: 13,680 µg/kg, sample year: 1989, country: South Africa⁴⁰², *moldy corn, high-EC area

incidence: 5/5* **, conc. range: 30–4,020 µg/kg, Ø conc.: 918 µg/kg, sample year: 1990/1991, country: USA⁴¹⁰, sa from Canada and USA, *ncac, **included 1 white corn sa (5 sa co-contaminated with FB₁ and FB₂)

incidence: 1/1*, conc.: 20 µg/kg, sample year: 1991, country: USA⁴¹⁰, *hominy corn (1 sa co-contaminated with FB₁ and FB₂)

incidence: 41/47*, conc. range: <50–500 µg/kg, Ø conc.: 108.3 µg/kg, sample year: 1992, country: South Africa⁴¹¹, sa imported from Argentina, *ncac

incidence: 79/79*, conc. range: 300–1,200 µg/kg, Ø conc.: 668.5 µg/kg, sample year: 1992, country: South Africa⁴¹¹, sa imported from USA, *ncac

incidence: 17/17*, conc. range: 325–2,680 µg/kg, Ø conc.: 1,137.4 µg/kg, sample year: 1991, country: South Africa/Argentina⁴¹², sa from Argentina, *ncac (17 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 6/7, conc. range: 70–460 µg/kg, sample year: 1989, country: South Africa⁴¹³, sa from USA

incidence: 1/1*, conc.: 1,092 µg/kg, sample year: unknown, country: USA⁴¹⁴, *ncac (1 sa co-contaminated with FB₁ and FB₂)

incidence: 2/110, conc. range: 222–255 µg/kg, Ø conc.: 238.5 µg/kg, sample year: 1996/1997, country: Taiwan⁴¹⁷

incidence: 6/24*, conc. range: ≤658 µg/kg, Ø conc.: 64.5 µg/kg, sample year: unknown, country: Taiwan⁴¹⁸, *sweet canned maize

incidence: 3/27*, conc. range: 298–550 µg/kg, Ø conc.: 448 µg/kg, sample year: 1989, country: Japan⁴²², sa from China, *high-EC area

incidence: 2/20*, conc. range: 213–447 µg/kg, Ø conc.: 330 µg/kg, sample year: 1989, country: Japan⁴²², sa from China, *low-EC area

incidence: 8/16, conc. range: tr–376 µg/kg, sample year: 1995, country: Japan/Indonesia⁴²⁶, sa from Indonesia (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, and FB₂, 2 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with

AFB₁, FB₁, and FB₂, 1 sa co-contaminated with FB₁ and FB₂)

incidence: 4/16*, conc. range: 600–1,000 µg/kg, Ø conc.: 800 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *raw corn

incidence: 31/36*, conc. range: 70–48,400 µg/kg, Ø conc.: 7,500 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly moldy

incidence: 8/35*, conc. range: 100–5,400 µg/kg, Ø conc.: 1,100 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy (5 sa co-contaminated with FB₁, FB₂, and FB₃; no further information available)

incidence: 2/8*, conc. range: 50–75 µg/kg, Ø conc.: 63 µg/kg, sample year: 1998, country: South Africa/Iran⁵⁵³, sa from Iran, *corn ears (2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 5/15*, conc. range: 21–833 µg/kg, Ø conc.: 307 µg/kg, sample year: 1998, country: Colombia⁶⁷² (5 sa co-contaminated with FB₁ and FB₂)

incidence: 68/103*, conc. range: 53–230 µg/kg, Ø conc.: 114 µg/kg, sample year: 2001, country: Nigeria⁷⁵⁹, *preharvest maize (55 sa co-contaminated with FB₁ and FB₂; only inaccurate information available)

incidence: 1/1*, conc.: 50 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana, *coarse maize (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 1/1, conc.: 105 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 3/3, conc. range: 75–110 µg/kg, Ø conc.: 90 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Mozambique (3 sa co-contaminated with FB₁, FB₂ and FB₃)

incidence: 1/8, conc.: 30 µg/kg, sample year: unknown, country: South Africa⁷⁶³,

sa from Malawi (1 sa co-contaminated with FB₁ and FB₂)

incidence: 1/2, conc.: 40 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zimbabwe (1 sa co-contaminated with FB₁ and FB₂)

incidence: 1/1, conc.: 275 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Kenya (1 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA)

incidence: 1/9, conc.: 60 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Tanzania (1 sa co-contaminated with FB₁ and FB₂)

incidence: 1/1, conc.: 155 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Uganda (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 49/121, conc. range: ≤1,600 µg/kg, Ø conc.: 253.8 µg/kg, sample year: 1989, country: South Africa⁷⁹⁸

incidence: 65/128, conc. range: ≤1,670 µg/kg, Ø conc.: 216.6 µg/kg, sample year: 1990, country: South Africa⁷⁹⁸

incidence: 6/36*, conc. range: ≤250 µg/kg, Ø conc.: 148 µg/kg, sample year: 1989, country: South Africa⁷⁹⁹, sa exported to Taiwan, *sa collected in South Africa before export

incidence: 4/32, conc. range: ≤120 µg/kg, Ø conc.: 101 µg/kg, sample year: 1989, country: South Africa⁷⁹⁹, sa exported to Taiwan, *sa collected from the end-point distributors in Taiwan after export

incidence: 6/50* **, conc. range: 58–1,210 µg/kg, Ø conc.: 286 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Philippines, *for seeds, food and feed, **maize and ground maize

incidence: 12/27* **, conc. range: 50–1,400 µg/kg, Ø conc.: 251 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Thailand, *for seeds, food and feed, **maize and ground maize

incidence: 3/12* **, conc. range: 231–556 µg/kg, Ø conc.: 442 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Indonesia, *for seeds, food and feed, **maize and ground maize

incidence: 5/7*, conc. range: 32–4,200 µg/kg, Ø conc.: 1,167 µg/kg, sample year: unknown, country: USA⁸³³, *ncac (5 sa co-contaminated with FB₁ and FB₂)

incidence: 4/7*, conc. range: 96–2,834 µg/kg, Ø conc.: 1,223 µg/kg, sample year: unknown, country: USA⁸³³, sa from China, *ncac (1 sa co-contaminated with FB₁, FB₂, and FB₃, 3 sa co-contaminated with FB₁ and FB₂)

incidence: 65/292*, conc. range: 6.3–1,415.5 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries, *includes sweetcorn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 13 sa co-contaminated with DON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with FB₁, FB₂, FB₃, OTA, and ZEA, 7 sa co-contaminated with DON, FB₁, FB₂, and FB₃, 1 sa co-contaminated with DON, FB₁, FB₂, and ZEA, 2 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, and FB₂, 33 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁, FB₂, and ZEA, 4 sa co-contaminated with FB₁ and FB₂,

1 sa co-contaminated with FB₂ and FB₃)

incidence: 18/52*, conc. range: ≤3,364 µg/kg, sample year: 2000, country: Iran⁸⁶⁷, *for food and feed

incidence: 14/17*, conc. range: 1,000–10,500 µg/kg, Ø conc.: 4,571 µg/kg, sample year: 1998, country: USA⁸⁷⁶, *conventional hybrids

incidence: 4/4*, conc. range: 1,000–9,000 µg/kg, Ø conc.: 5,200 µg/kg, sample year: 1998, country: USA⁸⁷⁶, *Bt hybrids

incidence: 1/127*, conc.: 14.8 µg/kg,
sample year: 2004–2007, country: Japan⁹⁰⁰,
*frozen or canned corn

incidence: 44/57*, conc. range: ≤94.0 µg/
kg, Ø conc.: 17.9 µg/kg, sample year:
2004–2007, country: Japan⁹⁰⁰, *popcorn
grain

incidence: 3/30*, Ø conc.: 21.92 µg/kg**,
sample year: 2001–2003, country: Spain⁹⁰⁵,
*conventional, **of all sa

incidence: 2/30*, Ø conc.: 18.78 µg/kg**,
sample year: 2001–2003, country: Spain⁹⁰⁵,
*organic, **of all sa

incidence: 14/14, conc. range: 17–3,080 µg/
kg, Ø conc.: 716 µg/kg, sample year: 1999,
country: Argentina⁹⁵⁵

incidence: 2/8*, conc. range: tr, sample
year: 2003–2005, country: Brazil⁹⁵⁸, *sweet
corn, frozen

incidence: 1/3, conc.: 10 µg/kg, sample
year: unknown, country: Japan¹⁰²⁵

incidence: 2/15, conc. range: 68.4–
3,084.0 µg/kg, Ø conc.: 1,576.2 µg/kg,
sample year: 2002, country: Croatia¹⁰⁶⁸

incidence: 9?/17, Ø conc.: 293.3 µg/kg,
sample year: 2005/2006, country:
Tunisia¹⁰⁹⁷

incidence: 12/39*, conc. range:
118–1,187 µg/kg, Ø conc.: 333.4 µg/kg,
sample year: unknown, country: Japan/
China¹¹⁰⁰, sa from China and Vietnam,
*ncac (8 sa co-contaminated with FB₁,
FB₂, and FB₃, 4 sa co-contaminated with
FB₁ and FB₂)

incidence: 23/26*, conc. range: ≤1,650 µg/
kg, sample year: 2003, country: South
Africa¹¹⁶⁵, *good maize

incidence: 18/18*, conc. range:
10–11,800 µg/kg, sample year: 2003,
country: South Africa¹¹⁶⁵, *moldy maize

incidence: 80/255*, conc. range:
≤4,260 µg/kg, sample year: 2010, country:
China¹¹⁷¹, *for food and feed

incidence: 23/67*, conc. range:
21–9,050 µg/kg, sample year: 2006,

country: Tanzania/Belgium¹¹⁸⁶, sa from
Tanzania, *freshly harvested maize

incidence: 4/55*, conc. range: 40–576 µg/
kg, sample year: 2006, country: Tanzania/
Belgium¹¹⁸⁶, sa from Tanzania, *stored
maize

incidence: 4/4*, conc. range: 255–1,985 µg/
kg, Ø conc.: 965 µg/kg, sample year:
unknown, country: South Africa¹¹⁸⁹, sa
from Brazil, *ncac (4 sa co-contaminated
with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 3/3* **, conc. range: 465–
780 µg/kg, Ø conc.: 595 µg/kg, sample
year: unknown, country: South Africa¹¹⁸⁹,
*ncac, **home-grown, good corn (3 sa
co-contaminated with FB₁, FB₂, FB₃,
and *epi*-FB₃)

incidence: 5/5* **, conc. range: 830–
10,070 µg/kg, Ø conc.: 4,367 µg/kg, sample
year: unknown, country: South Africa¹¹⁸⁹,
*ncac, **home-grown, moldy corn (5 sa
co-contaminated with FB₁, FB₂, FB₃, and
epi-FB₃)

incidence: 62?/120*, conc. range:
≤4,923 µg/kg, sample year: 2005/2006,
country: Tanzania/Belgium¹²⁰⁴, sa from
Tanzania, *home grown maize

incidence: 5/9*, conc. range: ≤272 µg/kg,
sample year: 2005, country: Portugal¹²⁵⁰,
*yellow maize

incidence: 2/2*, conc. range: 113–437 µg/
kg, Ø conc.: 275 µg/kg, sample year: 2005,
country: Portugal¹²⁵⁰, *white maize

incidence: 2/11*, conc. range: ≤523 µg/kg,
sample year: 2005, country: Portugal¹²⁵⁰,
*sweet maize

incidence: 17/19, conc. range: 138–816 µg/
kg, Ø conc.: 296.1 µg/kg, sample year:
2007, country: Bulgaria¹²⁵⁵ (17 sa
co-contaminated with FB₁ and FB₂)

incidence: 17/52*, conc. range: 23.0–
537.4 µg/kg, sample year: 1999, country:
Argentina¹³¹³, *ncac

incidence: 149/200*, conc. range:
15–3,160 µg/kg, sample year: 2005,
country: Brazil¹³⁶³, *ncac

incidence: 3/3*, conc. range: 150–1,300 µg/kg, Ø conc.: 833.3 µg/kg, sample year: unknown, country: South Africa¹⁴¹²,

*commercial corn (3 sa co-contaminated with FB₁ and FB₂)

incidence: 11/11*, conc. range: 5–5,100 µg/kg, Ø conc.: 479.5 µg/kg, sample year: 1996, country: Slovakia/Italy¹⁴³⁵, sa from Slovakia,

*ncac (1 sa co-contaminated with BEA, FB₁, FB₂, and FP, 5 sa co-contaminated with FB₁, FB₂, and FP, 4 sa co-contaminated with FB₁ and FB₂, 1 sa co-contaminated with FB₁ and FP)

incidence: 11/11*, conc. range: 10–6,350 µg/kg, Ø conc.: 1,043.6 µg/kg, sample year: 1998, country: Slovakia/Italy¹⁴³⁵, sa from Slovakia, *ncac (1 sa co-contaminated with FB₁, FB₂, and FP, 10 sa co-contaminated with FB₁ and FB₂)

incidence: 6/15, conc. range: 17–110 µg/kg, Ø conc.: 52.3 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, and T-2, 2 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and FB₂)

incidence: 18/26, conc. range: 11.3–589 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 12/13, conc. range: 27.7–3,061 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 110/110*, conc. range: 80–11,650 µg/kg, Ø conc.: 2,000 µg/kg, sample year: 1997/1998, country: Brazil¹⁵¹⁸, *ncac (110 sa co-contaminated with FB₁ and FB₂, 60 sa co-contaminated with AFB₁, 57 sa co-contaminated with

AFB₂, 12 sa co-contaminated with AFG₁, 8 sa co-contaminated with AFG₂)

FUMONISIN B₃

incidence: 6/14, conc. range: 68–226 µg/kg, Ø conc.: 114.5 µg/kg, country: Denmark²⁰⁶, sa from Ghana (6 sa

co-contaminated with FB₁, FB₂, and FB₃)

incidence: 4/15, conc. range: 72–224 µg/kg, Ø conc.: 151.8 µg/kg, sample year: unknown, country: Denmark²⁰⁶, sa from Ghana (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 28/30*, conc. range: 90–1,070 µg/kg, Ø conc.: 432 µg/kg, sample year: 1994/1995, country: Argentina²³⁶, *ncac (28 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA)

incidence: 15/34*, conc. range: 55–1,660 µg/kg, Ø conc.: 382 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 7/20*, conc. range: 89–576 µg/kg, Ø conc.: 310 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 7/20, conc. range: 53–385 µg/kg, Ø conc.: 186 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 3 sa

co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 1/20, conc.: 70 µg/kg, sample year: 1998, country: Japan/China³⁰⁷, sa from China

incidence: 2/2*, conc. range: 32–59 µg/kg, Ø conc.: 45.5 µg/kg, sample year: 1989, country: China³⁴², *powdered corn (1 sa co-contaminated with DON, 15-AcDON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, FB₂, FB₃, NIV and ZEA)

incidence: 20/20*, conc. range: <50–420 µg/kg, sample year: unknown, country: USA³⁵⁰, *ncac (20 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 28/47*, conc. range: <50–500 µg/kg, Ø conc.: 78.2 µg/kg, sample year: 1992, country: South Africa⁴¹¹, sa from Argentina, *ncac

incidence: 79/79*, conc. range: 80–600 µg/kg, Ø conc.: 253.9 µg/kg, sample year: 1992, country: South Africa⁴¹¹, sa from USA, *ncac

incidence: 17/17*, conc. range: 110–855 µg/kg, Ø conc.: 371.5 µg/kg, sample year: 1991, country: South Africa/Argentina⁴¹², sa from Argentina, *ncac (17 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 4/16, conc. range: 57–222 µg/kg, Ø conc.: 108 µg/kg, sample year: 1995, country: Japan/Indonesia⁴²⁶, sa from Indonesia (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 2 sa co-contaminated with AFB₁, AFB₂, FB₁, FB₂, and FB₃)

incidence: 1/16*, conc.: 500 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *raw corn

incidence: 31/36*, conc. range: 50–10,600 µg/kg, Ø conc.: 6,300 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly moldy

incidence: 7/35*, conc. range: 50–500 µg/kg, Ø conc.: 300 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy (5 sa co-contaminated with FB₁, FB₂, and FB₃; no further information available)

incidence: 2/8*, conc. range: 50–75 µg/kg, Ø conc.: 63 µg/kg, sample year: 1998, country: South Africa/Iran⁵⁵³, sa from Iran, *corn ears (2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 1/1*, conc.: 40 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana, *coarse maize (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 1/1, conc.: 70 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 3/3, conc. range: 25–50 µg/kg, Ø conc.: 40 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Mozambique (3 sa co-contaminated with FB₁, FB₂ and FB₃)

incidence: 1/1, conc.: 130 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Kenya (1 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA)

incidence: 1/1, conc.: 85 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Uganda (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 47/128, conc. range: ≤400 µg/kg, Ø conc.: 82.6 µg/kg, sample year: 1990, country: South Africa⁷⁹⁸

incidence: 2/7*, conc. range: 230–545 µg/kg, Ø conc.: 388 µg/kg, sample year: unknown, country: USA⁸³³, sa from China, *ncac (1 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁ and FB₃)

incidence: 68/292*, conc. range: 5.5–600.8 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries, *includes sweetcorn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, FB₁, FB₂, and FB₃, 13 sa co-contaminated with DON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with FB₁, FB₂, FB₃, OTA, and ZEA, 7 sa co-contaminated with DON, FB₁, FB₂, and FB₃, 2 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, and ZEA, 33 sa co-contaminated with FB₁, FB₂, and FB₃, 2 sa co-contaminated with DON, FB₁, and FB₃, 1 sa co-contaminated with FB₁, FB₃, and ZEA, 6 sa co-contaminated with FB₁ and FB₃, 1 sa co-contaminated with FB₂ and FB₃)

incidence: 16/52*, conc. range: ≤ 900 $\mu\text{g}/\text{kg}$, sample year: 2000, country: Iran⁸⁶⁷, *for food and feed

incidence: 40/57*, conc. range: ≤ 64.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 12.4 $\mu\text{g}/\text{kg}$, sample year: 2004–2007, country: Japan⁹⁰⁰, *popcorn grain

incidence: 14/14, conc. range: 8–669 $\mu\text{g}/\text{kg}$, \emptyset conc.: 152 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Argentina⁹⁵⁵

incidence: 8/39*, conc. range: 139–291 $\mu\text{g}/\text{kg}$, \emptyset conc.: 218.1 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan/China¹¹⁰⁰, sa from China and Vietnam, *ncac (8 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 8/26*, conc. range: ≤ 262 $\mu\text{g}/\text{kg}$, sample year: 2003, country: South Africa¹¹⁶⁵, *good maize

incidence: 16/18*, conc. range: $\leq 1,810$ $\mu\text{g}/\text{kg}$, sample year: 2003, country: South Africa¹¹⁶⁵, *moldy maize

incidence: 40/67*, conc. range: 23–2,039 $\mu\text{g}/\text{kg}$, sample year: 2006, country: Tanzania/Belgium¹¹⁸⁶, sa from Tanzania, *freshly harvested maize

incidence: 4/55*, conc. range: 20–44 $\mu\text{g}/\text{kg}$, sample year: 2006, country: Tanzania/Belgium¹¹⁸⁶, sa from Tanzania, *stored maize

incidence: 4/4*, conc. range: 320–665 $\mu\text{g}/\text{kg}$, \emptyset conc.: 438.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: South Africa¹¹⁸⁹, sa from Brazil, *ncac (4 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 3/3* **, conc. range: 120–215 $\mu\text{g}/\text{kg}$, \emptyset conc.: 178.3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **home-grown, good corn (3 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 5/5* **, conc. range: 165–2,490 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,067 $\mu\text{g}/\text{kg}$, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **home-grown, moldy corn (5 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 13/52*, conc. range: 24.0–287.4 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Argentina¹³¹³, *ncac

incidence: 12/26, conc. range: 23.2–274 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 11/13, conc. range: 26.6–777 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

3-*epi*-FUMONISIN B₃

incidence: 10/52*, conc. range: ≤ 191 $\mu\text{g}/\text{kg}$, sample year: 2000, country: Iran⁸⁶⁷, *for food and feed

incidence: 4/4*, conc. range: 45–95 $\mu\text{g}/\text{kg}$, \emptyset conc.: 68.75 $\mu\text{g}/\text{kg}$, sample year: unknown, country: South Africa¹¹⁸⁹, sa from Brazil, *ncac (4 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 3/3* **, conc. range: 20–45 $\mu\text{g}/\text{kg}$, \emptyset conc.: 33.3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **home-grown, good corn (3 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 5/5* **, conc. range: 25–285 $\mu\text{g}/\text{kg}$, \emptyset conc.: 123 $\mu\text{g}/\text{kg}$, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **home-grown, moldy corn (5 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

FUMONISIN C₁

incidence: 7/26*, conc. range: ≤ 252 $\mu\text{g}/\text{kg}$, sample year: 2003, country: South Africa¹¹⁶⁵, *good maize

incidence: 16/18*, conc. range: $\leq 1,410$ $\mu\text{g}/\text{kg}$, sample year: 2003, country: South Africa¹¹⁶⁵, *moldy maize

FUMONISIN C₃

incidence: 3/26*, conc. range: ≤ 24 $\mu\text{g}/\text{kg}$, sample year: 2003, country: South Africa¹¹⁶⁵, *good maize

incidence: 9/18*, conc. range: ≤ 144 $\mu\text{g}/\text{kg}$, sample year: 2003, country: South Africa¹¹⁶⁵, *moldy maize

FUMONISIN C₄

incidence: 12/26*, conc. range: ≤150 µg/kg, sample year: 2003, country: South Africa¹¹⁶⁵, *good maize

incidence: 16/18*, conc. range: ≤1,470 µg/kg, sample year: 2003, country: South Africa¹¹⁶⁵, *moldy maize

FUMONISIN

incidence: 14/14*, conc. range: 17,600–58,400 µg/kg, Ø conc.: 36,350 µg/kg, sample year: 2001, country: USA⁸⁷⁶, *conventional hybrids

incidence: 4/4*, conc. range: 20,200–56,500 µg/kg, Ø conc.: 42,350 µg/kg, sample year: 2001, country: USA⁸⁷⁶, *Bt hybrids

FUMONISINS (FB₁, FB₂)

incidence: 4/7, conc. range: 38–1,342 µg/kg, Ø conc.: 401 µg/kg, sample year: 2008/2009, country: Italy¹⁹²

incidence: 102/105*, conc. range: 12–11,661 µg/kg, Ø conc.: 645 µg/kg, sample year: 1996, country: Croatia/Italy⁴⁶⁰, sa from Croatia, *for food and feed

incidence: 97/104*, conc. range: 12–2,524 µg/kg, Ø conc.: 134 µg/kg, sample year: 1997, country: Croatia/Italy⁴⁶⁰, sa from Croatia, *for food and feed

incidence: 1*/16, conc.: 1,037 µg/kg, sample year: 2007, country: Spain⁹⁰⁴, *stadium F3 (at day 30), agricultural practices may also have an influence; for detailed information please see the article

incidence: 5*/16, conc. range: 393–2,700 µg/kg, Ø conc.: 1,160.4 µg/kg, sample year: 2007, country: Spain⁹⁰⁴, *stadium F4 (at day 45), agricultural practices may also have an influence; for detailed information please see the article

incidence: 10*/16, conc. range: 175–2,600 µg/kg, Ø conc.: 792.2 µg/kg, sample year: 2007, country: Spain⁹⁰⁴, *stadium F5 (ripe corn at harvest), agricultural practices may also have an influence; for detailed information please see the article

incidence: 24/24* ** ***, conc. range: 10–19,690 µg/kg, Ø conc.: 2,690 µg/kg, sample year: 2000, country: Italy⁹¹⁸, *ncac, **maize hybrids, ***healthy-looking ear sa

incidence: 25/25* ** ***, conc. range: 1,400–693,700 µg/kg, Ø conc.: 133,600 µg/kg, sample year: 2000, country: Italy⁹¹⁸, *ncac, **maize hybrids, ***insect-damaged ear sa

incidence: 7/19, conc. range: 84–2,130 µg/kg, Ø conc.: 540.4 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁷

incidence: 4/62, conc. range: 37.6–769 µg/kg, sample year: unknown, country: China¹⁵⁸⁶

incidence: 3/4*, conc. range: ≤412 µg/kg, Ø conc.: 358 µg/kg, sample year: 2001/2002, country: Iran/South Africa¹⁶⁶⁵, sa from Canada, *for food and feed

incidence: 4/6*, conc. range: ≤512 µg/kg, Ø conc.: 381 µg/kg, sample year: 2001/2002, country: Iran/South Africa¹⁶⁶⁵, sa from China, *for food and feed

FUMONISINS (B₁, B₂, B₃)

incidence: 12/12, conc. range: <100–3,500 µg/kg, sample year: 1993, country: USA³⁷⁰

incidence: 1/20*, conc.: 11 µg/kg, sample year: 1994/1995, country: UK³⁸³, *sweet corn

incidence: 83/317* ** ***, conc. range: 6–7,132 µg/kg, Ø conc.: 528.4 µg/kg, sample year: 2001–2003, country: Germany¹²⁶⁵, *for food and feed, **native grain-maize, ***in part harvest and variety tests

incidence: 3/12* **, conc. range: 200–20,700 µg/kg, Ø conc.: 7,630 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 38/40*, conc. range: ≤3,975 µg/kg, sample year: 2001–2003, country: South Africa¹⁴⁹⁸, *home-grown maize

incidence: 20/20*, conc. range: 5–1,580 µg/kg, Ø conc.: 370 µg/kg, sample year: 2001–2003, country: South Africa¹⁴⁹⁸,

*commercial maize

incidence: 15/15, conc. range: 106–6,088 µg/kg, Ø conc.: 1,861.3 µg/kg, sample year: unknown, country: South Africa¹⁵⁴³

incidence: 4/5*, conc. range: 70–500 µg/kg, Ø conc.: 305 µg/kg, sample year: 2005, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (3 sa co-contaminated with DON and FBS; 1 sa contaminated solely with FBS)

incidence: 8/8*, conc. range: 160–1,680 µg/kg, Ø conc.: 785 µg/kg, sample year: 2006, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (5 sa co-contaminated with DON and FBS, 3 sa contaminated solely with FBS)

incidence: 7/7*, conc. range: 0.4–710 µg/kg, Ø conc.: 218 µg/kg, sample year: 2007, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (5 sa co-contaminated with DON and FBS, 2 sa contaminated solely with FBS)

incidence: 7/7*, conc. range: 100–820 µg/kg, Ø conc.: 312 µg/kg, sample year: 2008, country: USA¹⁶³⁵, *maize intended for popcorn, variety: Weaver brand (7 sa co-contaminated with DON and FBS)

incidence: 5/9*, conc. range: 11–100 µg/kg (1 sa), 501–1,000 µg/kg (1 sa), >1,000 µg/kg (3 sa, maximum: 2,471 µg/kg), sample year: unknown, country: Indonesia¹⁶⁵⁵

FUMONISINS (TOTAL)

incidence: 134/139*, conc. range: 30–100 µg/kg (15 sa), 101–500 µg/kg (40 sa), 501–1,000 µg/kg (30 sa), 1001–5,000 µg/kg (48 sa), 5,007 µg/kg (1 sa), sample year: 1998/1999, country: UK⁷⁴⁵, sa from different countries, *ncac

incidence: 12/14, conc. range: 1,100–34,700 µg/kg, Ø conc.: 11,050 µg/kg, sample year: 2003, country: Argentina⁹⁵⁴

incidence: 12/17, conc. range: 6,667–16,100 µg/kg, Ø conc.: 300 µg/kg, sample year: 2004, country: Argentina⁹⁵⁴

incidence: 92/92, conc. range: 337–10,613 µg/kg, Ø conc.: 2,610 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa from Argentina

incidence: 62/120*, conc. range: 61–11,048 µg/kg, sample year: 2005/2006, country: Tanzania/Belgium¹²⁰⁴, sa from Tanzania, *home grown maize

incidence: 38/40*, conc. range: ≤7,900 µg/kg, sample year: 1997, country: South Africa¹⁴⁹¹, *good maize

incidence: 31/31*, conc. range: 300–37,800 µg/kg, Ø conc.: 4,850 µg/kg, sample year: 1997, country: South Africa¹⁴⁹¹, *moldy maize

incidence: 77/82*, conc. range: ≤7,960 µg/kg, sample year: 2000, country: South Africa¹⁴⁹¹, *good maize

incidence: 50/50*, conc. range: 320–53,000 µg/kg, Ø conc.: 10,782 µg/kg, sample year: 2000, country: South Africa¹⁴⁹¹, *moldy maize

FUMONISINS

incidence: 15*/27, conc. range: <1,000–12,000 µg/kg, sample year: unknown, country: UK²²⁰, *included maize and maize products (3 sa co-contaminated with AFS and FBS, 12 sa contaminated solely with FBS)

incidence: 1/1*, conc.: 200 µg/kg, sample year: unknown, country: USA³⁵⁷, *corn pops cereal

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *conventional

incidence: 4/4*, conc. range: 37–1,400 µg/kg, Ø conc.: 411 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Italy, USA and of unknown origin, *organic (1 sa co-contaminated with DON, FBS, and ZEA, 1 sa co-contaminated with DON and ZEA, 1 sa co-contaminated with FBS and ZEA, 1 sa contaminated solely with FBS)

incidence: 147/150* **, conc. range: 440–22,600 µg/kg, sample year: 1994/1995, country: Brazil/Japan⁷⁸¹, sa from Brazil, *ncac

incidence: 36/36*, conc. range: 740 µg/kg (1 sa), 1000–3,000 µg/kg (2 sa), 3,100–5,000 µg/kg (5 sa), 5,100–7,000 µg/kg (6 sa), 7,100–10,000 µg/kg (8 sa), 10,100–13,000 µg/kg (3 sa), 13,100–15,000 µg/kg (3 sa), 15,100–18,000 µg/kg (2 sa), 18,100–20,000 µg/kg (2 sa), 20,100–23,000 µg/kg (4 sa, maximum 22,600 µg/kg), sample year: 1996, country: Brazil⁷⁸², *ncac, **freshly harvested corn

incidence: 36/36*, conc. range: 810 µg/kg (1 sa), 1,000–3,000 µg/kg (1 sa), 3,100–5,000 µg/kg (6 sa), 5,100–7,000 µg/kg (6 sa), 7,100–10,000 µg/kg (6 sa), 10,100–13,000 µg/kg (5 sa), 13,100–15,000 µg/kg (3 sa), 15,100–18,000 µg/kg (5 sa), 18,100–20,000 µg/kg (1 sa), 20,100–23,000 µg/kg (1 sa), 23,700 µg/kg (1 sa), sample year: 1997, country: Brazil⁷⁸², *ncac, **stored for 12 month

incidence: 28/33*, conc. range: 20–1,270 µg/kg, Ø conc.: 247 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³, *maize and meal

incidence: 84/84*, conc. range: 400–102,000 µg/kg, sample year: 1998, country: USA⁸⁷⁵, *corn sa from 21 corn hybrids

incidence: 15/15*, conc. range: 300–8,100 µg/kg, Ø conc.: 3,320 µg/kg, sample year: 1999, country: USA⁸⁷⁶, *conventional hybrids

incidence: 14/14*, conc. range: 1,000–4,400 µg/kg, Ø conc.: 2,090 µg/kg, sample year: 1999, country: USA⁸⁷⁶, *Bt hybrids

incidence: 5/14*, conc. range: 200–3,700 µg/kg, Ø conc.: 400 µg/kg, sample year: 2003, country: Nigeria/USA⁸⁸², sa from Nigeria, *good quality grain for human consumption

incidence: 13/13*, conc. range: 1,400–110,000 µg/kg, Ø conc.: 31,000 µg/kg, sample year: 2003, country: Nigeria/USA⁸⁸², sa from Nigeria, *poor quality grain

incidence: 45/47*, conc. range: 100–25,730 µg/kg, sample year: 2006, country: Italy¹⁰²², *for food and feed

incidence: 34/36*, conc. range: ≤76,323 µg/kg, sample year: 2007, country: Italy¹⁰²², *for food and feed

incidence: 90/90*, conc. range: 80–15,320 µg/kg, Ø conc.: 2,540 µg/kg, sample year: 2003, country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: reception (8 sa co-contaminated with AFS and FBS, 82 sa contaminated solely with FBS)

incidence: 60/60*, conc. range: 110–18,780 µg/kg, Ø conc.: 3,120 µg/kg, sample year: 2003 country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: pre-drying (10 sa co-contaminated with AFS and FBS, 50 sa contaminated solely with FBS)

incidence: 89/90*, conc. range: 70–18,160 µg/kg, Ø conc.: 1,310 µg/kg, sample year: 2004, country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: reception

incidence: 57/60*, conc. range: 60–6,280 µg/kg, Ø conc.: 1,360 µg/kg, sample year: 2004, country: Brazil/Japan¹²⁸⁵, sa from Brazil, *sampling site: pre-drying

incidence: 114/114*, conc. range: 3,700–192,000 µg/kg, Ø conc.: 73,300 µg/kg, sample year: 2006, country: South Africa/Zambia¹²⁸⁸, sa from Zambia, *for food and feed

incidence: 31/46*, conc. range: 31–25,200 µg/kg, sample year: 2010, country: Croatia¹⁴⁶², *for food and feed

incidence: 24/24* **, conc. range: 60–12,800 µg/kg, Ø conc.: 1,084 µg/kg, sample year: 2011, country: Serbia¹⁵⁸⁷, *ncac, **silo maize (22 sa co-contaminated with DON and FBS, 2 sa contaminated solely with FBS)

FUSAPROLIFERIN

incidence: 1/31*, conc.: 600 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 9/22* **, conc. range: 600–500,000 µg/kg, Ø conc.: 72,222 µg/kg, sample year: 1994, country: Italy⁵¹³, *ncac, **visibly moldy (5 sa co-contaminated with BEA, FB₁ and FP,

4 sa co-contaminated with FB₁ and FP)

incidence: 1/28, conc.: 2,470 µg/kg, year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 3/5, conc. range: 9.2–38.8 µg/kg, Ø conc.: 25.46 µg/kg, sample year: unknown, country: USA¹³⁰⁹

incidence: 7/11*, conc. range: 200–8,200 µg/kg, Ø conc.: 3,807 µg/kg, sample year: 1996, country: Slovakia/Italy¹⁴³⁵, sa from Slovakia, *ncac (1 sa co-contaminated with BEA, FB₁, FB₂, and FP, 5 sa co-contaminated with FB₁, FB₂, and FP, 1 sa co-contaminated with FB₂ and FP)

incidence: 1/11*, conc.: tr, sample year: 1998, country: Slovakia/Italy¹⁴³⁵, sa from Slovakia, *ncac (1 sa co-contaminated with FB₁, FB₂, and FP)

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/189*, conc.: 3.3 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 5/46, conc. range: 23–139 µg/kg, Ø conc.: 55 µg/kg, sample year: 1990/1991, country: Korea/Japan⁴⁶², sa from Korea

incidence: 9/93*, conc. range: 12–419 µg/kg, Ø conc.: 101.1 µg/kg, sample year: unknown, country: Italy⁴⁸¹, *ncac

incidence: 5/15*, conc. range: 15–72 µg/kg, Ø conc.: 27 µg/kg, sample year: 1992, country: Korea⁵¹⁴, *ncac (1 sa

co-contaminated with DON, FUS-X, NIV, and ZEA, 3 sa co-contaminated with DON, FUS-X, and NIV, 1 sa co-contaminated with DON and FUS-X)

incidence: 14/36*, conc. range: 2–2,200 µg/kg, Ø conc.: 400 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly moldy (5 sa co-contaminated with DON,

3-AcDON, 15-AcDON, FUS-X, and NIV, 2 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 5 sa co-contaminated with DON, 15-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, FUS-X, and NIV; no further information available)

incidence: 3/35*, conc. range: 4–30 µg/kg, Ø conc.: 10 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy (1 sa co-contaminated with DON, FUS-X, and NIV, 2 sa co-contaminated with 15-AcDON and NIV)

incidence: 2/5* **, conc. range: 600–1,800 µg/kg, Ø conc.: 2,200 µg/kg, sample year: 1988, country: Italy/Poland⁵⁶³, sa from Poland, *ncac, **red ear rot symptoms (2 sa co-contaminated with FUS-X, NIV and ZEA)

incidence: 6/46* **, conc. range: 26–420 µg/kg, Ø conc.: 119.8 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize (1 sa co-contaminated with DON and FUS-X, 5 sa co-contaminated with FUS-X and NIV; no further information available)

incidence: 19/69, conc. range: 2.0–8.2 µg/kg, Ø conc.: 3.76 µg/kg, sample year: unknown, country: China¹¹⁷⁷

FUSARIN C

incidence: 1/50*, conc.: 76.8 µg/kg, sample year: unknown, country: Egypt⁴⁴⁴, *white corn (1 sa co-contaminated with DAS, FUS-C, and ZEA)

incidence: 1/1* **, conc.: 150 µg/kg, sample year: 1978, country: South Africa⁴⁴⁹, *ncac, **ears visibly infected by *Fusarium*

HT-2 TOXIN

incidence: 2/189*, conc. range: 3.1–6.5 µg/kg, Ø conc.: 4.8 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 3*/162**, conc. range: 53,000–645,000 µg/kg, Ø conc.: 294,333 µg/kg, sample year: 1984/1985, country: Poland/Italy⁴³⁷, sa from Poland, **Fusarium* damaged kernels, **ncac (1 sa

co-contaminated with HT-2, NEO, T-2, T-2TET, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, T-2, and T-2TRI, 1 sa co-contaminated with HT-2 and T-2)

incidence: 1/16*, conc.: 230 µg/kg, sample year: 1989, country: Canada⁵²¹, *ncac

incidence: 1/14, conc.: 64.0 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 5/72*, conc. range: ≤84 µg/kg, Ø conc.: 43 µg/kg, sample year: 2008, country: Spain⁹⁷⁷, *sweet corn

incidence: 1/6*, conc.: <LOQ, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL)

incidence: 3/15, conc. range: 37–96 µg/kg, Ø conc.: 66 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, HT-2, and T-2)

MONILIFORMIN

incidence: 59/100, conc. range: tr–774 µg/kg, sample year: 1998, country: USA⁴⁵³

incidence: 6/12*, conc. range: 450–8,530 µg/kg, Ø conc.: 3,835 µg/kg, sample year: 1993, country: Poland⁴⁶³, *ncac (6 sa co-contaminated with BEA and MON)

incidence: 15/29*, conc. range: >100–280 µg/kg, sample year: 1987, country: New Zealand⁴⁶⁸, *ncac

incidence: 11/11* **, conc. range: 16,800–425,000 µg/kg, sample year: 1990, country: Austria/Poland⁴⁸⁷, sa from Poland, *ncac, ***Fusarium* damaged kernels

incidence: 1/40* **, conc.: 200,000 µg/kg, sample year: 1992/1993, country: Italy⁴⁹⁴, *ncac, **selected preharvest-infected maize ears (1 sa co-contaminated with BEA, FB₁, and MON)

incidence: 8/9* **, conc. range: 17,000–425,000 µg/kg, Ø conc.: 152,857 µg/kg, sample year: 1990, country: Italy/Poland⁴⁹⁵, *ncac, **preharvest infected corn ears, sa from Poland (7 sa

co-contaminated with BEA and MON, 1 sa contaminated solely with MON)

incidence: 2/12*, conc. range: 60–200 µg/kg, Ø conc.: 130 µg/kg, sample year: unknown, country: Canada⁵²³, *ncac

incidence: 4/4*, conc. range: 50–90 µg/kg, Ø conc.: 72.5 µg/kg, sample year: 1985–1989, country: UK/Poland⁵²⁴, sa from USA and unknown origin, *retail sa

incidence: 20/20* **, conc. range: 4,200–399,300 µg/kg, Ø conc.: 97,710 µg/kg, sample year: 1985–1989, country: UK/Poland⁵²⁴, sa from Poland, *ncac, ***Fusarium* damaged kernels

incidence: 1/1*, conc.: 16,000 µg/kg, sample year: 1978, country: South Africa⁵⁴¹, *visibly moldy

incidence: 1/1*, conc.: 25,000 µg/kg, sample year: 1978, country: South Africa⁵⁴¹, *hand-selected visibly *Fusarium* infected kernels

incidence: 5/5*, conc. range: 120–1,270 µg/kg, Ø conc.: 572 µg/kg, sample year: unknown, country: Austria⁷²², *ncac

incidence: 23/23*, conc. range: 24–522 µg/kg, Ø conc.: 141 µg/kg, sample year: unknown, country: UK⁷⁴³, *ncac

incidence: 2/19*, conc. range: <15 µg/kg, sample year: unknown, country: UK⁷⁴³, sa from different countries, *corn on the cob

incidence: 1/41, conc. range: 15 µg/kg, sample year: 1989, country: South Africa⁷⁹⁸

incidence: 11/52, conc. range: ≤2,040 µg/kg, sample year: 1990, country: South Africa⁷⁹⁸

incidence: 2/36*, conc. range: 320–390 µg/kg, Ø conc.: 355 µg/kg, sample year: 1989, country: South Africa⁷⁹⁹, sa exported to Taiwan, *sa collected in South Africa before export

incidence: 18/54, conc. range: pr, sample year: 2006, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 47/104, conc. range: 52.3–1,116.0 µg/kg, Ø conc.: 481.2 µg/kg, country: China¹⁰³⁵

incidence: 22/69, conc. range: 9.2–251.5 µg/kg, Ø conc.: 127.0 µg/kg, sample year: unknown, country: China¹¹⁷⁷

incidence: 1/3, conc.: 18.0 µg/kg, sample year: unknown, country: Germany¹⁴⁶¹

incidence: 2/4, conc. range: 10–17 µg/kg*, Ø conc.: 13.5 µg/kg*, sample year: 1997, country: South Africa/Italy¹⁴⁸⁸, *2 handselected sa showing visible *Fusarium* infection

incidence: 2/26, conc. range: 413–1,025 µg/kg, Ø conc.: 719 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 7/13, conc. range: 98–1,305 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

NEOSOLANIOL

incidence: 1/189*, conc.: 6.3 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 2*/162**, conc. range: 19,400–27,200 µg/kg, Ø conc.: 23,300 µg/kg, sample year: 1984/1985, country: Poland/Italy⁴³⁷, sa from Poland, **Fusarium* damaged kernels, **ncac (1 sa co-contaminated with HT-2, NEO, T-2, T-2TRI, and T-2TET, 1 sa co-contaminated with NEO, HT-2, T-2, and T-2TRI)

incidence: 1/100*, conc.: tr, sample year: 1987/1989, country: Argentina¹³⁹¹, *for food and feed

incidence: 2/15, conc. range: 11–22 µg/kg, Ø conc.: 16.5 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, NEO, T-2, and ZEA)

NIVALENOL

incidence: 12/34*, conc. range: 39–153 µg/kg, Ø conc.: 86 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 2/20*, conc. range: 10–107 µg/kg, Ø conc.: 59 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 1/2*, conc.: 10 µg/kg, year: 1989, country: China³⁴², *powdered corn (1 sa co-contaminated with DON, FB₁, FB₂, FB₃, NIV, and ZEA)

incidence: 2/16, conc. range: 49–169 µg/kg, Ø conc.: 109 µg/kg, sample year: 1995, country: Japan/Indonesia⁴²⁶, sa from Indonesia (1 sa co-contaminated with DON, FB₁, NIV, and ZEA, 1 sa co-contaminated with DON, FB₁, and NIV)

incidence: 6/7, conc. range: 1,800–32,500 µg/kg, Ø conc.: 8,900 µg/kg, sample year: 1985–1993, country: Poland/Austria/Sweden⁴³⁸, sa from Poland, *ncac, **heavily damaged kernels

incidence: 12/12* **, conc. range: 130–2,760 µg/kg, Ø conc.: 993 µg/kg, sample year: 1985, country: China⁴⁵⁶, *corn and corn meal, **high EC area (12 sa co-contamination with DON and NIV?)

incidence: 12/12* **, conc. range: 54–1,380 µg/kg, Ø conc.: 521 µg/kg, sample year: 1986, country: China⁴⁵⁶, *corn and corn meal, **high EC area (12 sa co-contamination with DON and NIV?)

incidence: 16/46, conc. range: 6–366 µg/kg, Ø conc.: 77 µg/kg, sample year: 1990/1991, country: Korea/Japan⁴⁶², sa from Korea

incidence: 14/93*, conc. range: 7–240 µg/kg, Ø conc.: 67.3 µg/kg, sample year: unknown, country: Italy⁴⁸¹, *ncac

incidence: ?/27*, conc. range: 4–53 µg/kg, Ø conc.: 11 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *high EC area

- incidence: 8/10*, conc. range: 17–68 µg/kg, Ø conc.: 34.3 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease
- incidence: 5/5*, conc. range: 17–34 µg/kg, Ø conc.: 22 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *medial incidence of Kashin-Beck disease
- incidence: 8/10*, conc. range: 8–68 µg/kg, Ø conc.: 19.8 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *low incidence of Kashin-Beck disease
- incidence: 1/3, conc. range: 624 µg/kg, sample year: 1989, country: Korea⁵⁰⁹ (1 sa co-contaminated with DON and NIV)
- incidence: 8/15*, conc. range: 26–332 µg/kg, Ø conc.: 168 µg/kg, sample year: 1992, country: Korea⁵¹⁴, *ncac (1 sa co-contaminated with DON, FUS-X, NIV, and ZEA, 3 sa co-contaminated with DON, FUS-X, and NIV, 4 sa co-contaminated with DON and NIV)
- incidence: 1/14*, conc.: 680 µg/kg, sample year: 1991, country: Canada⁵²¹, *ncac
- incidence: 4/16* **, conc. range: 130–200 µg/kg, sample year: 1992, country: Canada⁵²¹, *ncac, **Ontario corn
- incidence: 1/11* **, conc.: 150 µg/kg, sample year: 1994, country: Canada⁵²¹, *ncac, **Ontario corn
- incidence: 32/36*, conc. range: 6–15,600 µg/kg, Ø conc.: 1,700 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly moldy (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, FUS-X, and NIV, 5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and NIV, 2 sa co-contaminated with DON, 3-AcDON, FUS-X, and NIV, 5 sa co-contaminated with DON, 15-AcDON, FUS-X, and NIV, 1 sa co-contaminated with DON, FUS-X, and NIV; no further information available)
- incidence: 6/35*, conc. range: 20–200 µg/kg, Ø conc.: 80 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy (3 sa co-contaminated with DON, 15-AcDON, and NIV, 1 sa co-contaminated with DON, FUS-X, and NIV, 2 sa co-contaminated with NIV and FUS-X)
- incidence: 7/45*, Ø conc.: 766 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac
- incidence: 1/1*, conc.: 12 µg/kg, sample year: 1984, country: Japan⁵³⁷, sa from Canada, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)
- incidence: 6/9*, Ø conc.: 892 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac
- incidence: 2/5* **, conc. range: 33,200–42,500 µg/kg, Ø conc.: 37,850 µg/kg, sample year: 1988, country: Italy/Poland⁵⁶³, sa from Poland, *ncac, **red ear rot symptoms (2 sa co-contaminated with FUS-X, NIV and ZEA)
- incidence: 2/41, conc. range: ≤70 µg/kg, sample year: 1989, country: South Africa⁷⁹⁸
- incidence: 37/52, conc. range: ≤370 µg/kg, sample year: 1990, country: South Africa⁷⁹⁸
- incidence: 2/32, conc. range: 120 µg/kg, Ø conc.: 120 µg/kg, sample year: 1989, country: South Africa⁷⁹⁹, sa exported to Taiwan, *sa collected from the end-point distributors in Taiwan after export
- incidence: 7/50* **, conc. range: 18–102 µg/kg, Ø conc.: 43 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Philippines, *for seeds, food and feed, **maize and ground maize
- incidence: 1/292*, conc.: 105.1 µg/kg, sample year: 2003, country: UK⁸³⁸, sa from UK and different countries, *included sweetcorn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (1 sa co-contaminated with NIV and ZEA)

incidence: 7/12, conc. range: 6.5–50.7 µg/kg, Ø conc.: 29 µg/kg, sample year: unknown, country: Japan⁸⁴³, sa imported

incidence: 19/54, conc. range: pr, sample year: 2006, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 4/14, conc. range: 150–903 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 7/46* **, conc. range: 12–2,440 µg/kg, Ø conc.: 548.9 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize (5 sa co-contaminated with FUS-X and NIV, 1 sa co-contaminated with DON and NIV; no further information available)

incidence: 54/55, conc. range: ≤4,240 µg/kg, sample year: unknown, country: China¹¹⁵²

incidence: 36/69, conc. range: 2.1–15.3 µg/kg, Ø conc.: 5.48 µg/kg, sample year: unknown, country: China¹¹⁷⁷

incidence: 1/2* **, conc.: 170 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac, **1 moist grain (1 sa co-contaminated with DON, NIV, and OTA) and 1 dry grain sa

incidence: 4/31* **, conc. range: 58–185 µg/kg, Ø conc.: 99.3 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (2 sa co-contaminated with DON, NIV and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 5/100*, conc. range: tr–500 µg/kg, sample year: 1987/1989, country: Argentina¹³⁹¹, *for food and feed

incidence: 4/13, conc. range: 20.2–45.9 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

4,15-DIACETYLNIVALENOL

incidence: 7/46, conc. range: 17–51 µg/kg, Ø conc.: 29 µg/kg, sample year: 1990/1991, country: Korea/Japan⁴⁶², sa from Korea

DIACETOXYSCIRPENOL

incidence: 1/189*, conc.: 3.1 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 4/50*, conc. range: 98.4–128.4 µg/kg, Ø conc.: 117.7 µg/kg, sample year: unknown, country: Egypt⁴⁴⁴, *white corn (1 sa co-contaminated with DAS, T-2, and ZEA, 1 sa co-contaminated with DAS, FUS-C, and ZEA, 2 sa co-contaminated with DAS and ZEA)

incidence: 5/13*, conc. range: 30–900 µg/kg, Ø conc.: 388 µg/kg, sample year: 1984, country: New Zealand⁴⁵⁷, *ncac (3 sa co-contaminated with DAS, DON, T-2, and ZEA, 1 sa co-contaminated with DAS, T-2, and ZEA, 1 sa co-contaminated with DAS and ZEA)

incidence: 1/2, conc.: 130 µg/kg, sample year: unknown, country: New Zealand⁴⁵⁷ (1 sa co-contaminated with DAS, DON, and ZEA)

incidence: 17/180*, conc. range: 23–51 µg/kg, sample year: 2005, country: Nigeria/Germany⁶⁸⁰, sa from Nigeria, *maize seeds

incidence: 1/14, conc.: 6.4 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 2/100*, conc. range: 400–450 µg/kg, Ø conc.: 425 µg/kg, sample year: 1987/1989, country: Argentina¹³⁹¹, *for food and feed

TRICHOHECENES

incidence: 25/34, conc. range: 13–1,780 µg/kg, Ø conc.: 517 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 4/20, conc. range: 10–107 µg/kg, Ø conc.: 55 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

T-2 TOXIN

incidence: 1/189*, conc.: 6.3 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 4/5* **, conc. range: 510–1,100 µg/kg, Ø conc.: 740 µg/kg, sample year: unknown, country: Turkey³³⁶, *dried corn, **bought from market

incidence: 1/1* **, conc.: 450 µg/kg, sample year: unknown, country: Turkey³³⁶, *dried corn, **bought from bazar

incidence: 1/1* ** ***, conc.: 1,700 µg/kg, sample year: unknown, country: Turkey³³⁶, *frozen corn, **bought from market, ***those product ingredients were partially processed out of Turkey

incidence: 3*/162**, conc. range: 47,000–992,000 µg/kg, Ø conc.: 411,333 µg/kg, sample year: 1984/1985, country: Poland/Italy⁴³⁷, sa from Poland, **Fusarium* damaged kernels, **ncac (1 sa co-contaminated with HT-2, NEO, T-2, T-2TET, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, T-2, and T-2TRI, 1 sa co-contaminated with HT-2 and T-2)

incidence: 3/50*, conc. range: 72.8–120.8 µg/kg, Ø conc.: 93.5 µg/kg, sample year: unknown, country: Egypt⁴⁴⁴, *white corn (2 sa co-contaminated with T-2 and ZEA, 1 sa co-contaminated with DAS, T-2, and ZEA)

incidence: 1/20*, conc.: 130.4 µg/kg, sample year: unknown, country: Egypt⁴⁴⁴, *yellow corn (1 sa co-contaminated with T-2 and ZEA)

incidence: 9/13*, conc. range: 5–200 µg/kg, Ø conc.: 88 µg/kg, sample year: 1984, country: New Zealand⁴⁵⁷, *ncac (3 sa co-contaminated with DAS, DON, T-2, and ZEA, 1 sa co-contaminated with DAS, T-2, and ZEA, 2 sa co-contaminated with DON, T-2, and ZEA, 2 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with T-2)

incidence: 6/86, conc. range: 550–2,920 µg/kg, sample year: 1989, country: India⁵²⁶ (2 sa co-contaminated with DON and T-2, 4 sa co-contaminated with T-2 and ZEA)

incidence: 15/124, conc. range: 78–650 µg/kg, sample year: probably 1978/1981, country: Taiwan/USA⁵⁴⁷, sa from South Africa and USA

incidence: ?/126*, conc. range: ≤8.4 µg/kg, Ø conc.: 0.4 µg/kg**, sample year: unknown, country: Germany⁹⁴⁵, *corn/corn products, **of pos sa?

incidence: 2/72*, conc. range: 174–256 µg/kg, Ø conc.: 215 µg/kg, sample year: 2008, country: Spain⁹⁷⁷, *sweet corn

incidence: 4/18, conc. range: 0.8–12.0 µg/kg, sample year: 1980–1985, country: Japan⁹⁸³, sa from Italy, Nepal, USA, and USSR; for detailed information please see the article

incidence: 1/5*, conc.: 45.2 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *frozen corn

incidence: 9/197, conc. range: 10–40 µg/kg, sample year: 1994–1997, country: India¹¹⁶²

incidence: 15/100*, conc. range: 900–2,400 µg/kg, sample year: 1987/1989, country: Argentina¹³⁹¹, *for food and feed

incidence: 11/46*, conc. range: 10.5–210 µg/kg, sample year: 2010, country: Croatia¹⁴⁶², *for food and feed

incidence: 1/6*, conc.: 10 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL)

incidence: 5/15, conc. range: 18–78 µg/kg, Ø conc.: 42.2 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, T-2, and ZEA)

T-2 TETRAOL

incidence: 1*/162**, conc.: 36,200 µg/kg, sample year: 1984/1985, country: Poland/Italy⁴³⁷, sa from Poland, **Fusarium* damaged kernels, **ncac (1 sa co-contaminated with HT-2, NEO, T-2, T-2TET, and T-2TRI)

T-2 TRIOL

incidence: 2*/162**, conc. range: 9,700–14,500 µg/kg, Ø conc.: 12,100 µg/kg, sample year: 1984/1985, country: Poland/Italy⁴³⁷, sa from Poland, **Fusarium* damaged kernels, **ncac (1 sa co-contaminated with HT-2, NEO, T-2, T-2TET, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, T-2, and T-2TRI)

ZEARALANONE

incidence: 2/46* **, conc. range: 12–13 µg/kg, Ø conc.: 12.5 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize

incidence: 17/69, conc. range: 3.1–58.6 µg/kg, Ø conc.: 7.79 µg/kg, sample year: unknown, country: China¹¹⁷⁷

β-ZEARALANOL

incidence: 2/46* **, conc. range: 6–8 µg/kg, Ø conc.: 7 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize

α-ZEARALENOL

incidence: 23/182, conc. range: 32–181 µg/kg, sample year: 2005, country: Nigeria/Germany⁸⁸¹, sa from Nigeria

incidence: 5/46* **, conc. range: 7–33 µg/kg, Ø conc.: 13 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize

incidence: 1/5*, conc.: 42.1 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *tinned sweet corn

incidence: 2/5*, conc. range: 36.8–48.2 µg/kg, Ø conc.: 43.1 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *frozen corn

incidence: 6/6*, conc. range: 22–262 µg/kg, Ø conc.: 96.8 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, α-ZEL4G, and β-ZEL4G, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL)

α-ZEARALENOL-4-GLUCOSIDE

incidence: 1/6*, conc.: 283 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, α-ZEL4G, and β-ZEL4G)

β-ZEARALENOL

incidence: 8/46* **, conc. range: 6–33 µg/kg, Ø conc.: 15.5 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize

incidence: 5/6*, conc. range: ≤103 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL)

β -ZEARALENOL-4-GLUCOSIDE

incidence: 3/6*, conc. range: 92–193 μ g/kg, \emptyset conc.: 152 μ g/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α -ZEL, β -ZEL, and β -ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α -ZEL, β -ZEL, and β -ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α -ZEL, α -ZEL4G, and β -ZEL4G)

ZEARALENONE

incidence: 65/214*, conc. range: 36.8–719 μ g/kg, \emptyset conc.: 155 μ g/kg, sample year: 1997/1998, country: Brazil²⁰⁵, *ncac
 incidence: 9/21, conc. range: \leq 17.93 μ g/kg, \emptyset conc.: 5.42 μ g/kg, sample year: unknown, country: Spain²¹⁰
 incidence: 2/15*, conc. range: 4–140 μ g/kg, \emptyset conc.: 48.8 μ g/kg, sample year: unknown, country: Italy²²⁷, *ncac
 incidence: 30/30*, conc. range: 3,000–7,000 μ g/kg, \emptyset conc.: 5,480 μ g/kg, sample year: 1994/1995, country: Argentina²³⁶, *ncac (28 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with FB₁, FB₂, and ZEA, 1 sa co-contaminated with FB₁ and ZEA)
 incidence: 41/49*, conc. range: 0.43–39.12 μ g/kg, \emptyset conc.: 3.84 μ g/kg, sample year: 2002, country: Croatia²⁴⁰, *ncac
 incidence: 6/9* **, conc. range: <50–50 μ g/kg, sample year: 1996, country: Cameroon/South Africa/Benin²⁴¹, sa from Cameroon, *ncac, **sa from humid forest (5 sa co-contaminated with DON, FB₁, and ZEA, 1 sa co-contaminated with FB₁ and ZEA)
 incidence: 9/9* **, conc. range: <50–1,180 μ g/kg, sample year: 1996, country: Cameroon/South Africa/Benin²⁴¹, sa from

Cameroon, *ncac, **sa from western highlands (7 sa co-contaminated with DON, FB₁, and ZEA, 2 sa co-contaminated with DON and ZEA)

incidence: 19/34, conc. range: 11–170 μ g/kg, \emptyset conc.: 63 μ g/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 1/20, conc.: 28 μ g/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 1/36*, conc.: 4,640 μ g/kg, sample year: 1997/1998, country: Brazil³²³, *ncac

incidence: 30/380*, conc. range: 46.7 μ g/kg (1 sa), 54.2–100 μ g/kg (4 sa), 100–500 μ g/kg (23 sa), >500 μ g/kg (2 sa, maximum: 719.4 μ g/kg), \emptyset conc.: 232 μ g/kg, sample year: 1998/1999, country: Brazil³²⁷, *ncac

incidence: 2/2*, conc. range: 46–745 μ g/kg, \emptyset conc.: 395.5 μ g/kg, sample year: 1989, country: China³⁴², *powdered corn (1 sa co-contaminated with DON, 15-AcDON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with DON, FB₁, FB₂, FB₃, NIV and ZEA)

incidence: 7/8, conc. range: 5–20 μ g/kg, \emptyset conc.: 12 μ g/kg, sample year: 1989, country: USA⁴²⁴

incidence: 2/16, conc. range: 11–12 μ g/kg, \emptyset conc.: 11.5 μ g/kg, sample year: 1995, country: Japan/Indonesia⁴²⁶, sa from Indonesia (1 sa co-contaminated with DON, FB₁, NIV, and ZEA, 1 sa co-contaminated with AFB₁, FB₁, and ZEA)

incidence: 3/3, conc. range: 900–9,400 μ g/kg, \emptyset conc.: 4,800 μ g/kg, sample year: 1972, country: USA⁴²⁸

incidence: 6/50*, conc. range: 22.6–80.4 μ g/kg, \emptyset conc.: 42.7 μ g/kg, sample year: unknown, country: Egypt⁴⁴⁴, *white corn (1 sa co-contaminated with DAS, T-2, and ZEA, 1 sa co-contaminated with DAS, FUS-C, and ZEA, 2 sa co-contaminated with DAS and ZEA, 2 sa co-contaminated with T-2 and ZEA)

incidence: 1/20*, conc.: 42.2 µg/kg, sample year: unknown, country: Egypt⁴⁴⁴, *yellow corn (1 sa co-contaminated with T-2 and ZEA)

incidence: 6/26, conc. range: 200–500 µg/kg, sample year: 1972, country: USA⁴⁴⁵

incidence: 6/6*, conc. range: 620–2,000 µg/kg, Ø conc.: 1,115 µg/kg, sample year: unknown, country: Portugal⁴⁵¹, *ncac

incidence: 5[?]/24* **, conc. range: pr, sample year: 1985/1986, country: China⁴⁵⁶, *corn and corn meal, **high EC area (5 sa co-contaminated with DON, 3-AcDON, 15-AcDON, NIV, and ZEA)

incidence: 10/13*, conc. range: 200–16,000 µg/kg, Ø conc.: 2,640 µg/kg, sample year: 1984, country: New Zealand⁴⁵⁷, *ncac (3 sa co-contaminated with DAS, DON, T-2, and ZEA, 1 sa co-contaminated with DAS, T-2, and ZEA, 2 sa co-contaminated with DON, T-2, and ZEA, 1 sa co-contaminated with DAS and ZEA, 2 sa co-contaminated with T-2 and ZEA, 1 sa contaminated solely with ZEA)

incidence: 2/2, conc. range: 40–800 µg/kg, Ø conc.: 420 µg/kg, sample year: unknown, country: New Zealand⁴⁵⁷ (1 sa co-contaminated with DAS, DON, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 8/46, conc. range: 4–388 µg/kg, Ø conc.: 151 µg/kg, sample year: 1990/1991, country: Korea/Japan⁴⁶², sa from Korea

incidence: 69/91*, conc. range: ≤500 µg/kg, sample year: 1986–1989, country: New Zealand⁴⁶⁸, *ncac

incidence: 16/27*, conc. range: 14–169 µg/kg, Ø conc.: 44 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *high EC area

incidence: 1/20*, conc.: 39 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *low EC area

incidence: 1/10*, conc.: 7 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 4/18*, conc. range: 3.4–5.8 µg/kg, Ø conc.: 5 µg/kg, sample year: 1998/1999, country: Korea⁵⁰⁶, *ncac

incidence: 1/15*, conc.: 71 µg/kg, sample year: 1992, country: Korea⁵¹⁴, *ncac (1 sa co-contaminated with DON, FUS-X, NIV, and ZEA)

incidence: 21/77*, conc. range: 30–475 µg/kg, Ø conc.: 105 µg/kg, year: 1978–1981, country: Canada⁵²¹, *ncac

incidence: 86/126*, conc. range: 5–647 µg/kg, Ø conc.: 65 µg/kg, year: 1986–1993, country: Canada⁵²¹, *ncac

incidence: 9/86, conc. range: 760–1,500 µg/kg, sample year: 1989, country: India⁵²⁶ (4 sa co-contaminated with T-2 and ZEA, 5 sa contaminated solely with ZEA)

incidence: 32/36*, conc. range: 2–7,300 µg/kg, Ø conc.: 600 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly moldy

incidence: 7/35*, conc. range: 2–300 µg/kg, Ø conc.: 70 µg/kg, sample year: 1997, country: Korea⁵²⁷, *visibly healthy

incidence: 26/45*, Ø conc.: 165 µg/kg, year: unknown, country: Japan⁵³⁰, *ncac

incidence: 1/1*, conc.: 33 µg/kg, sample year: 1984, country: Japan⁵³⁷, sa from Canada, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 15/20*, Ø conc.: 6 µg/kg, sample year: 1983, country: Japan⁵³⁸, sa from Argentina, *ncac

incidence: 1/3*, conc.: 35 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Italy, *ncac

incidence: 5/9*, Ø conc.: 819 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 4/12*, Ø conc.: 10 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 1/1*, conc.: 4,000 µg/kg, sample year: 1978, country: South Africa⁵⁴¹, *visibly moldy

incidence: 1/1*, conc.: 8,000 µg/kg, sample year: 1978, country: South Africa⁵⁴¹,

*hand-selected visibly *Fusarium* infected kernels

incidence: 9/81, conc. range: 49–303 µg/kg, sample year: probably 1978/1981, country: Taiwan/USA⁵⁴⁷, sa from South Africa, Thailand, and USA

incidence: 10/10, conc. range: 50 µg/kg, Ø conc.: 50 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (10 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA)

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶²,

*conventional

incidence: 2/4* **, conc. range: 49–92 µg/kg, Ø conc.: 70.5 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Italy, USA and unknown origin, *organic (1 sa co-contaminated with DON, FBS, and ZEA, 1 sa co-contaminated with FBS and ZEA)

incidence: 5/5* **, conc. range: 700–10,000 µg/kg, Ø conc.: 5,400 µg/kg, sample year: 1988, country: Italy/Poland⁵⁶³, sa from Poland, *ncac, **red ear rot symptoms (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, and ZEA, 1 sa co-contaminated with DON, 15-AcDON, and ZEA, 2 sa co-contaminated with FUS-X, NIV and ZEA)

incidence: 1/116* **, conc.: <5,000 µg/kg, sample year: 1980, country: Spain⁵⁶⁵, *ncac, **pre-harvest Indian corn

incidence: 4/4*, conc. range: 7–2,910 µg/kg, Ø conc.: 830 µg/kg, sample year: unknown, country: USA⁵⁶⁸, *ncac

incidence: 135/139*, conc. range: 4–20 µg/kg (13 sa), 21–100 µg/kg (63 sa), 101–500 µg/kg (58 sa), 584 µg/kg (1 sa), sample year: 1998/1999, country: UK⁷⁴⁵, sa from different countries, *ncac

incidence: 9/150, conc. range: 40–350 µg/kg, Ø conc.: 210 µg/kg, sample year: 1987,

country: Argentina⁷⁶² (2 sa co-contaminated with AFB₁, AFG₁, and ZEA, 7 sa contaminated solely with ZEA)

incidence: 1/8, conc.: 400 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Malawi

incidence: 1/1, conc.: 40 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Kenya (1 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA)

incidence: 2/9, conc. range: 40–80 µg/kg, Ø conc.: 60 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Tanzania (1 sa co-contaminated with FB₁ and ZEA, 1 sa contaminated solely with ZEA)

incidence: 2/22*, conc. range: pr, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 6/76* **, conc. range: 100–200 µg/kg (2 sa), >200 µg/kg (4 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac, **maize and by-products

incidence: 9/126*, conc. range: ≤350 µg/kg, Ø conc.: 153.8 µg/kg, sample year: 1983, country: Argentina⁷⁹⁰, *ncac (3 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 54/138*, conc. range: ≤150 µg/kg, Ø conc.: 46.1 µg/kg, sample year: 1984, country: Argentina⁷⁹⁰, *ncac (6 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 17/35*, conc. range: ≤352 µg/kg, Ø conc.: 114.0 µg/kg, sample year: 1985, country: Argentina⁷⁹⁰, *ncac (4 sa co-contaminated with AFB₁, AFB₂ and ZEA, 6 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 40/108*, conc. range: ≤1,200 µg/kg, Ø conc.: 157.5 µg/kg, sample year: 1988, country: Argentina⁷⁹⁰, *ncac

incidence: 16/162*, conc. range: ≤2,000 µg/kg, Ø conc.: 300.6 µg/kg, sample year: 1989, country: Argentina⁷⁹⁰, *ncac (3 sa co-contaminated with AFB₁, AFB₂ and ZEA, 8 sa co-contaminated with

AFB₁ and ZEA; no further information available)

incidence: 195/491*, conc. range: ≤350 µg/kg, Ø conc.: 119.6 µg/kg, sample year: 1990, country: Argentina⁷⁹⁰, *ncac (7 sa co-contaminated with AFB₁, AFB₂ and ZEA, 6 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 121/288*, conc. range: ≤800 µg/kg, Ø conc.: 150.7 µg/kg, sample year: 1991, country: Argentina⁷⁹⁰, *ncac (12 sa co-contaminated with AFB₁, AFB₂ and ZEA, 28 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 127/349*, conc. range: ≤1,108 µg/kg, Ø conc.: 167.6 µg/kg, sample year: 1992, country: Argentina⁷⁹⁰, *ncac (7 sa co-contaminated with AFB₁, AFB₂ and ZEA, 36 sa co-contaminated with AFB₁ and ZEA; no further information available)

incidence: 8/294*, conc. range: ≤820 µg/kg, Ø conc.: 151.5 µg/kg, sample year: 1993, country: Argentina⁷⁹⁰, *ncac

incidence: 89/280*, conc. range: ≤1,500 µg/kg, Ø conc.: 292.9 µg/kg, sample year: 1994, country: Argentina⁷⁹⁰, *ncac

incidence: ?/20, conc. range: 100–800 µg/kg, sample year: unknown, country: Zambia/Canada⁷⁹⁷, sa from Zambia

incidence: 1/32, conc.: 25 µg/kg, sample year: 1989, country: South Africa⁷⁹⁹, sa exported to Taiwan, *sa collected from the end-point distributors in Taiwan after export

incidence: 16/328*, conc. range: 260–9,830 µg/kg, Ø conc.: 1,910 µg/kg, sample year: 1985/1986, country: Brazil⁸⁰¹, *ncac

incidence: 2/283*, conc. range: 800, sample year: 1967, country: USA⁸¹¹, *ncac

incidence: 5/293*, conc. range: 450–750 µg/kg, Ø conc.: 590 µg/kg, sample year: 1968/1969, country: USA⁸¹², *ncac

incidence: 1/20*, conc.: 40 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³, *maize and meal

incidence: 19/319*, conc. range: 38–204 µg/kg, Ø conc.: 117 µg/kg, sample year: 1973/1974, country: USA⁸²⁰, *ncac

incidence: 4/57* **, conc. range: 97–10,400 µg/kg, Ø conc.: 2,100 µg/kg, sample year: 1973/1974, country: USA⁸²⁰, *ncac, **damaged maize

incidence: 2/50* **, conc. range: 59–505 µg/kg, Ø conc.: 282 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Philippines, *for seeds, food and feed, **maize and ground maize

incidence: 1/27* **, conc.: 923 µg/kg, sample year: 1992–1994, country: Japan/Philippines/Indonesia⁸³², sa from Thailand, *for seeds, food and feed, **maize and ground maize

incidence: 47/292* **, conc. range: 11–121.2 µg/kg, sample year: 2003, country: UK⁸³⁸, *and from different countries, **included sweetcorn, corn on the cob, baby food, corn oil, corn flour, polenta, maize meal, maize pasta, maize based snacks and tortillas (13 sa co-contaminated with DON, FB₁, FB₂, FB₃, and ZEA, 1 sa co-contaminated with FB₁, FB₂, FB₃, OTA, and ZEA, 1 sa co-contaminated with DON, FB₁, FB₂, and ZEA, 2 sa co-contaminated with FB₁, FB₂, FB₃, and ZEA, 2 sa co-contaminated with DON, FB₁, and ZEA, 1 sa co-contaminated with FB₁, FB₂, and ZEA, 1 sa co-contaminated with FB₁, FB₃, and ZEA, 9 sa co-contaminated with FB₁ and ZEA, 1 sa co-contaminated with NIV and ZEA, 16 sa contaminated solely with ZEA)

incidence: 3/20, conc. range: ≤17 µg/kg, Ø conc.: 14 µg/kg, sample year: unknown,

country: Morocco⁸⁶⁶ (1 sa co-contaminated with FB₁, OTA, and ZEA, 2 sa co-contaminated with FB₁ and ZEA)

incidence: 15/50, conc. range: 10.4–45.2 µg/kg, Ø conc.: 22.3 µg/kg, sample year: unknown, country: Egypt⁸⁷⁷

incidence: 103/182, conc. range: 115–779 µg/kg, sample year: 2005, country: Nigeria/Germany⁸⁸¹, sa from Nigeria

incidence: ?/3*, conc. range: <10 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *extruded maize

incidence: 37/54, conc. range: pr, sample year: 2006, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 11/14, conc. range: <LOQ–2,564.8 µg/kg, Ø conc.: 293.7 µg/kg, sample year: 2003, country: Argentina⁹⁵⁴

incidence: 13/24, conc. range: 100–3,000 µg/kg, sample year: 1996, country: Bulgaria⁹⁷⁹

incidence: 17/21, conc. range: 200–5,000 µg/kg, sample year: 1997, country: Bulgaria⁹⁷⁹

incidence: 7/22, conc. range: 100–1,000 µg/kg, sample year: 1998, country: Bulgaria⁹⁷⁹

incidence: 11/28, conc. range: 200–2,000 µg/kg, sample year: 1999, country: Bulgaria⁹⁷⁹

incidence: 14/30, conc. range: 90–800 µg/kg, sample year: 2000, country: Bulgaria⁹⁷⁹

incidence: 18/30, conc. range: 200–3,000 µg/kg, sample year: 2001, country: Bulgaria⁹⁷⁹

incidence: 13/46* **, conc. range: 8–969 µg/kg, Ø conc.: 165.7 µg/kg, sample year: 2002, country: Italy¹⁰⁰⁰, *ncac, **freshly harvested maize

incidence: 2/5*, conc. range: 4.8–17.5 µg/kg, Ø conc.: 11.1 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *tinned sweet corn

incidence: 2/5*, conc. range: 8.9–60.5 µg/kg, Ø conc.: 34.0 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *frozen corn

incidence: 14/47*, conc. range: ≤83 µg/kg, sample year: 2006, country: Italy¹⁰²², *for food and feed

incidence: 36/36*, conc. range: 2.96–27.3 µg/kg, Ø conc.: 8.9 µg/kg, sample year: 2007, country: Italy¹⁰²², *for food and feed

incidence: 12/15, conc. range: 0.62–3.22 µg/kg, Ø conc.: 1.70 µg/kg, sample year: 2002, country: Croatia¹⁰⁶⁸

incidence: 19/197, conc. range: 10.0–41 µg/kg, sample year: 1994–1997, country: India¹¹⁶²

incidence: 62/69, conc. range: 2.7–167.2 µg/kg, Ø conc.: 31.18 µg/kg, sample year: unknown, country: China¹¹⁷⁷

incidence: 4/19, conc. range: ≤148.0 µg/kg, Ø conc.: 80.6 µg/kg, sample year: 2007, country: Bulgaria¹²⁵⁵

incidence: 23/90* **, conc. range: 3–150 µg/kg, sample year: 1986, country: Italy¹²⁷⁴, *ncac, **corn hybrids

incidence: 1/2, conc.: 6.9 µg/kg, sample year: 2001, country: Indonesia/Austria¹³⁰², sa from Indonesia

incidence: 15/31* **, conc. range: 2–19,899 µg/kg, Ø conc.: 2,172.1 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (2 sa co-contaminated with DON, NIV and ZEA, 13 sa co-contaminated with DON and ZEA)

incidence: 1/100*, conc.: tr, sample year: 1987/1989, country: Argentina¹³⁹¹, *for food and feed

incidence: 12/12* **, conc. range: 27.7–1,182 µg/kg, Ø conc.: 316.5 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 18/54*, conc. range: >100–249 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 5/6*, conc. range: 59–1,071 µg/kg, Ø conc.: 450.4 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, α-ZEL4G, and β-ZEL4G, 2 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, α-ZEL, and β-ZEL)

incidence: 9/15, conc. range: 61–783 µg/kg, Ø conc.: 250.2 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, HT-2, NEO, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, NEO, T-2, and ZEA, 2 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, FB₂, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, FB₁, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15AcDON, T-2, and ZEA, 3 sa co-contaminated with DON, 3-AcDON + 15AcDON, and ZEA)

incidence: 2/26, conc. range: 11.0–15.8 µg/kg, Ø conc.: 13.4 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 3/13, conc. range: 10.9–18.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 13/72*, conc. range: ≤5.9 µg/kg, Ø conc.: 4.9 µg/kg**, sample year: 2008, country: Spain¹⁵³⁵, *sweet corn, **of pos sa?

incidence: 17/24, conc. range: 3–83 µg/kg, sample year: unknown, country: Mexico¹⁵⁵⁰

incidence: ?/5*, conc. range: ≤4.3 µg/kg, sample year: unknown, country: USA¹⁶⁶², *white corn (1 sa > 2 µg/kg)

incidence: ?/5*, conc. range: ≤0.3 µg/kg, sample year: unknown, country: USA¹⁶⁶², *yellow corn (0 sa > 2 µg/kg)

incidence: 1/1*, conc.: 10.3 µg/kg, sample year: unknown, country: USA¹⁶⁶², *nixtamalized corn

ZEARALENONE-4-GLUCOSIDE

incidence: 1/6*, conc.: 274 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G)

ZEARALENONE-4-SULFATE

incidence: ?/3*, conc. range: <1 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *extruded maize

incidence: 2/6*, conc. range: ≤51 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, ZEA, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G)

Maize bran see Bran (maize bran)

Maize chips see Chips (maize chips)

Maize dough see Dough (maize dough)

Maize flour see Flour (maize flour)

Maize germ see Germ (maize germ)

Maize gluten see Gluten (maize gluten)

Maize grits see Grit (maize grits)

Maize malt see Malt (maize malt)

Maize meal see Meal (maize meal)

Maize paste see Paste (maize paste)

Maize products see Product (maize products)

Maize puff may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 19/20*, Ø conc.: 257.5 µg/kg,
sample year: 2007, country: Argentina¹⁰⁸⁵,
*extruded maize product

FUMONISIN B₂
incidence: 14/20*, Ø conc.: 70.4 µg/kg,
sample year: 2007, country: Argentina¹⁰⁸⁵,
*extruded maize product

FUMONISIN B₃
incidence: 6/20*, Ø conc.: 73.3 µg/kg,
sample year: 2007, country: Argentina¹⁰⁸⁵,
*extruded maize product

Maize roti may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN
incidence: 20/30*, conc. range: 1–5 µg/
kg (13 sa), 5–10 µg/kg (7 sa, maximum:
9 µg/kg), sample year: unknown, country:
India¹⁹⁴, *cooked maize roti

Maize roti is a bread made of corn flour.

Maize silk see Medicinal plant

Maize snacks see Snack

Maize soup see Soup (maize soup)

Maize starch see Starch (maize starch)

Maize Teff see Teff

Maize (infant cream corn) may contain the following mycotoxins:

FUMONISINS
incidence: 1/1, conc.: 200 µg/kg, sample
year: unknown, country: USA³⁵⁷

Maize-based thickeners may contain the following mycotoxins:

Fusarium Toxins

FUMONISINS (B₁, B₂, B₃)
incidence: 4/21, conc. range: 14–110 µg/kg,
sample year: 1994/1995, country: UK³⁸³

MONILIFORMIN

incidence: 1/20, conc.: 29 µg/kg, sample
year: unknown, country: UK⁷⁴³

Malaga see Wine

Malt may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/6*, conc.: 0.25 µg/kg, sample
year: unknown, country: Korea¹⁰⁰⁹,
*powdered malt

Fusarium Toxins

DEOXYNIVALENOL

incidence: 25/33, Ø conc.: 42 µg/kg, sample
year: 2005–2008, country: Korea¹³⁰³

Malt (barley malt) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/4, conc. range: 0.20–4.07 µg/
kg, Ø conc.: 1.50 µg/kg, sample year:
unknown, country: Italy¹³²⁸

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 11/94, conc. range: 0.03–
1.2 µg/kg, sample year: 1996, country:
Germany⁵⁹⁶

incidence: 23/24, conc. range:
0.5–6.6 µg/kg, sample year: 2002, country:
Turkey⁶⁰⁸

OCHRATOXIN B

incidence: 5/94, conc. range: 0.02–
0.04 µg/kg, sample year: 1996, country:
Germany⁵⁹⁶

Fusarium Toxins

DEOXYNIVALENOL

incidence: 12/37, conc. range: 10–20 µg/kg (4 sa), 20–100 µg/kg (8 sa), sample year: unknown, country: UK⁴⁵⁰

incidence: 4/4, conc. range: 22–5,840 µg/kg, Ø conc.: 1,595 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *ncac (4 sa co-contaminated with DON, NIV, and ZEA)

incidence: 5/5, conc. range: 118–2,476 µg/kg, Ø conc.: 782 µg/kg, sample year: 1984, country: Korea⁴⁷⁰ (5 sa co-contaminated with DON, NIV, and ZEA)

incidence: 4/5, conc. range: 7–140 µg/kg, Ø conc.: 40 µg/kg, sample year: 1980, country: Canada⁵²¹

incidence: 1/8, conc.: 70 µg/kg, sample year: 1981, country: Canada⁵²¹

incidence: 3/3, conc. range: Ø conc.: 390 µg/kg, sample year: 2002, country: Korea¹²⁴⁷

incidence: 4/5* **, conc. range: 5,400–26,500 µg/kg, Ø conc.: 15,700 µg/kg, sample year: unknown, country: USA¹³⁹³, *dockage, **made from **Barley, Deoxynivalenol**, no¹³⁹³, as well as **Beer, Deoxynivalenol** no¹³⁹³

incidence: 2/5* **, conc. range: 1,100–2,500 µg/kg, Ø conc.: 1,800 µg/kg, sample year: unknown, country: USA¹³⁹³, *steep-out, **made from **Barley, Deoxynivalenol**, no¹³⁹³, as well as **Beer, Deoxynivalenol** no¹³⁹³

incidence: 4/5* **, conc. range: 1,500–12,300 µg/kg, Ø conc.: 5,775 µg/kg, sample year: unknown, country: USA¹³⁹³, *5-day green malt, **made from **Barley, Deoxynivalenol**, no¹³⁹³, as well as **Beer, Deoxynivalenol** no¹³⁹³, (further *Fusarium*-Toxins detected)

incidence: 4/5* **, conc. range: 1,400–12,300 µg/kg, Ø conc.: 5,500 µg/kg, sample year: unknown, country: USA¹³⁹³, *kilned

malt, **made from **Barley, Deoxynivalenol**, no¹³⁹³, as well as **Beer, Deoxynivalenol** no¹³⁹³, (further *Fusarium*-Toxins detected)

incidence: 4/5* **, conc. range: 3,900–50,600 µg/kg, Ø conc.: 18,500 µg/kg, sample year: unknown, country: USA¹³⁹³, *malt rootlets, **made from **Barley, Deoxynivalenol**, no¹³⁹³, as well as **Beer, Deoxynivalenol** no¹³⁹³, (further *Fusarium*-Toxins detected)

incidence: 4/5* **, conc. range: 1,790–17,300 µg/kg, Ø conc.: 7,197.5 µg/kg, sample year: unknown, country: USA¹³⁹³, *malt grist (over U.S. 84), **made from **Barley, Deoxynivalenol**, no¹³⁹³, as well as **Beer, Deoxynivalenol** no¹³⁹³, (15-AcDON detected)

incidence: 4/5* **, conc. range: 1,320–11,000 µg/kg, Ø conc.: 5,280 µg/kg, sample year: unknown, country: USA¹³⁹³, *malt flour (through U.S. 84), **made from **Barley, Deoxynivalenol**, no¹³⁹³, as well as **Beer, Deoxynivalenol** no¹³⁹³

NIVALENOL

incidence: 4/4, conc. range: 122–436 µg/kg, Ø conc.: 243 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *ncac (4 sa co-contaminated with DON, NIV, and ZEA)

incidence: 5/5, conc. range: 631–2,675 µg/kg, Ø conc.: 1,459 µg/kg, sample year: 1984, country: Korea⁴⁷⁰ (5 sa co-contaminated with DON, NIV, and ZEA)

ZEARALENONE

incidence: 4/4, conc. range: 2–36 µg/kg, Ø conc.: 19 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *ncac (4 sa co-contaminated with DON, NIV, and ZEA)

incidence: 5/5, conc. range: 3–48 µg/kg, Ø conc.: 23 µg/kg, sample year: 1984, country: Korea⁴⁷⁰ (5 sa co-contaminated with DON, NIV, and ZEA)

Malt (maize malt) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 1/13, conc.: 1.71 µg/kg, sample year: unknown, country: Zambia/Canada⁷⁹⁷, sa from Zambia

Fusarium Toxins

ZEARALENONE

incidence: ?/13, conc. range: 800–4,000 µg/kg, sample year: unknown, country: Zambia/Canada⁷⁹⁷, sa from Zambia

Malt (sorghum malt) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 6/6*, conc. range: 6.1–54.6 µg/kg, Ø conc.: 17.57 µg/kg, sample year: 2009, country: Malawi/Botswana¹⁶⁴¹, sa from Malawi, *sorghum malt for making thobwa

incidence: 21/21*, conc. range: 4.3–1,138.8 µg/kg, Ø conc.: 408.45 µg/kg, sample year: 2009, country: Malawi/Botswana¹⁶⁴¹, sa from Malawi, *sorghum malt for making beer

Fusarium Toxins

FUMONISIN B₁

incidence: 3/46, conc. range: 47–1,316 µg/kg, sample year: unknown, country: Botswana¹²⁹⁸

ZEARALENONE

incidence: 26/46, conc. range: 102–2,213 µg/kg, sample year: unknown, country: Botswana¹²⁹⁸

Malt drink see Drink

Malting-barley see Malt (barley malt)

Mandarin fruits see Fruit (Mandarin fruit)

Mango see Fruit (mango)

Mango juice see Juice (mango juice)

Marchpane (almond paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/168, conc.: 93 µg/kg, sample year: 1974, country: Finland¹³⁸ (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 1/168, conc.: 7 µg/kg, sample year: 1974, country: Finland¹³⁸ (1 sa co-contaminated with AFB₁ and AFB₂)

Maribo cheese see Cheese (Maribo cheese)

Marmalade (apple marmalade) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 6/26, conc. range: 17–39 µg/kg, Ø conc.: 27.0 µg/kg, sample year: unknown, country: Argentina¹⁰⁹⁴

Marmalade (pear marmalade) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/6, conc.: 25 µg/kg, sample year: unknown, country: Argentina¹⁰⁹⁴

Masa may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 2/2*, conc. range: 590–1,800 µg/kg, Ø conc.: 1,195 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico, *harina de maíz nixtamalizado (1 sa co-contaminated with FB₁, HFB₁, and FB₂, 1 sa co-contaminated with FB₁ and FB₂)

incidence: 4/4*, conc. range: 40–1,290 µg/kg, Ø conc.: 445 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico and USA, *included masa harina de maiz, corn tortilla mix, instant corn masa mix, and harina de maiz nixtamalizado (1 sa co-contaminated with FB₁, HFB₁, and FB₂, 1 sa co-contaminated with FB₁ and HFB₁, 1 sa co-contaminated with FB₁ and FB₂, 1 sa contaminated solely with FB₁)

incidence: 1/1, conc.: 17 µg/kg, sample year: 1989, country: USA³⁶⁹ (1 sa co-contaminated with FB₁ and HFB₁)

incidence: 8/8*, conc. range: 63–689 µg/kg, Ø conc.: 262 µg/kg, sample year: unknown, country: USA/Mexico⁴⁰⁹, *white masa type (6 sa co-contaminated with FB₁ and HFB₁, 2 sa contaminated solely with FB₁)

incidence: 2/4, conc. range: 103.9–196.9 µg/kg, Ø conc.: 150.4 µg/kg, sample year: 2001, country: USA⁸⁶⁹

HYDROLYZED FUMONISIN B₁

incidence: 1/2*, conc.: 100 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico, *harina de maiz nixtamalizado (1 sa co-contaminated FB₁, HFB₁, and FB₂)

incidence: 2/4*, conc. range: 20–100 µg/kg, Ø conc.: 60 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico and USA, *included masa harina de maiz, corn tortilla mix, instant corn masa mix, and harina de maiz nixtamalizado (1 sa co-contaminated with FB₁, HFB₁, and FB₂, 1 sa co-contaminated with FB₁ and HFB₁)

incidence: 1/1, conc.: pr, sample year: 1989, country: USA³⁶⁹ (1 sa co-contaminated with FB₁ and HFB₁)

incidence: 6/8*, conc. range: 21–178 µg/kg, Ø conc.: 85.8 µg/kg, sample year: unknown, country: USA/Mexico⁴⁰⁹, *white

masa type (6 sa co-contaminated with FB₁ and HFB₁)

FUMONISIN B₂

incidence: 2/2*, conc. range: 110–1,380 µg/kg, Ø conc.: 553 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico, *harina de maiz nixtamalizado (1 sa co-contaminated with FB₁, HFB₁, and FB₂, 1 sa co-contaminated with FB₁ and FB₂)

incidence: 2/4*, conc. range: 60–170 µg/kg, Ø conc.: 115 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico and USA, *included masa harina de maiz, corn tortilla mix, instant corn masa mix, and harina de maiz nixtamalizado (1 sa co-contaminated with FB₁, HFB₁, and FB₂, 1 sa co-contaminated with FB₁ and FB₂)

ZEARALENONE

incidence: ?/7*, conc. range: ≤19.5 µg/kg, sample year: unknown, country: USA¹⁶⁶², *brand A masa (5 sa > 2 µg/kg)

incidence: 2/2*, conc. range: 0.4–0.8 µg/kg, Ø conc.: 0.6 µg/kg, sample year: unknown, country: USA¹⁶⁶², *brand B masa (0 sa > 2 µg/kg)

Masa is a maize dough which is made from freshly prepared hominy.

Masa flour see Flour (masa flour)

Maternal milk see Milk (human breast milk)

Mchuzi mix may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/?, conc.: 25 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

Mchuzi mix is a spice mixture. It is used for a variety of meat dishes.

Meal may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂)

incidence: 6/19*, conc. range: <5 µg/kg (2 sa), 6–20 µg/kg (2 sa), 21–50 µg/kg (1 sa), 56 µg/kg (1 sa), sample year: 1975/1976–?, country: Guatemala³³, *protein supplement meal

Meal (barley meal) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/1* **, conc.: 32 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole meal, **conventional (1 sa co-contaminated with DON and ZEA)

incidence: 0/0* **, no sa investigated, sample year: 1997, country: Germany⁵⁶², *whole meal, ** organic

ZEARALENONE

incidence: 1/1* **, conc.: 6.4 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole meal, **conventional (1 sa co-contaminated with DON and ZEA)

incidence: 0/0* **, no sa investigated, sample year: 1997, country: Germany⁵⁶², *whole meal, ** organic

Meal (buckwheat meal) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5/14, conc. range: ≤12.07 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰

Meal (copra meal) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 20/26, conc. range: 20–500 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN B₂

incidence: 16/26, conc. range: 20–40 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN G₁

incidence: 12/26, conc. range: 40–100 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN G₂

incidence: 10/26, conc. range: 40–100 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN

incidence: 1/3, conc.: 2 µg/kg, sample year: unknown, country: Fiji/Zambia¹²⁴¹, sa from Fiji

incidence: 1/2, conc.: 37 µg/kg, sample year: unknown, country: Fiji/Zambia¹²⁴¹, sa from Tonga

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/384* **, conc.: 10 µg/kg, sample year: 1982/1983, country: India⁷⁹⁴, *dry copra and copra meal, **sa collected during late summer

Meal (cottonseed meal) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/14*, conc. range: 6–20 µg/kg (1 sa), 30 µg/kg (1 sa), sample year: 1975/1976–?, country: Guatemala³³, *ncac

Meal (egusi meal) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B

incidence: 1/1, conc.: 186 µg/kg, sample year: unknown, country: Nigeria⁴

Meal (maize meal) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1* **, conc.: 13.8 µg/kg, sample year: unknown, country: USA¹⁰⁰, *ncac, **yellow corn meal

incidence: 14/?, conc. range: tr–50 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 4/4*, conc. range: ≤0.4 µg/kg, sample year: probably 2005, country: Italy¹⁰⁰¹, *marketed sa grown

conventionally (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 2 sa co-contaminated with AFB₂, 1 sa contaminated solely with AFB₁)

incidence: 3/3*, conc. range: nq–2.9 µg/kg, sample year: probably 2005, country: Italy¹⁰⁰¹, *marketed sa grown organically (1 sa co-contaminated with AFB₁ and AFB₂, 2 sa contaminated solely with AFB₁)

incidence: 8/40*, conc. range: nq–15.6 µg/kg, sample year: 2005, country: Italy¹⁰⁰¹, *field trial sa (2 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁, 5 sa contaminated solely with AFB₁)

incidence: 1/1, conc.: 1.60 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 10/?, conc. range: tr–10 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 3/4*, conc. range: ≤0.1 µg/kg, sample year: probably 2005, country: Italy¹⁰⁰¹, *marketed sa grown

conventionally (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/3*, conc.: 0.1 µg/kg, sample year: probably 2005, country: Italy¹⁰⁰¹, *marketed sa grown organically (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/40*, conc. range: 0.6–1.8 µg/kg, Ø conc.: 1.2 µg/kg, sample year: 2005, country: Italy¹⁰⁰¹, *field trial sa (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/1, conc.: 0.15 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 1/4*, conc.: nq, sample year: probably 2005, country: Italy¹⁰⁰¹,

*marketed sa grown conventionally (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 0/3*, conc. range: no contamination, sample year: probably 2005, country: Italy¹⁰⁰¹, *marketed sa grown organically

incidence: 1/40*, conc.: 1.7 µg/kg, sample year: 2005, country: Italy¹⁰⁰¹, *field trial sa (1 sa co-contaminated with AFB₁ and AFG₁)

AFLATOXINS (B₁, B₂, G₁)

incidence: 4/13, conc. range: <5 µg/kg (1 sa), 6–20 µg/kg (1 sa), 21–50 µg/kg (1 sa), 96 µg/kg (1 sa), sample year: 1975/1976–?, country: Guatemala³³

incidence: 5/8, conc. range: 0.1–0.34 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 8/10, conc. range: 0.15–1.8 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

AFLATOXINS (TOTAL)

incidence: 3/90, conc. range: ≤5.04 µg/kg, Ø conc.: 3.6 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina

AFLATOXINS

incidence: 1/2*, conc.: 129 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/6*, conc.: 0.4 µg/kg, sample year: 2001, country: Hungary⁵⁹³, *coarse maize meal

incidence: 6/10, conc. range: 0.1–5.76 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

Fusarium Toxins

DEOXYNIVALENOL

incidence: 7/11, conc. range: 2,000–19,000 µg/kg, Ø conc.: 5,800 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 8/16, conc. range: 500–1,600 µg/kg, Ø conc.: 1,112.5 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China

incidence: 45/50, conc. range: 20–50 µg/kg (23 sa), 60–110 µg/kg (14 sa), 120–250 µg/kg (8 sa), sample year: 1983, country: USA⁵⁴⁵

incidence: 45/50, conc. range: ≤300 µg/kg, sample year: 1983, country: USA⁵⁶¹

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *conventional

incidence: 2/2*, conc. range: 500–870 µg/kg, Ø conc.: 685 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Germany and unknown origin, *organic (1 sa co-contaminated with DON, FBS, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 5/10, conc. range: 35–109 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₁

incidence: 3/3, conc. range: 603–1,171 µg/kg, Ø conc.: 810.7 µg/kg, sample year: 1997/1998, country: Argentina²⁰⁸

incidence: 9/9, conc. range: 560–4,930 µg/kg, Ø conc.: 2,290 µg/kg, sample year: 1999, country: Brazil²¹⁵

incidence: 3/3*, conc. range: 1,500–4,700 µg/kg, Ø conc.: 2,933 µg/kg, sample year: unknown, country: USA³⁵⁶, *unprocessed corn meal

incidence: 1/3*, conc.: 100 µg/kg, sample year: unknown, country: USA³⁵⁶, *processed corn meal

incidence: 8/28* **, conc. range: 100–400 µg/kg, Ø conc.: 300 µg/kg, sample year: unknown, country: South Africa³⁵⁸, *sa from rural areas, **phuru: cooked maize meal

incidence: 1/1*, conc.: 40 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Venezuela, *white corn meal precooked (1 sa co-contaminated with FB₁ and FB₂)

incidence: 2/2*, conc. range: 210–360 µg/kg, Ø conc.: 285 µg/kg, sample year: 1989/1990, country: USA³⁶⁹, *white corn meal (2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 4/4*, conc. range: 560–840 µg/kg, Ø conc.: 717.5 µg/kg, sample year: 1989/1990, country: USA³⁶⁹, *yellow corn meal (4 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 15/33*, conc. range: 250–2,660 µg/kg, Ø conc.: 775.3 µg/kg, sample year: unknown, country: Turkey³⁸¹, *bought from market and bazaar (1 sa co-contaminated with FB₁ and FB₂, 14 sa contaminated solely with FB₁)

incidence: 7/7*, conc. range: 400–6,320 µg/kg, Ø conc.: 1,906 µg/kg, sample year: 1991, country: USA³⁸⁴, *included 1 self-rising white, 1 yellow enriched and 1 blue corn meal

incidence: 2/7, conc. range: ≤110 µg/kg, Ø conc.: 85 µg/kg, sample year: 1991, country: Switzerland⁴⁰⁰

incidence: ?/3*, conc. range: 500–1,000 µg/kg, sample year: unknown, country: USA⁴⁰³, *yellow corn meal

incidence: ?/3*, conc. range: 600–1,200 µg/kg, sample year: unknown, country: USA⁴⁰³, *white corn meal

incidence: 1/3, conc.: 70 µg/kg, sample year: 1993, country: Spain⁴⁰⁴

incidence: 8/8, conc. range: 510–1,040 µg/kg, Ø conc.: 750 µg/kg, sample year: 1990, country: USA⁴¹⁰ (8 sa co-contaminated with FB₁ and FB₂)

incidence: 9/9, conc. range: 70*–2,050 µg/kg, Ø conc.: 876.7 µg/kg, sample year: 1991, country: USA⁴¹⁰, sa from USA and *Venezuela (9 sa co-contaminated with FB₁ and FB₂)

incidence: 65/74, conc. range: 50–2,980 µg/kg, Ø conc.: 423.7 µg/kg, sample year: 1990/1991, country: South Africa⁴¹³, sa from Canada, Egypt, Peru, South Africa, and USA

incidence: 7/16, conc. range: 600–8,800 µg/kg, Ø conc.: 2,128.6 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China

incidence: 89/89, conc. range: 171–5,825 µg/kg, Ø conc.: 1,673 µg/kg, sample year: 2002, country: South Africa⁶¹⁵, sa from Brazil (89 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 13/15*, conc. range: 25–230 µg/kg, Ø conc.: 118 µg/kg, sample year: 1998, country: Colombia⁶⁷², *pre-cooked maize meal (7 sa co-contaminated with FB₁ and FB₂, 6 sa contaminated solely with FB₁)

incidence: 4/7, conc. range: 36–408 µg/kg, Ø conc.: 216 µg/kg, sample year: 1998, country: Colombia⁶⁷² (2 sa co-contaminated with FB₁ and FB₂, 2 sa contaminated solely with FB₁)

incidence: 4/4, conc. range: 35–255 µg/kg, Ø conc.: 185 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana (1 sa co-contaminated with FB₁, FB₂, and FB₃,

1 sa co-contaminated with FB₁, FB₂, and ZEA, 2 sa contaminated solely with FB₁)

incidence: 2/2, conc. range: 60–70 µg/kg, Ø conc.: 65 µg/kg, sample year: unknown, country: South Africa⁷⁶³

incidence: 1/1, conc.: 740 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zambia (1 sa co-contaminated with FB₁, FB₂ and FB₃)

incidence: 4/4, conc. range: 55–1,910 µg/kg, Ø conc.: 625 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zimbabwe (2 sa co-contaminated with FB₁, FB₂ and FB₃, 2 sa contaminated solely with FB₁)

incidence: 19/21, conc. range: 60–2,860 µg/kg, Ø conc.: 556 µg/kg, sample year: 1997, country: Argentina⁸¹⁷

incidence: 30/30, conc. range: 1,080–15,290 µg/kg, Ø conc.: 5,170 µg/kg, sample year: 2000, country: Brazil⁹⁴⁶

incidence: 14/14, conc. range: 21–539 µg/kg, Ø conc.: 148 µg/kg, sample year: 1999, country: Argentina⁹⁵⁵

incidence: 62/62*, conc. range: 160–4,740 µg/kg, Ø conc.: 1,240 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, *fubá

incidence: 11/11*, conc. range: 593–2,560 µg/kg, Ø conc.: 1,430 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, *crème de milho

incidence: 1/1, conc.: 200 µg/kg, sample year: 2001, country: Bulgaria⁹⁸⁰

incidence: 20/32*, conc. range: 1,050–22,880 µg/kg, sample year: 2002, country: Mexico¹⁰⁵⁰, sa from supermarkets, *nixtamalized corn meal

incidence: 17/18*, conc. range: 3,840–22,570 µg/kg, sample year: 2002, country: Mexico¹⁰⁵⁰, sa from retail outlets, *nixtamalized corn meal

incidence: 20/20*, conc. range: 3,340–24,820 µg/kg, sample year: 2002, country: Mexico¹⁰⁵⁰, sa from grocery stores, *nixtamalized corn meal

incidence: 34/71*, conc. range: ≤890 µg/kg, sample year: 2003, country: Mexico¹⁰⁵⁰,

sa from retail outlets, *nixtamalized corn meal

incidence: 15/15, conc. range: 1,100–2,400 µg/kg, Ø conc.: 1,500 µg/kg, sample year: unknown, country: Italy¹⁰⁷⁶
 incidence: 2/2*, conc. range: 850–920 µg/kg, Ø conc.: 890 µg/kg, sample year: unknown, country: Italy¹⁰⁷⁶, *corn meal steam-treated

incidence: 4/4* **, conc. range: 240–625 µg/kg, Ø conc.: 377.5 µg/kg, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **commercial corn meal (4 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

incidence: 41/41, conc. range: 50–130 µg/kg (1 sa), 131–400 µg/kg (15 sa), 401–900 µg/kg (22 sa), 901–1,300 µg/kg (3 sa), Ø conc.: 474.34 µg/kg, sample year: unknown, country: Portugal¹²⁵⁶

incidence: 3/10, conc. range: 48.2–209.3 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

HYDROLYZED FUMONISIN B₁

incidence: 20/32*, conc. range: 1,460–13,710 µg/kg, sample year: 2002, country: Mexico¹⁰⁵⁰, sa from supermarkets, *nixtamalized corn meal

incidence: 17/18*, conc. range: 1,590–4,330 µg/kg, sample year: 2002, country: Mexico¹⁰⁵⁰, sa from retail outlets, *nixtamalized corn meal

incidence: 20/20*, conc. range: 1,220–3,670 µg/kg, sample year: 2002, country: Mexico¹⁰⁵⁰, sa from grocery stores, *nixtamalized corn meal

incidence: 2/71*, conc. range: tr, sample year: 2003, country: Mexico¹⁰⁵⁰, sa from retail outlets, *nixtamalized corn meal

FUMONISIN B₂

incidence: 1/3, conc.: 717 µg/kg, sample year: 1997/1998, country: Argentina²⁰⁸

incidence: 9/9, conc. range: 210–1,380 µg/kg, Ø conc.: 600 µg/kg, sample year: 1999, country: Brazil²¹⁵

incidence: 1/1*, conc.: 10 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Venezuela, *white corn meal precooked (1 sa co-contaminated with FB₁ and FB₂)

incidence: 2/2*, conc. range: 33–58 µg/kg, Ø conc.: 45.5 µg/kg, sample year: 1989/1990, country: USA³⁶⁹, *white corn meal (2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 4/4*, conc. range: 120–414 µg/kg, Ø conc.: 236 µg/kg, sample year: 1989/1990, country: USA³⁶⁹, *yellow corn meal (4 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 1*/33, conc.: 550 µg/kg, sample year: unknown, country: Turkey³⁸¹, *bought from market (1 sa co-contaminated with FB₁ and FB₂)

incidence: 8/8, conc. range: 50–240 µg/kg, Ø conc.: 188.8 µg/kg, sample year: 1990, country: USA⁴¹⁰ (8 sa co-contaminated with FB₁ and FB₂)

incidence: 9/9, conc. range: 20*–360 µg/kg, Ø conc.: 197.8 µg/kg, sample year: 1991, country: USA⁴¹⁰, sa from USA and *Venezuela (9 sa co-contaminated with FB₁ and FB₂)

incidence: 27/74, conc. range: ≤920 µg/kg, Ø conc.: 390.5 µg/kg, sample year: 1990/1991, country: South Africa⁴¹³, sa from Canada, Egypt, Peru, South Africa, and USA

incidence: 4/16, conc. range: 500–2,800 µg/kg, Ø conc.: 1,225 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China

incidence: 89/89, conc. range: 28–1,687 µg/kg, Ø conc.: 415 µg/kg, sample year: 2002, country: South Africa⁶¹⁵, sa from Brazil (89 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 7/15* **, conc. range: 33–81 µg/kg, Ø conc.: 43 µg/kg, sample year: 1998, country: Colombia⁶⁷², *pre-cooked maize meal (7 sa co-contaminated with FB₁ and FB₂)

incidence: 2/7*, conc. range: 65–105 µg/kg, Ø conc.: 85 µg/kg, sample year: 1998,

country: Colombia⁶⁷² (2 sa co-contaminated with FB₁ and FB₂)

incidence: 2/4, conc. range: 75–85 µg/kg, Ø conc.: 80 µg/kg, sample year: unknown,

country: South Africa⁷⁶³, sa from Botswana (1 sa co-contaminated with FB₁, FB₂, and FB₃), 1 sa co-contaminated with FB₁, FB₂, and ZEA)

incidence: 2/4, conc. range: 150–620 µg/kg, Ø conc.: 385 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zimbabwe (2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 1/1, conc.: 380 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zambia (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 12/21, conc. range: 61–1,090 µg/kg, Ø conc.: 232 µg/kg, sample year: 1997, country: Argentina⁸¹⁷

incidence: 30/30, conc. range: 230–3,940 µg/kg, Ø conc.: 1,000 µg/kg, sample year: 2000, country: Brazil⁹⁴⁶

incidence: 11/14, conc. range: ≤312 µg/kg, Ø conc.: 52.5 µg/kg*, sample year: 1999, country: Argentina⁹⁵⁵, *of pos sa?

incidence: 62/62*, conc. range: 110–1,570 µg/kg, Ø conc.: 439 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, *fubá

incidence: 11/11*, conc. range: 251–1,090 µg/kg, Ø conc.: 617 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, *crème de milho

incidence: 15/15, conc. range: 110–260 µg/kg, Ø conc.: 180 µg/kg, sample year: unknown, country: Italy¹⁰⁷⁶

incidence: 2/2*, conc. range: 67–78 µg/kg, Ø conc.: 73 µg/kg, sample year: unknown, country: Italy¹⁰⁷⁶, *corn meal steam-treated

incidence: 4/4* **, conc. range: 70–215 µg/kg, Ø conc.: 116.3 µg/kg, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac, **commercial corn meal (4 sa co-contaminated with FB₁, FB₂, FB₃, and epi-FB₃)

incidence: 29/41, conc. range: 50–130 µg/kg (24 sa), 131–400 µg/kg (5 sa), sample year: unknown, country: Portugal¹²⁵⁶

incidence: 3/10, conc. range: 58.7–113.5 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₃

incidence: 2/2*, conc. range: pr, sample year: 1989/1990, country: USA³⁶⁹, *white corn meal (2 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 4/4*, conc. range: pr, sample year: 1989/1990, country: USA³⁶⁹, *yellow corn meal (4 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 2/16, conc. range: 600–900 µg/kg, Ø conc.: 750 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China

incidence: 89/89, conc. range: 16–549 µg/kg, Ø conc.: 154 µg/kg, sample year: 2002, country: South Africa⁶¹⁵, sa from Brazil (89 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 1/4, conc.: 30 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 2/4, conc. range: 55–205 µg/kg, Ø conc.: 130 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zimbabwe (2 sa co-contamination with FB₁, FB₂, and FB₃)

incidence: 1/1, conc.: 85 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Zambia (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 11/21, conc. range: 18–1,015 µg/kg, Ø conc.: 150 µg/kg, sample year: 1997, country: Argentina⁸¹⁷

incidence: 10/14, conc. range: ≤271 µg/kg, Ø conc.: 28.3 µg/kg*, sample year: 1999, country: Argentina⁹⁵⁵, *of pos sa?

incidence: 4/4* **, conc. range: 15–60 µg/kg, Ø conc.: 32.5 µg/kg, sample year: unknown, country: South Africa¹¹⁸⁹, *ncac,

**commercial corn meal (4 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

3-*epi*-FUMONISIN B₃

incidence: 4/4* **, conc. range: 2–5 µg/kg, Ø conc.: 3.25 µg/kg, sample year: unknown, country: South Africa¹¹⁸⁹,

*ncac, **commercial corn meal (4 sa co-contaminated with FB₁, FB₂, FB₃, and *epi*-FB₃)

FUMONISINS (B₁, B₂)

incidence: 21/21, conc. range: 25–1,334 µg/kg, Ø conc.: 310 µg/kg, sample year: 2008/2009, country: Italy¹⁹²

incidence: 34/37*, conc. range: ≤6,617 µg/kg, sample year: 2004, country: Germany²⁴⁴, *maiz meal and semolina

FUMONISINS

incidence: 4/4*, conc. range: 650–7,450 µg/kg, Ø conc.: 3,075 µg/kg, sample year: unknown, country: USA³⁵⁷, *white corn meal

incidence: 6/6*, conc. range: 450–4,750 µg/kg, Ø conc.: 1,558 µg/kg, sample year: unknown, country: USA³⁵⁷, *yellow corn meal

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *conventional

incidence: 1/2*, conc.: 7.1 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Germany and unknown origin, *organic (1 sa co-contaminated with DON, FBS, and ZEA)

incidence: 10/10*, conc. range: 101–3,308 µg/kg, sample year: unknown, country: Italy¹⁴⁶⁵, *gluten-free corn meal

FUMONISINS (TOTAL)

incidence: 90/90, conc. range: 144–2,003 µg/kg, Ø conc.: 761 µg/kg, sample year: 2001–2004, country: Spain⁹⁹⁷, sa (batches of whole corn) from Argentina

HT-2 TOXIN

incidence: 4/10, conc. range: 29.5–81.8 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

MONILIFORMIN

incidence: 26/26, conc. range: 50–180 µg/kg, Ø conc.: 85.6 µg/kg, sample year: 1990, country: UK/Poland⁵²⁴, sa from France, UK, USA, and unknown origin

T-2 TOXIN

incidence: 4/10, conc. range: 31.7–50.7 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

ZEARALENONE

incidence: 2/8, conc. range: 2.5–2.9 µg/kg, Ø conc.: 2.7 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

incidence: 3/11, conc. range: 8–100 µg/kg, Ø conc.: 38 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 2/16, conc. range: 500 µg/kg, Ø conc.: 500 µg/kg, sample year: 1996, country: China/USA⁴⁷⁸, sa from China

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *conventional

incidence: 2/2*, conc. range: 38–65 µg/kg, Ø conc.: 51.5 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Germany and unknown origin, *organic (1 sa co-contaminated with DON, FBS, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 9/11, conc. range: 11–69 µg/kg, Ø conc.: 33.1 µg/kg, sample year: unknown, country: USA⁵⁶⁷

incidence: 1/4, conc.: 100 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana (1 sa co-contaminated with FB₁, FB₂, and ZEA)

incidence: 7/9, conc. range: 3.2–120 µg/kg, Ø conc.: 23 µg/kg, sample year: 1985, country: USA⁸³¹

incidence: 4/10, conc. range: 1–13.47 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

ZEARALENONE-4-SULFATE

incidence: 1/3*, conc.: 1.3 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *maize meal and flour

see also Flour (maize)

Meal (millet meal) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/1*, conc.: 720 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia

NIVALENOL

incidence: 1/1*, conc.: 1,540 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia

ZEARALENONE

incidence: 1/1*, conc.: 440 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia

Meal (oat meal) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 7/54, conc. range: ≤2.50 µg/kg, Ø conc.: 0.79 µg/kg, sample year: 2004–2007, country: Japan⁹⁰⁰

incidence: 10/20, conc. range: 0.06–0.18 µg/kg, Ø conc.: 0.09 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵

Fusarium Toxins

BEAUVERICIN

incidence: 1/1*, conc.: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 1/1*, conc.: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, and ENB₁)

DEOXYNIVALENOL

incidence: 8/18, conc. range: ≤19 µg/kg, sample year: 2007–2009, country: USA¹⁰⁵⁹

incidence: 1/1*, conc.: 63 µg/kg, sample

year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 1/1*, conc.: 22 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, and ENB₁)

incidence: 5/13, conc. range: ≤91 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

3-ACETYLDEOXYNIVALENOL

incidence: 0/1*, conc.: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional

incidence: 1/1*, conc.: 16 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, and ENB₁)

incidence: ?/13, conc. range: ≤116 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

15-ACETYLDEOXYNIVALENOL

incidence: ?/13, conc. range: ≤27 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: ?/13, conc. range: ≤97 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

ENNIATIN A₁

incidence: 1/1*, conc.: <4 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 1/1*, conc.: <4 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, and ENB₁)

ENNIATIN B

incidence: 1/1*, conc.: <3.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa

co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 1/1*, conc.: <3.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, and ENB₁)

ENNIATIN B₁

incidence: 1/1*, conc.: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *conventional (1 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 1/1*, conc.: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, 3-AcDON, ENA₁, ENB, and ENB₁)

α-ZEARALENOL

incidence: ?/13, conc. range: ≤68 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

α-ZEARALENOL-4-GLUCOSIDE

incidence: 1/13, conc.: 10 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

β-ZEARALENOL

incidence: ?/13, conc. range: ≤46 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

β-ZEARALENOL-4-GLUCOSIDE

incidence: 2/13, conc. range: ≤10 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

ZEARALENONE

incidence: 8/13, conc. range: 6–85 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

ZEARALENONE-4-GLUCOSIDE

incidence: 2/13, conc. range: 9–91 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

ZEARALENONE-4-SULFATE

incidence: 2/13, conc. range: ≤36 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

see also Flour (oat)

Meal (peanut meal) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/4*, conc. range: 125–6,250 µg/kg, Ø conc.: 2,217 µg/kg, sample year: unknown, country: USA³⁶, *ncac

incidence: 1/1*, conc.: 35.7 µg/kg, sample year: unknown, country: USA¹⁰⁰, *ncac

incidence: 1/1* **, conc.: 269 µg/kg, sample year: unknown, country: USA¹⁰⁰, *ncac, **de-oiled peanut meal

Meal (pistachio meal) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1*, conc.: 61.0 µg/kg, sample year: unknown, country: Denmark¹⁹³

AFLATOXIN B₂

incidence: 1/1*, conc.: 5.6 µg/kg, sample year: unknown, country: Denmark¹⁹³

Meal (posho meal) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/?, conc. range: tr–50 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

AFLATOXIN B₂

incidence: 2/?, conc. range: tr, sample year: 1979, country: Kenya⁷⁴⁶

Meal (rye meal) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 32/43*, conc. range: ≤1.431 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *whole rye meal

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/1* **, conc.: 33 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole rye meal, **conventional (1 sa co-contaminated with DON and ZEA)

incidence: 2/2* **, conc. range: 55–56 µg/kg, Ø conc.: 55.5 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole rye meal, **organic (1 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with DON)

ZEARALENONE

incidence: 1/1* **, conc.: 12 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole rye meal, **conventional (1 sa co-contaminated with DON and ZEA)

incidence: 1/2* **, conc.: 5.3 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole rye meal, **organic (1 sa co-contaminated with DON and ZEA)

see also Flour (rye)

Meal (sorghum meal) may contain the following mycotoxins:

Fusarium ToxinsFUMONISIN B₁

incidence: 2/2, conc. range: 20 µg/kg, Ø conc.: 20 µg/kg, sample year: unknown, country: South Africa⁷⁶³, sa from Botswana

incidence: 1/1, conc.: 28,200 µg/kg, sample year: unknown, country: USA⁷⁷⁸, sa from Burundi

Meal (soybean meal) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 17/17* **, conc. range: <5–600 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by

grain merchants (1 sa co-contaminated with DAS, DON, T-2TET, ZEA, and ZEAOL, 2 sa co-contaminated with DAS, DON, T-2TET, and ZEA, 1 sa co-contaminated with DON, T-2TET, ZEA, and ZEAOL, 3 sa co-contaminated with DAS, DON, and T-2TET, 1 sa co-contaminated with DON, T-2TET, and ZEA, 8 sa co-contaminated with DON and T-2TET, 1 sa contaminated solely with DON)

DIACETOXYSCIRPENOL

incidence: 6/17* **, conc. range: <5–130 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (1 sa co-contaminated with DAS, DON, T-2TET, ZEA, and ZEAOL, 2 sa co-contaminated with DAS, DON, T-2TET, and ZEA, 3 sa co-contaminated with DAS, DON, and T-2TET)

T-2 TETRAOL (PRIMARILY HT-2)

incidence: 15/17* **, conc. range: <5–1,420 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (1 sa co-contaminated with DAS, DON, T-2TET, ZEA, and ZEAOL, 2 sa co-contaminated with DAS, DON, T-2TET, and ZEA, 1 sa co-contaminated with DON, T-2TET, ZEA, and ZEAOL, 3 sa co-contaminated with DAS, DON, and T-2TET, 8 sa co-contaminated with DON and T-2TET)

ZEARALENOL

incidence: 2/17* **, conc. range: 180 µg/kg, Ø conc.: 180 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (1 sa co-contaminated with DAS, DON, T-2TET, ZEA, and ZEAOL, 1 sa co-contaminated with DON, T-2TET, ZEA, and ZEAOL)

ZEARALENONE

incidence: 5/17* **, conc. range: 180–760 µg/kg, Ø conc.: 380 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (1 sa co-contaminated with

DAS, DON, T-2TET, ZEA, and ZEAOL, 2 sa co-contaminated with DAS, DON, T-2TET, and ZEA, 1 sa co-contaminated with DON, T-2TET, ZEA, and ZEAOL, 1 sa co-contaminated with DON, T-2TET, and ZEA)

Meal (spelt meal) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 18/21*, conc. range: ≤ 9.429 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *spelt whole meal

see also Flour (spelt wheat)

Meal (wheat meal) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 18/18*, conc. range: ≤ 1.197 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *whole wheat meal

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/3* **, conc. range: 60–90 $\mu\text{g}/\text{kg}$, \emptyset conc.: 75 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole wheat meal, **conventional (2 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with DON)

incidence: 4/4* **, conc. range: 41–180 $\mu\text{g}/\text{kg}$, \emptyset conc.: 101 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole wheat meal, **organic (3 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with DON)

ZEARALENONE

incidence: 2/3* **, conc. range: 11–12 $\mu\text{g}/\text{kg}$, \emptyset conc.: 11.5 $\mu\text{g}/\text{kg}$, sample year:

1997, country: Germany⁵⁶², sa from unknown origin, *whole wheat meal, **conventional (2 sa co-contaminated with DON and ZEA)

incidence: 3/4* **, conc. range: 5.1–10 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6.9 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from unknown origin, *whole wheat meal, **organic (3 sa co-contaminated with DON and ZEA)

see also Flour (wheat)

Meat may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 6/60*, conc. range: 0.15–5.10 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Jordan¹⁵⁰⁶, *locally produced cow, goat, and sheep meat

incidence: 6/20*, conc. range: 1.10–8.32 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Jordan¹⁵⁰⁶, *imported beef

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/6*, conc. range: 0.1–2.2 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Tunisia/France⁶³⁴, sa from Tunisia, *meat and fish

Fusarium Toxins

ZEARALENONE

incidence: 5/25*, conc. range: 3.2–11.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8.7 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁴⁴³, *fresh meat

incidence: 6/25*, conc. range: 3.3–13.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6.3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁴⁴³, *frozen meat

incidence: 5/20*, conc. range: 1.9–9.92 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7.2 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁴⁴³, *minced meat

Meat (luncheon meat) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/25, conc.: 4 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 7/50, conc. range: 0.5–11.1 µg/kg, Ø conc.: 3 µg/kg, sample year: unknown, country: Egypt⁷⁵ (1 sa co-contaminated with AFB₁ and AFG₁, 6 sa contaminated solely with AFB₁)

AFLATOXIN B₂

incidence: 1/25, conc.: 2 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 1/50, conc.: 3.2 µg/kg, sample year: unknown, country: Egypt⁷⁵ (1 sa co-contaminated with AFB₁ and AFG₁)

Fusarium Toxins

ZEARALENONE

incidence: 4/20, conc. range: 1.3–7.5 µg/kg, Ø conc.: 6.4 µg/kg, sample year: unknown, country: Egypt⁴⁴³

Meat (pig meat) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 228/300*, conc. range: 0.03–0.06 µg/kg (134 sa), 0.06–0.09 µg/kg (27 sa), 0.09–0.5 µg/kg (55 sa), 0.5–1.00 µg/kg (3 sa), >1.00 µg/kg (9 sa, maximum: 2.9 µg/kg), sample year: 1999, country: Denmark⁶²⁶, *healthy slaughtered pigs

Meat (poultry meat) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 62/113, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 0.18 µg/kg), sample year: 1993/1994, country: EU¹⁰³⁴, sa from Denmark

Meat products see Product (meat products)

Medicinal herb see Medicinal plant

Medicinal plant may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/22*, conc. range: 1.58–27.80 µg/kg, Ø conc.: 11.19 µg/kg, sample year: unknown, country: China⁸⁵², *traditional Chinese medicines; for detailed information please see the article incidence: 1*/1**, conc.: 500 µg/kg, sample year: unknown, country: USA⁸⁷⁹, **Aerva lanata* (Linn.), **dried sa from Sri Lanka

incidence: 5/9*, conc. range: 0.03–0.45 µg/kg, Ø conc.: 0.188 µg/kg, sample year: 2003, country: Japan/Malaysia⁸⁸⁷, sa from Malaysia, *commercial traditional herbal medicines (3 sa co-contaminated with AFB₁ and AFB₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁); for detailed information please see the article

incidence: 11/14*, conc. range: 0.02–1.00 µg/kg, Ø conc.: 0.289 µg/kg, sample year: 2003, country: Japan/Malaysia⁸⁸⁷, sa from Indonesia, *commercial traditional herbal medicines (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 4 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 4 sa co-contaminated with AFB₁

and AFB₂, 2 sa contaminated solely with AFB₁); for detailed information please see the article

incidence: 14/15*, conc. range: 90–1,200 µg/kg, Ø conc.: 603.6 µg/kg, sample year: unknown, country: India⁹⁸⁵, *herbal drugs; for detailed information please see the article

incidence: 4/10*, Ø conc.: 170 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Glycyrrhiza glabra*; for detailed information please see the article

incidence: 4/10*, Ø conc.: 290 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Holarrhena antidysenterica*; for detailed information please see the article

incidence: 4/10*, Ø conc.: 510 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Ichnocarpus frutescens*; for detailed information please see the article

incidence: 8/10*, Ø conc.: 670 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Strychnos nux-vomica*; for detailed information please see the article

incidence: 6/10*, Ø conc.: 420 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Tribulus terrestris*; for detailed information please see the article

incidence: 1/7*, conc.: 75 µg/kg, sample year: unknown, country: Egypt⁹⁹³, *lime tree

incidence: 1/7*, conc.: 25 µg/kg, sample year: unknown, country: Egypt⁹⁹³, *absinthium

incidence: 1/4*, conc.: 10 µg/kg, sample year: unknown, country: Egypt⁹⁹³, *carob tree

incidence: 3/6*, conc. range: 75–145 µg/kg, Ø conc.: 100 µg/kg, sample year: unknown, country: Egypt⁹⁹³, *chamomile

incidence: 2/4*, conc. range: 50–90 µg/kg, Ø conc.: 70 µg/kg, sample year: unknown, country: Egypt⁹⁹³, *worm wood

incidence: 79/175*, conc. range: 80–910 µg/kg, sample year: 1990, country: India¹⁰²⁷, *crude and finished herbal drugs; for detailed information please see the article

incidence: 4/13*, conc. range: 1.6–7.2 µg/kg, Ø conc.: 3.43 µg/kg, sample year: unknown, country: China¹¹²⁸, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFM₁, 1 sa co-contaminated with AFB₁, AFG₂, and AFM₁, 1 sa co-contaminated with AFB₁ and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₂); for detailed information please see the article

incidence: 1/4*, conc.: 1.3 µg/kg, sample year: unknown, country: China¹¹²⁸, *flowers (1 sa co-contaminated with AFB₁ and AFG₁); for detailed information please see the article

incidence: 5/8*, conc. range: 0.7–1.6 µg/kg, Ø conc.: 1.0 µg/kg, sample year: unknown, country: China¹¹²⁸, *seeds (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₂, 2 sa contaminated solely with AFB₁); for detailed information please see the article

incidence: 1/5*, conc.: 2.4 µg/kg, sample year: unknown, country: China¹¹²⁸, *grasses and leaves (1sa co-contaminated with AFB₁, AFB₂, and AFG₂); for detailed information please see the article

incidence: 5/28*, conc. range: 1.1–11.3 µg/kg, Ø conc.: 4.06 µg/kg, sample year: unknown, country: Thailand/Austria¹⁴⁴⁸, sa from Thailand, *dosage form: tablet or capsule; for detailed information please see the article

incidence: 7/23*, conc. range: 1.2–9.8 µg/kg, Ø conc.: 3.06 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁,

AFG₂, AFM₁, CHAE, MA, and OTA, 1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, CHAE, NIV, OTB, and T-2, 1 sa co-contaminated with AFB₁, CHAE, GLI, MA, OTA, OTB, and T-2, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFM₁, CPA, and NEO, 1 sa co-contaminated with AFB₁, AFG₁, and AFM₁); for detailed information please see the article

incidence: 7/15*, conc. range: 0.5–2.3 µg/kg, Ø conc.: 1.46 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, DAS, MA, PEA, and STG, 1 sa co-contaminated with AFB₁, AFB₂, CHAE, CPA, DPDON, and MA, 1 sa co-contaminated with AFB₁, AFB₂, DAS, GLI, STG, and ZEA, 1 sa co-contaminated with AFB₁, CHAE, STG, ZEA, α-ZEL, and ZEAA, 1 sa co-contaminated with AFB₁, AFB₂, and MA); for detailed information please see the article

incidence: 3/11*, conc. range: 0.2–2.4 µg/kg, Ø conc.: 1.17 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, AFG₁, GLI, MA, OTB, PEA, and STG, 1 sa co-contaminated with AFB₁, DAS, OTA, and OTB, 1 sa co-contaminated with AFB₁, NIV, OTA, and PEA); for detailed information please see the article

incidence: 1/11*, conc.: 0.3 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with AFB₁, AFG₂, CHAE, CPA, DAS, DON3G, PEA, and STG); for detailed information please see the article

incidence: 15/58, conc. range: 3.62–73.27 µg/kg, Ø conc.: 16.7 µg/kg, sample

year: unknown, country: Korea¹⁴⁹⁹ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 8 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁, 4 sa contaminated solely with AFB₁); for detailed information please see the article

incidence: 21/75*, conc. range: 0.06–239.62 µg/kg, Ø conc.: 22.3 µg/kg, sample year: unknown, country: China¹⁶¹⁶, *seeds and fruits (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 5 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFB₁); for detailed information please see the article

incidence: 6/46*, conc. range: 0.47–68.40 µg/kg, Ø conc.: 12.0 µg/kg, sample year: unknown, country: China¹⁶¹⁶, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 5 sa co-contaminated with AFB₁ and AFB₂); for detailed information please see the article

AFLATOXIN B₂

incidence: 3/22*, conc. range: 1.32–5.16 µg/kg, Ø conc.: 3.62 µg/kg, sample year: unknown, country: China⁸⁵², *traditional Chinese medicines; for detailed information please see the article

incidence: 5/9*, conc. range: 0.01–0.03 µg/kg, Ø conc.: 0.018 µg/kg, sample year: 2003, country: Japan/Malaysia⁸⁸⁷, sa from Malaysia, *commercial traditional herbal medicines (3 sa co-contaminated with AFB₁ and AFB₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁); for detailed information please see the article

incidence: 11/14*, conc. range: 0.01–0.40 µg/kg, Ø conc.: 0.096 µg/kg, sample year: 2003, country: Japan/Malaysia⁸⁸⁷, sa from Indonesia, *commercial traditional

herbal medicines (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 4 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 4 sa co-contaminated with AFB₁ and AFB₂,

2 sa contaminated solely with AFB₂); for detailed information please see the article incidence: 5/13*, conc. range: 0.8–7.1 µg/kg, Ø conc.: 3.36 µg/kg, country: China¹¹²⁸, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFM₁, 1 sa co-contaminated with AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₂ and AFG₁, 1 sa co-contaminated with AFB₂ and AFG₂); for detailed information please see the article

incidence: 2/8*, conc. range: 0.8–0.9 µg/kg, Ø conc.: 0.85 µg/kg, country: China¹¹²⁸, *seeds (1 sa co-contaminated with AFB₁ and AFB₂, 1 sa contaminated solely with AFB₂); for detailed information please see the article

incidence: 1/5*, conc.: 1.8 µg/kg, country: China¹¹²⁸, *grasses and leaves (1 sa co-contaminated with AFB₁, AFB₂, and AFG₂); for detailed information please see the article

incidence: 3/28*, conc. range: 0.5–1.0 µg/kg, Ø conc.: 0.7 µg/kg, sample year: unknown, country: Thailand/Austria¹⁴⁴⁸, sa from Thailand, *dosage form: tablet or capsule; for detailed information please see the article

incidence: 6/23*, conc. range: 0.2–7.1 µg/kg, Ø conc.: 4.18 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, MA, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, CHAE, NIV, OTB, and T-2, 1 sa co-contaminated with AFB₂, AFG₁, AFG₂, MON, MA, NEO, and STG, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁,

AFM₁, CPA, and NEO); for detailed information please see the article

incidence: 6/15*, conc. range: 0.5–2.3 µg/kg, Ø conc.: 1.15 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, CHAE, CPA, DPDON, and MA, 1 sa co-contaminated with AFB₁, AFB₂, DAS, GLI, STG, and ZEA, 1 sa co-contaminated with AFB₂, DON3G, MA, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, and MA); for detailed information please see the article

incidence: 1/11*, conc.: 0.2 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₂, CPA, MA, OTA, PA, and STG); for detailed information please see the article

incidence: 12/58, conc. range: 5.48–54.98 µg/kg, Ø conc.: 12.0 µg/kg, sample year: unknown, country: Korea¹⁴⁹⁹ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 8 sa co-contaminated with AFB₁ and AFB₂, 2 sa contaminated solely with AFB₂); for detailed information please see the article

incidence: 19/75*, conc. range: 0.05–13.50 µg/kg, Ø conc.: 2.93 µg/kg, sample year: unknown, country: China¹⁶¹⁶, *seeds and fruits (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 5 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂); for detailed information please see the article

incidence: 6/46*, conc. range: 0.05–1.71 µg/kg, Ø conc.: 0.59 µg/kg, sample year: unknown, country: China¹⁶¹⁶, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 5 sa co-contaminated with AFB₁

and AFB₂); for detailed information please see the article

AFLATOXIN G₁

incidence: 1/22*, conc.: 1.31 µg/kg, sample year: unknown, country: China⁸⁵², *traditional Chinese medicines; for detailed information please see the article

incidence: 2/9*, conc. range: 0.02–0.22 µg/kg, Ø conc.: 0.12 µg/kg, sample year: 2003, country: Japan/Malaysia⁸⁸⁷, sa from Malaysia, *commercial traditional herbal medicines (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁); for detailed information please see the article

incidence: 5/14*, conc. range: 0.02–0.17 µg/kg, Ø conc.: 0.09 µg/kg, sample year: 2003, country: Japan/Malaysia⁸⁸⁷, sa from Indonesia, *commercial traditional herbal medicines (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 4 sa co-contaminated with AFB₁, AFB₂, and AFG₁); for detailed information please see the article

incidence: 5/13*, conc. range: 0.6–2.5 µg/kg, Ø conc.: 1.3 µg/kg, sample year: unknown, country: China¹¹²⁸, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFM₁, 1 sa co-contaminated with AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFG₁, 2 sa co-contaminated with AFB₂ and AFG₁); for detailed information please see the article

incidence: 1/4*, conc.: 0.7 µg/kg, sample year: unknown, country: China¹¹²⁸, *flowers (1 sa co-contamination with AFB₁ and AFG₁); for detailed information please see the article

incidence: 1/8*, conc.: 0.8 µg/kg, sample year: unknown, country: China¹¹²⁸, *seeds (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂); for detailed information please see the article

incidence: 2/28*, conc. range: 0.6–2.0 µg/kg, Ø conc.: 1.3 µg/kg, sample year: unknown, country: Thailand/Austria¹⁴⁴⁸, sa from

Thailand, *dosage form: tablet; for detailed information please see the article

incidence: 4/23*, conc. range: 0.6–2.5 µg/kg, Ø conc.: 1.65 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, MA, and OTA, 1 sa co-contaminated with AFB₂, AFG₁, AFG₂, MON, MA, NEO, and STG, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFM₁, CPA, and NEO, 1 sa co-contaminated with AFB₁, AFG₁, and AFM₁); for detailed information please see the article

incidence: 3/15*, conc. range: 0.2–0.8 µg/kg, Ø conc.: 0.43 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, DAS, MA, PEA, and STG, 1 sa co-contaminated with AFG₁, CHAE, MA, OTA, and OTB); for detailed information please see the article

incidence: 1/11*, conc.: 0.3 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, AFG₁, GLI, MA, OTB, PEA, and STG); for detailed information please see the article

incidence: 3/58, conc. range: 4.86–10.27 µg/kg, Ø conc.: 6.68 µg/kg, sample year: unknown, country: Korea¹⁴⁹⁹ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁); for detailed information please see the article

incidence: 10/75*, conc. range: 0.08–34.21 µg/kg, Ø conc.: 6.4 µg/kg, sample year: unknown, country: China¹⁶¹⁶, *seeds and fruits (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 5 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁); for detailed information please see the article

incidence: 1/46*, conc.: 0.95 µg/kg, sample year: unknown, country: China¹⁶¹⁶, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁); for detailed information please see the article

AFLATOXIN G₂

incidence: 1/14*, conc.: 0.03 µg/kg, sample year: 2003, country: Japan/Malaysia⁸⁸⁷, sa from Indonesia, *commercial traditional herbal medicines (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂); for detailed information please see the article

incidence: 4/13*, conc. range: 1.5–4.8 µg/kg, Ø conc.: 2.75 µg/kg, sample year: unknown, country: China¹¹²⁸, *rhizomes and roots (1 sa co-contaminated with AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFG₂, AFM₁, 1 sa co-contaminated with AFB₁ and AFG₂, 1 sa co-contaminated with AFB₂ and AFG₂); for detailed information please see the article

incidence: 2/8*, conc. range: 0.9–1.5 µg/kg, Ø conc.: 1.2 µg/kg, sample year: unknown, country: China¹¹²⁸, *seeds (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFG₂); for detailed information please see the article

incidence: 1/5*, conc.: 1.6 µg/kg, sample year: unknown, country: China¹¹²⁸, *grasses and leaves (1 sa co-contaminated with AFB₁, AFB₂, and AFG₂); for detailed information please see the article

incidence: 1/28*, conc.: 0.4 µg/kg, sample year: unknown, country: Thailand/Austria¹⁴⁴⁸, sa from Thailand, *dosage form: tablet; for detailed information please see the article

incidence: 4/23*, conc. range: 0.4–4.8 µg/kg, Ø conc.: 1.48 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, MA, and OTA, 1 sa co-contaminated with

AFB₁, AFB₂, AFG₂, CHAE, NIV, OTB, and T-2, 1 sa co-contaminated with AFB₂, AFG₁, AFG₂, MON, MA, NEO, and STG, 1 sa co-contaminated with AFG₂, DPDON, NEO, NIV, OTA, and OTB); for detailed information please see the article

incidence: 2/15*, conc. range: 0.5–1.5 µg/kg, Ø conc.: 1.00 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, DAS, MA, PEA, and STG); for detailed information please see the article

incidence: 1/11*, conc.: 0.2 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with AFB₁, AFG₂, CHAE, CPA, DAS, DON3G, PEA, and STG); for detailed information please see the article

incidence: 1/58, conc.: 1.94 µg/kg, sample year: unknown, country: Korea¹⁴⁹⁹ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂); for detailed information please see the article

incidence: 4/75*, conc. range: 0.09–3.50 µg/kg, Ø conc.: 1.09 µg/kg, sample year: unknown, country: China¹⁶¹⁶, *seeds and fruits (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂); for detailed information please see the article

AFLATOXIN M₁

incidence: 2/13*, conc. range: 0.6–0.7 µg/kg, Ø conc.: 0.65 µg/kg, sample year: unknown, country: China¹¹²⁸, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFM₁, 1 sa co-contaminated with AFB₁, AFG₂, and AFM₁); for detailed information please see the article

incidence: 5/23*, conc. range: 0.2–1.2 µg/kg, Ø conc.: 0.68 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with

AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFM₁, CPA, and NEO, 1 sa co-contaminated with AFM₁, CIT, GLI, MA, NEO, and STG, 1 sa co-contaminated with AFB₁, AFG₁, and AFM₁); for detailed information please see the article

incidence: 1/15*, conc.: 0.4 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA); for detailed information please see the article

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/11*, conc. range: 15.1–15.2 µg/kg, Ø conc.: 15.15 µg/kg, sample year: unknown, country: USA¹⁵⁷¹, *wild simulated ginseng roots; for detailed information please see the article

incidence: 1/1*, conc.: 16 µg/kg, sample year: unknown, country: USA¹⁵⁷¹, *moldy ginseng root; for detailed information please see the article

AFLATOXINS

incidence: 81/84*, conc. range: 1.4–10 µg/kg (11 sa), 10.1–20 µg/kg (16 sa), 20.1–50 µg/kg (26 sa), 50.1–90 µg/kg (13 sa), 90.1–100 µg/kg (4 sa), 100.1–855 µg/kg (11 sa), sample year: unknown, country: Spain¹³⁸⁹, *medicinal and aromatic herbs; for detailed information please see the article

GLIOTOXIN

incidence: 7/23*, conc. range: 0.3–6.7 µg/kg, Ø conc.: 3.27 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with AFB₁, CHAE, GLI, MA, OTA, OTB, and T-2, 1 sa co-contaminated

with CPA, GLI, MA, STG, and VER, 1 sa co-contaminated with AFM₁, CIT, GLI, MA, NEO, and STG, 1 sa co-contaminated with CHAE, CPA, and GLI, 1 sa co-contaminated with GLI, MA, and OTA); for detailed information please see the article

incidence: 3/15*, conc. range: 0.5–3.2 µg/kg, Ø conc.: 1.93 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, DAS, GLI, STG, and ZEA); for detailed information please see the article

incidence: 1/11*, conc.: 1.8 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, AFG₁, GLI, MA, OTB, PEA, and STG); for detailed information please see the article

incidence: 2/11*, conc. range: 2.1–2.5 µg/kg, Ø conc.: 2.3 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with GLI, MON, and T-2, 1 sa contaminated solely with GLI); for detailed information please see the article

STERIGMATOCYSTIN

incidence: 10/23*, conc. range: 0.3–10.8 µg/kg, Ø conc.: 2.77 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with AFB₂, AFG₁, AFG₂, MON, MA, NEO, and STG, 1 sa co-contaminated with AFM₁, CIT, GLI, MA, NEO, and STG, 1 sa co-contaminated with CHAE, MA, and STG, 1 sa co-contaminated with CIT, DON3G, MON, PA, and STG, 1 sa

co-contaminated with CIT, DAS, STG, and VER, 1 sa co-contaminated with CPA, GLI, MA, STG, and VER, 1 sa co-contaminated with CHAE, STG, and ZEA, 1 sa co-contaminated with CHAE and STG); for detailed information please see the article incidence: 8/15*, conc. range: 0.2–7.6 µg/kg, Ø conc.: 2.09 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, DAS, MA, PEA, and STG, 1 sa co-contaminated with FUS-X, MA, NEO, OTA, OTB, PA, and STG, 1 sa co-contaminated with AFB₁, AFB₂, DAS, GLI, STG, and ZEA, 1 sa co-contaminated with AFB₁, CHAE, STG, ZEA, α-ZEL, and ZEAA, 1 sa co-contaminated with AFB₂, DON3G, MA, STG, and VER, 1 sa co-contaminated with CPA and STG); for detailed information please see the article incidence: 6/11*, conc. range: 0.8–9.6 µg/kg, Ø conc.: 4.37 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, AFG₁, GLI, MA, OTB, PEA, and STG, 1 sa co-contaminated with AFB₂, CPA, MA, OTA, PA, and STG, 1 sa co-contaminated with CPA, MA, MON, and STG, 1 sa co-contaminated with DON3G, MA, STG, and ZEA, 1 sa co-contaminated with CPA, NIV, and STG, 1 sa co-contaminated with MA, PEA, and STG); for detailed information please see the article incidence: 2/11*, conc. range: 0.2–0.6 µg/kg, Ø conc.: 0.4 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with AFB₁, AFG₂, CHAE, CPA, DAS, DON3G, PEA, and STG, 1 sa co-contaminated with MON and STG); for detailed information please see the article

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/10*, Ø conc.: 80 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Holarrhena antidysenterica*; for detailed information please see the article

incidence: 14/175*, conc. range: 20–160 µg/kg, sample year: 1990, country: India¹⁰²⁷, *crude and finished herbal drugs; for detailed information please see the article

incidence: 51/84*, conc. range: 17–30 µg/kg (15 sa), 31–50 µg/kg (16 sa), 51–100 µg/kg (12 sa), 110–200 µg/kg (4 sa), 250–400 µg/kg (3 sa), >400 µg/kg (1 sa), sample year: unknown, country: Spain¹³⁸⁹, *medicinal and aromatic herbs; for detailed information please see the article

incidence: 4/23*, conc. range: 0.3–5.1 µg/kg, Ø conc.: 1.75 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFM₁, CIT, GLI, MA, NEO, and STG, 1 sa co-contaminated with CIT, DON3G, MON, PA, and STG, 1 sa co-contaminated with CIT, DAS, STG, and VER); for detailed information please see the article

incidence: 1/11*, conc.: 8.5 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with CIT, HT-2, MA, OTA, and OTB); for detailed information please see the article

CYCLOPIAZONIC ACID

incidence: 6/23*, conc. range: 0.5–36.1 µg/kg, Ø conc.: 11.45 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂,

AFG₁, AFM₁, CPA, and NEO, 1 sa co-contaminated with CPA, GLI, MA, STG, and VER, 1 sa co-contaminated with CHAE, CPA, DON3G, and PEA, 1 sa co-contaminated with CHAE, CPA, and GLI); for detailed information please see the article

incidence: 4/15*, conc. range: 2.4–6.8 µg/kg, Ø conc.: 4.15 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, CHAE, CPA, DPDON, and MA, 1 sa co-contaminated with CPA and STG); for detailed information please see the article

incidence: 3/11*, conc. range: 0.3–9.8 µg/kg, Ø conc.: 3.5 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₂, CPA, MA, OTA, PA, and STG, 1 sa co-contaminated with CPA, MA, MON, and STG, 1 sa co-contaminated with CPA, NIV, and STG; for detailed information please see the article

incidence: 2/11*, conc. range: 2.1–2.8 µg/kg, Ø conc.: 2.45 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with AFB₁, AFG₂, CHAE, CPA, DAS, DON3G, PEA, and STG, 1 sa co-contaminated with CPA and PEA); for detailed information please see the article

OCHRATOXIN A

incidence: 25/57*, conc. range: 1.2–158.7 µg/kg, Ø conc.: 23.4 µg/kg, sample year: unknown, country: China/Italy³⁷⁸, sa from China, *traditional Chinese medicinal plants; for detailed information please see the article

incidence: 1/7, conc.: tr, sample year: unknown, country: Croatia⁹⁸¹, sa imported; for detailed information please see the article

incidence: 2/10*, Ø conc.: 50 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Glycyrrhiza glabra*; for detailed information please see the article

incidence: 2/10*, Ø conc.: 80 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Holarrhena antidysenterica*; for detailed information please see the article

incidence: 3/10*, Ø conc.: 100 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Strychnos nux-vomica*; for detailed information please see the article

incidence: 1/7*, conc.: 20 µg/kg, sample year: unknown, country: Egypt⁹⁹³, *absinthium

incidence: 12/175*, conc. range: 10–130 µg/kg, sample year: 1990, country: India¹⁰²⁷, *crude and finished herbal drugs; for detailed information please see the article

incidence: 2/28*, conc. range: 0.2–0.4 µg/l, Ø conc.: 0.3 µg/l, sample year: unknown, country: China¹¹²⁹, *rhizomes and roots; for detailed information please see the article

incidence: 1/10*, conc.: 0.3 µg/l, sample year: unknown, country: China¹¹²⁹, *grasses and leaves; for detailed information please see the article (1 sa co-contaminated with OTA and OTB)

incidence: 1/9*, conc.: 1.5 µg/l, sample year: unknown, country: China¹¹²⁹, *seeds; for detailed information please see the article (1 sa co-contaminated with OTA and OTB)

incidence: 55/129, conc. range: 0.07–2.34 µg/kg, sample year: unknown, country: India¹³⁷³; for detailed information please see the article

incidence: 1/6*, conc.: 2.5 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet, *maca-plant

incidence: 53/84*, conc. range: 0.025–2.9 µg/kg (35 sa), 3–6 µg/kg (12 sa), 7–9 µg/kg (1 sa), 10–13 µg/kg (2 sa), 13.5–17.5 µg/kg (3 sa), sample year:

unknown, country: Spain¹³⁸⁹, *medicinal and aromatic herbs; for detailed information please see the article

incidence: 4/23*, conc. range: 0.2–0.7 µg/kg, Ø conc.: 0.38 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, MA, and OTA, 1 sa co-contaminated with AFB₁, CHAE, GLI, MA, OTA, OTB, and T-2, 1 sa co-contaminated with AFG₂, DPDON, NEO, NIV, OTA, and OTB, 1 sa co-contaminated with GLI, MA, and OTA); for detailed information please see the article

incidence: 4/15*, conc. range: 0.2–1.8 µg/kg, Ø conc.: 0.65 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with FUS-X, MA, NEO, OTA, OTB, PA, and STG, 1 sa co-contaminated with AFG₁, CHAE, MA, OTA, and OTB, 1 sa co-contaminated with OTA, ZEA, α-ZEL, β-ZEL, and ZEAA, 1 sa co-contaminated with MA and OTA); for detailed information please see the article

incidence: 4/11*, conc. range: 0.2–0.3 µg/kg, Ø conc.: 0.25 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₂, CPA, MA, OTA, PA, and STG, 1 sa co-contaminated with CIT, HT-2, MA, OTA, and OTB, 1 sa co-contaminated with AFB₁, DAS, OTA, and OTB, 1 sa co-contaminated with AFB₁, NIV, OTA, and PEA); for detailed information please see the article

incidence: 1/11*, conc.: 1.1 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers; for detailed information please see the article

OCHRATOXIN B

incidence: 1/10*, conc.: 0.4 µg/l, sample year: unknown, country: China¹¹²⁹, *grasses and leaves; for detailed information please see the article (1 sa co-contaminated with OTA and OTB)

incidence: 1/9*, conc.: 0.8 µg/l, sample year: unknown, country: China¹¹²⁹, *seeds; for detailed information please see the article (1 sa co-contaminated with OTA and OTB)

incidence: 5/23*, conc. range: 0.2–1.2 µg/kg, Ø conc.: 0.58 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, CHAE, NIV, OTB, and T-2, 1 sa co-contaminated with AFB₁, CHAE, GLI, MA, OTA, OTB, and T-2, 1 sa co-contaminated with AFG₂, DPDON, NEO, NIV, OTA, and OTB); for detailed information please see the article

incidence: 2/15*, conc. range: 1.0–1.8 µg/kg, Ø conc.: 1.4 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with FUS-X, MA, NEO, OTA, OTB, PA, and STG, 1 sa co-contaminated with AFG₁, CHAE, MA, OTA, and OTB); for detailed information please see the article

incidence: 3/11*, conc. range: 0.2–1.5 µg/kg, Ø conc.: 0.7 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, AFG₁, GLI, MA, OTB, PEA, and STG, 1 sa co-contaminated with CIT, HT-2, MA, OTA, and OTB, 1 sa co-contaminated with AFB₁, DAS, OTA, and OTB); for detailed information please see the article

incidence: 1/11*, conc.: 0.4 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers; for detailed information please see the article

PATULIN

incidence: 1/23*, conc.: 8.9 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with CIT, DON3G, MON, PA, and STG); for detailed information please see the article

incidence: 1/15*, conc.: 7.1 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with FUS-X, MA, NEO, OTA, OTB, PA, and STG); for detailed information please see the article

incidence: 1/11*, conc.: 3.2 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₂, CPA, MA, OTA, PA, and STG); for detailed information please see the article

VERRUCULOGEN

incidence: 4/23*, conc. range: 0.2–1.1 µg/kg, Ø conc.: 0.43 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with CPA, GLI, MA, STG, and VER, 1 sa co-contaminated with CIT, DAS, STG, and VER, 1 sa co-contaminated with CHAE, PEA, and VER); for detailed information please see the article

incidence: 3/15*, conc. range: 0.2–1.5 µg/kg, Ø conc.: 0.67 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₂, DON3G, MA, STG, and VER); for detailed information please see the article

Chaetomium Toxins

CHAETOGLOBOSIN A

incidence: 10/23*, conc. range: 0.3–3.4 µg/kg, Ø conc.: 1.19 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, MA, and OTA, 1 sa co-contaminated with AFB₁, AFB₂,

AFG₂, CHAE, NIV, OTB, and T-2, 1 sa co-contaminated with AFB₁, CHAE, GLI, MA, OTA, OTB, and T-2, 1 sa co-contaminated with CHAE, CPA, DON3G, and PEA, 1 sa co-contaminated with CHAE, CPA, and GLI, 1 sa co-contaminated with CHAE, MA, and STG, 1 sa co-contaminated with CHAE, PEA, and VER, 1 sa co-contaminated with CHAE, STG, and ZEA, 1 sa co-contaminated with CHAE and STG); for detailed information please see the article

incidence: 4/15*, conc. range: 0.4–5.6 µg/kg, Ø conc.: 2.18 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CHAE, CPA, DPDON, and MA, 1 sa co-contaminated with AFB₁, CHAE, STG, ZEA, α-ZEL, and ZEAA, 1 sa co-contaminated with AFG₁, CHAE, MA, OTA, and OTB); for detailed information please see the article

incidence: 1/11*, conc.: 0.6 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with AFB₁, AFG₂, CHAE, CPA, DAS, DON3G, PEA, and STG); for detailed information please see the article

Fusarium Toxins

DEOXYNIVALENOL

incidence: 52/84*, conc. range: 15–39 µg/kg (8 sa), 40–100 µg/kg (15 sa), 101–199 µg/kg (13 sa), 200–300 µg/kg (9 sa), 301–500 µg/kg (6 sa), >5,000 µg/kg (1 sa), sample year: unknown, country: Spain¹³⁸⁹, *medicinal and aromatic herbs; for detailed information please see the article

incidence: 1/15*, conc.: 25.4 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with DON, DPDON, and NIV); for detailed information please see the article

DEEPOXYDEOXYNIVALENOL

incidence: 1/23*, conc.: 2.4 µg/kg,
sample year: unknown, country:

China¹⁴⁷³, *rhizomes and roots (1 sa
co-contaminated with AFG₂, DPDON,
NEO, NIV, OTA, and OTB); for detailed
information please see the article

incidence: 2/15*, conc. range: 2.3–2.5 µg/kg,
Ø conc.: 2.4 µg/kg, sample year: unknown,
country: China¹⁴⁷³, *seeds (1 sa
co-contaminated with AFB₁, AFB₂, CHAE,
CPA, DPDON, and MA, 1 sa co-contaminated
with DON, DPDON, and NIV); for detailed
information please see the article

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 2/23*, conc. range: 1.4–3.4 µg/
kg, Ø conc.: 2.4 µg/kg, sample year:
unknown, country: China¹⁴⁷³, *rhizomes
and roots (1 sa co-contaminated with CIT,
DON3G, MON, PA, and STG, 1 sa
co-contaminated with CHAE, CPA,
DON3G, and PEA); for detailed
information please see the article

incidence: 1/15*, conc.: 1.2 µg/kg, sample
year: unknown, country: China¹⁴⁷³, *seeds
(1 sa co-contaminated with AFB₂, DON3G,
MA, STG, and VER); for detailed
information please see the article

incidence: 1/11*, conc.: 18.2 µg/kg, sample
year: unknown, country: China¹⁴⁷³,

*grasses and leaves (1 sa co-contaminated
with DON3G, MA, STG, and ZEA); for
detailed information please see the article

incidence: 1/11*, conc.: 6.5 µg/kg, sample
year: unknown, country: China¹⁴⁷³,

*flowers (1 sa co-contaminated with AFB₁,
AFG₂, CHAE, CPA, DAS, DON3G, PEA,
and STG); for detailed information please
see the article

FUMONISIN B₁

incidence: 12/18*, conc. range: 350–700 µg/
kg, sample year: unknown, country:
Portugal³¹⁰, *leaves of orange tree

incidence: 12/18, conc. range: 20–200 µg/
kg, sample year: unknown, country:
Portugal³¹⁰, *leaves or flowers of
linden tree

incidence: 9/15*, conc. range: 50–150 µg/
kg, sample year: unknown, country:
Portugal³¹⁰, *corn silk

incidence: 8/18*, conc. range: 20–70 µg/kg,
sample year: unknown, country:
Portugal³¹⁰, *chamomile

incidence: 13/16, conc. range: 14–139 µg/
kg, Ø conc.: 55.54 µg/kg, sample year:
2006, country: South Africa¹¹⁹⁸; for
detailed information please see the article

incidence: 2/61, conc. range: 160–
1,487 µg/kg, sample year: unknown,
country: Turkey¹³⁰⁸, sa from Germany,
Turkey and unknown origin; for detailed
information please see the article

incidence: 4/30*, conc. range: 8.6–
1,553 µg/kg, Ø conc.: 410.4 µg/kg, sample
year: 2002, country: South Africa¹⁴⁰⁸,
*medicinal wild plants; for detailed
information please see the article

FUMONISINS (B₁, B₂)

incidence: 7/16*, conc. range: 124.4–
4,503.4 µg/kg, sample year: 2009/2010,
country: China¹⁶³⁸, *moldy medicinal
herbs

incidence: 6/80*, conc. range: 49.0–474.3 µg/
kg, sample year: 2009/2010, country:
China¹⁶³⁸, *not moldy medicinal herbs

FUMONISINS

incidence: 11/84*, conc. range: 83–100 µg/
kg (3 sa), 101–200 µg/kg (6 sa), 201–300 µg/
kg (1 sa), 601–700 µg/kg (1 sa), sample
year: unknown, country: Spain¹³⁸⁹,

*medicinal and aromatic herbs; for
detailed information please see the article

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/15*, conc.: 2.0 µg/kg, sample
year: unknown, country: China¹⁴⁷³, *seeds
(1 sa co-contaminated with FUS-X, MA,
NEO, OTA, OTB, PA, and STG); for detailed
information please see the article

HT-2 TOXIN

incidence: 1/15*, conc.: 2.9 µg/kg, sample
year: unknown, country: China¹⁴⁷³, *seeds
(1 sa co-contaminated with AFB₁, AFB₂,
AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI,

HT-2, MA, PEA, STG, VER, and ZEA); for detailed information please see the article incidence: 1/11*, conc.: 2.3 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with CIT, HT-2, MA, OTA, and OTB); for detailed information please see the article incidence: 1/11*, conc.: 0.2 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers; for detailed information please see the article

MONILIFORMIN

incidence: 3/23*, conc. range: 2.2–3.8 µg/kg, Ø conc.: 2.87 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₂, AFG₁, AFG₂, MON, MA, NEO, and STG, 1 sa co-contaminated with CIT, DON3G, MON, PA, and STG, 1 sa co-contaminated with MA, MON, NEO, and T-2); for detailed information please see the article

incidence: 1/15*, conc.: 2.1 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER); for detailed information please see the article

incidence: 1/11*, conc.: 2.7 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with CPA, MA, MON, and STG); for detailed information please see the article

incidence: 2/11*, conc. range: 2.3–2.9 µg/kg, Ø conc.: 2.6 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with GLI, MON, and T-2, 1 sa co-contaminated with MON and STG); for detailed information please see the article

NEOSOLANIOL

incidence: 5/23*, conc. range: 0.2–0.8 µg/kg, Ø conc.: 0.36 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₂, AFG₁, AFG₂, MON, MA, NEO, and STG, 1

sa co-contaminated with AFB₁, AFB₂, AFG₁, AFM₁, CPA, and NEO, 1 sa co-contaminated with AFG₂, DPDON, NEO, NIV, OTA, and OTB, 1 sa co-contaminated with AFM₁, CIT, GLI, MA, NEO, and STG, 1 sa co-contaminated with MA, MON, NEO, and T-2); for detailed information please see the article

incidence: 1/15*, conc.: 0.2 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with FUS-X, MA, NEO, OTA, OTB, PA); for detailed information please see the article

NIVALENOL

incidence: 2/23*, conc. range: 2.9–4.3 µg/kg, Ø conc.: 3.6 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFG₂, CHAE, NIV, OTB, and T-2, 1 sa co-contaminated with AFG₂, DPDON, NEO, NIV, OTA, and OTB); for detailed information please see the article

incidence: 2/15*, conc. range: 3.7–7.9 µg/kg, Ø conc.: 5.8 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with DON, DPDON, and NIV); for detailed information please see the article

incidence: 2/11*, conc. range: 2.1–5.8 µg/kg, Ø conc.: 3.95 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, NIV, OTA, and PEA, 1 sa co-contaminated with CPA, NIV, and STG); for detailed information please see the article

DIACETOXYSCIRPENOL

incidence: 1/23*, conc.: 0.3 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with CIT, DAS, STG, and VER); for detailed information please see the article

incidence: 3/15*, conc. range: 0.2–0.3 µg/kg, Ø conc.: 0.27 µg/kg, sample year:

unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, DAS, MA, PEA, and STG, 1 sa co-contaminated with AFB₁, AFB₂, DAS, GLI, STG, and ZEA); for detailed information please see the article

incidence: 1/11*, conc.: 1.9 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, DAS, OTA, and OTB); for detailed information please see the article
incidence: 1/11*, conc.: 0.2 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with AFB₁, AFG₂, CHAE, CPA, DAS, DON3G, PEA, and STG); for detailed information please see the article

T-2 TOXIN

incidence: 83/84*, conc. range: 0.3–0.9 µg/kg (8 sa), 1–9 µg/kg (36 sa), 10–29 µg/kg (25 sa), 30–49 µg/kg (11 sa), 50–99 µg/kg (2 sa), 100–260 µg/kg (1 sa), sample year: unknown, country: Spain¹³⁸⁹, *medicinal and aromatic herbs; for detailed information please see the article

incidence: 4/23*, conc. range: 0.2–0.8 µg/kg, Ø conc.: 0.43 µg/kg, sample year: unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₂, CHAE, NIV, OTB, and T-2, 1 sa co-contaminated with AFB₁, CHAE, GLI, MA, OTA, OTB, and T-2, 1 sa co-contaminated with MA, MON, NEO, and T-2); for detailed information please see the article

incidence: 1/11*, conc.: 0.2 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers; for detailed information please see the article

ZEARALANONE

incidence: 2/15*, conc. range: 1.4–1.8 µg/kg, Ø conc.: 1.6 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds

(1 sa co-contaminated with AFB₁, CHAE, STG, ZEA, α-ZEL, and ZEEA, 1 sa co-contaminated with OTA, ZEA, α-ZEL, β-ZEL, and ZEEA); for detailed information please see the article

α-ZEARALENONE

incidence: 2/15*, conc. range: 1.5–2.1 µg/kg, Ø conc.: 1.8 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, CHAE, STG, ZEA, α-ZEL, and ZEEA, 1 sa co-contaminated with OTA, ZEA, α-ZEL, β-ZEL, and ZEEA); for detailed information please see the article

β-ZEARALENOL

incidence: 1/15*, conc.: 1.3 µg/kg, sample year: unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with OTA, ZEA, α-ZEL, β-ZEL, and ZEEA); for detailed information please see the article

ZEARALENONE

incidence: 2/10*, Ø conc.: 80 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Strychnos nux-vomica*; for detailed information please see the article

incidence: 2/10*, Ø conc.: 20 µg/kg, sample year: unknown, country: India⁹⁸⁵, **Tribulus terrestris*; for detailed information please see the article

incidence: 4/?*, conc. range: 25–11,700 µg/kg, Ø conc.: 5,170 µg/kg, sample year: unknown, country: USA¹⁰¹⁶, **Panax ginseng* and *P. quinquefolius*

incidence: 5/175*, conc. range: 20–110 µg/kg, sample year: 1990, country: India¹⁰²⁷, *crude and finished herbal drugs; for detailed information please see the article

incidence: 82/84*, conc. range: 0.3–5 µg/kg (40 sa), 5.1–10 µg/kg (22 sa), 10.1–15 µg/kg (12 sa), 15.1–20 µg/kg (2 sa), 20.1–45 µg/kg (6 sa), sample year: unknown, country: Spain¹³⁸⁹, *medicinal and aromatic herbs; for detailed information please see the article

incidence: 2/23*, conc. range: 2.1 µg/kg, Ø conc.: 2.1 µg/kg, sample year: unknown,

country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with CHAE, STG, and ZEA); for detailed information please see the article

incidence: 4/15*, conc. range: 2.1–10.3 µg/kg, Ø conc.: 4.88 µg/kg, sample year:

unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, DAS, GLI, STG, and ZEA, 1 sa co-contaminated with AFB₁, CHAE, STG, ZEA, α-ZEL, and ZEAA, 1 sa co-contaminated with OTA, ZEA, α-ZEL, β-ZEL, and ZEAA); for detailed information please see the article

incidence: 1/11*, conc.: 2.3 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with DON3G, MA, STG, and ZEA); for detailed information please see the article

Penicillium Toxins

MYCOPHENOLIC ACID

incidence: 10/23*, conc. range: 0.2–22.7 µg/kg, Ø conc.: 5.05 µg/kg, sample year:

unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with AFB₁, AFB₂, AFM₁, CHAE, CIT, CPA, GLI, MA, OTB, STG, and VER, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, MA, and OTA, 1 sa co-contaminated with AFB₁, CPA, GLI, MA, OTB, STG, T-2, and ZEA, 1 sa co-contaminated with AFB₁, CHAE, GLI, MA, OTA, OTB, and T-2, 1 sa co-contaminated with AFB₂, AFG₁, AFG₂, MON, MA, NEO, and STG, 1 sa co-contaminated with AFM₁, CIT, GLI, MA, NEO, and STG, 1 sa co-contaminated with CPA, GLI, MA, STG, and VER, 1 sa co-contaminated with CHAE, MA, and STG, 1 sa co-contaminated with MA, MON, NEO, and T-2, 1 sa co-contaminated with GLI, MA, and OTA); for detailed information please see the article

incidence: 9/15*, conc. range: 0.2–10.8 µg/kg, Ø conc.: 3.6 µg/kg, sample year:

unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFB₂, CPA, DAS, GLI, MA, MON, NIV, STG, and VER, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, DAS, MA, PEA, and STG, 1 sa co-contaminated with FUS-X, MA, NEO, OTA, OTB, PA, and STG, 1 sa co-contaminated with AFB₁, AFB₂, CHAE, CPA, DPDON, and MA, 1 sa co-contaminated with AFB₂, DON3G, MA, STG, and VER, 1 sa co-contaminated with AFG₁, CHAE, MA, OTA, and OTB, 1 sa co-contaminated with AFB₁, AFB₂, and MA, 1 sa co-contaminated with MA and OTA); for detailed information please see the article

incidence: 6/11*, conc. range: 0.8–8.1 µg/kg, Ø conc.: 3.35 µg/kg, sample year:

unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, AFG₁, GLI, MA, OTB, PEA, and STG, 1 sa co-contaminated with AFB₂, CPA, MA, OTA, PA, and STG, 1 sa co-contaminated with CIT, HT-2, MA, OTA, and OTB, 1 sa co-contaminated with CPA, MA, MON, and STG, 1 sa co-contaminated with DON3G, MA, STG, and ZEA, 1 sa co-contaminated with MA, PEA, and STG); for detailed information please see the article

PENITREM A

incidence: 2/23*, conc. range: 0.2 µg/kg, Ø conc.: 0.2 µg/kg, sample year:

unknown, country: China¹⁴⁷³, *rhizomes and roots (1 sa co-contaminated with CHAE, CPA, DON3G, and PEA, 1 sa co-contaminated with CHAE, PEA, and VER); for detailed information please see the article

incidence: 2/15*, conc. range: 0.5–5.8 µg/kg, Ø conc.: 3.15 µg/kg, sample year:

unknown, country: China¹⁴⁷³, *seeds (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, AFM₁, CHAE, CPA, GLI, HT-2, MA, PEA, STG, VER, and ZEA, 1 sa co-contaminated with AFB₁, AFG₁, AFG₂, DAS, MA, PEA, and STG); for detailed information please see the article

incidence: 3/11*, conc. range: 0.2–1.2 µg/kg, Ø conc.: 0.77 µg/kg, sample year: unknown, country: China¹⁴⁷³, *grasses and leaves (1 sa co-contaminated with AFB₁, AFG₁, GLI, MA, OTB, PEA, and STG, 1 sa co-contaminated with AFB₁, NIV, OTA, and PEA, 1 sa co-contaminated with MA, PEA, and STG); for detailed information please see the article

incidence: 2/11*, conc. range: 0.2–1.1 µg/kg, Ø conc.: 0.65 µg/kg, sample year: unknown, country: China¹⁴⁷³, *flowers (1 sa co-contaminated with AFB₁, AFG₂, CHAE, CPA, DAS, DON3G, PEA, and STG, 1 sa co-contaminated with CPA and PEA); for detailed information please see the article

Meju may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 26/60, conc. range: 2.1–23.5 µg/kg, Ø conc.: 6.9 µg/kg, sample year: 1995/1996, country: Korea²²⁵

Meju is a crushed fermented soybean cake.

Melon see Fruit (melon)

Melon balls snacks see Snacks

Melon seed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 102/319, conc. range: ≤50 µg/kg, sample year: 2001, country: Nigeria³⁹²
incidence: 24/75*, conc. range: 2.3–42.3 µg/kg, Ø conc.: 15.3 µg/kg, sample

year: 2000, country: Nigeria¹⁶²⁸, *sa from farmers' store (ecological zone: forest)
incidence: 13/62*, conc. range: 2.3–25.1 µg/kg, Ø conc.: 10.5 µg/kg, sample year: 2000, country: Nigeria¹⁶²⁸, *sa from farmers' store (ecological zone: savanna)

AFLATOXINS

incidence: 2/4, conc. range: ≤29 µg/kg, Ø conc.: 26 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported

Milk may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 22/85*, conc. range: <0.5 µg/l (8 sa), >0.5–2.6 µg/l (14 sa), sample year: 1987/1988, country: Cuba¹²⁶, *raw milk

AFLATOXIN M₁
incidence: 2/24*, conc. range: 0.02–0.04 µg/l, Ø conc.: 0.03 µg/l, sample year: 1993, country: Spain⁴¹, *whole pasteurized milk

incidence: 5/19*, conc. range: 0.01–0.02 µg/l, Ø conc.: 0.015 µg/l, sample year: 1992–1996, country: Cyprus⁷⁴, *full pasteurized milk

incidence: 1/4*, conc.: 0.01 µg/l, sample year: 1992–1996, country: Cyprus⁷⁴, *light pasteurized milk

incidence: 3/8*, conc. range: 0.01–0.04 µg/kg, Ø conc.: 0.02 µg/l, sample year: 1992–1996, country: Cyprus⁷⁴, *skimmed pasteurized milk

incidence: 70/82*, conc. range: 0.005–0.01 µg/l (42 sa), 0.011–0.02 µg/l (18 sa), 0.021–0.05 µg/l (10 sa), sample year: 1999/2000, country: Greece¹⁵⁰, *pasteurized milk

incidence: 43/54*, conc. range: 0.005–0.01 µg/l (18 sa), 0.011–0.02 µg/l (15 sa), 0.021–0.05 µg/l (10 sa), sample year: 2000/2001, country: Greece¹⁵⁰, *pasteurized milk

incidence: 14/15*, conc. range: 0.005–0.01 µg/l (2 sa), 0.011–0.02 µg/l (4 sa), 0.021–0.05 µg/l (6 sa), >0.05 µg/l (2 sa), sample year: 1999/2000, country: Greece¹⁵⁰, *concentrated milk

incidence: 63/63*, conc. range: >0.05–0.125 µg/l (13 sa), >0.125–0.25 µg/l (16 sa), >0.25–0.5 µg/l (14 sa), >0.5 µg/l (20 sa), sample year: 1995/1996, country: Thailand¹⁵⁵, *pasteurized milk

incidence: 60/60*, conc. range: >0.05–0.125 µg/l (12 sa), >0.125–0.25 µg/l (19 sa), >0.25–0.5 µg/l (26 sa), >0.5 µg/l (3 sa), sample year: 1995/1996, country: Thailand¹⁵⁵, *sterilized milk

incidence: 7/7*, conc. range: >0.125–0.25 µg/l (2 sa), >0.25–0.5 µg/l (4 sa), >0.5 µg/l (1 sa), sample year: 1995/1996, country: Thailand¹⁵⁵, *pelleted milk

incidence: 2/15*, conc. range: 0.0394–0.1012 µg/l, Ø conc.: 0.0703 µg/l, sample year: 1998/1999, country: Brazil¹⁸⁶, *pasteurized milk

incidence: 90/91*, Ø conc.: 0.092 µg/l, sample year: unknown, country: India²³¹, *market milk

incidence: 4/52*, conc. range: 0.073–0.37 µg/l, Ø conc.: 0.155 µg/l, sample year: 1992, country: Brazil²⁴⁶, *pasteurized milk

incidence: 7/95*, conc. range: 0.020–0.040 µg/l, sample year: 1983, country: Spain³⁰⁴, *included raw, pasteurized, sterilized, concentrated milk

incidence: 1/35*, conc.: 1 µg/l, sample year: 1974/1975, country: India³²¹, *bulk milk

incidence: 3/5*, conc. range: 0.01–0.03 µg/l, Ø conc.: 0.02 µg/l, sample year: 1998, country: Kuwait³²⁹, *skimmed fresh milk

incidence: 5/7*, conc. range: 0.02–0.16 µg/l, Ø conc.: 0.068 µg/l, sample year: 1998, country: Kuwait³²⁹, *full cream fresh milk

incidence: 7/22, conc. range: 0.2–0.5 µg/kg (6 sa), >0.5 µg/kg (1 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷

incidence: 68/72, conc. range: LOD–0.030 µg/kg (68 sa, maximum: 0.01361 µg/kg), Ø conc.: 0.00969 µg/kg, sample year: 2008, country: Spain⁹⁶⁷

incidence: 16/17*, conc. range: 0.003–0.010 µg/l (6 sa), 0.011–0.020 µg/l (6 sa), 0.021–0.030 µg/l (2 sa), 0.031–0.040 µg/l (2 sa, maximum: 0.034 µg/l), sample year: unknown, country: Italy⁹⁶⁸, *pasteurized milk

incidence: 4/12*, conc. range: 0.028–0.164 µg/kg, Ø conc.: 0.086 µg/kg, sample year: unknown, country: India¹⁰⁷⁹, *infant milk

incidence: 78/78*, Ø conc.: 0.2305 µg/l, sample year: 2006, country: Iran¹¹¹⁵, *pasteurized milk

incidence: 33/33*, Ø conc.: 0.22166 µg/l, sample year: 2006, country: Iran¹¹¹⁵, *sterilized milk

incidence: 25/31*, conc. range: 0.005–0.020 µg/l (19 sa), 0.021–0.040 µg/l (4 sa), 0.041–0.050 µg/l (2 sa), sample year: 1999, country: Portugal¹²⁵⁷, *raw milk

incidence: 47/104*, conc. range: 0.005–0.020 µg/l (36 sa), 0.021–0.040 µg/l (11 sa), sample year: 2000, country: Portugal¹²⁵⁷, *raw milk

incidence: 74/107*, conc. range: 0.005–0.020 µg/l (62 sa), 0.021–0.040 µg/l (8 sa), 0.041–0.050 µg/l (1 sa), 0.051–0.080 µg/l (3 sa), sample year: 2001, country: Portugal¹²⁵⁷, *raw milk

incidence: 100/118*, conc. range: 0.005–0.020 µg/l (45 sa), 0.021–0.040 µg/l (26 sa), 0.041–0.050 µg/l (6 sa), 0.051–0.080 µg/l (23 sa), sample year: 2002, country: Portugal¹²⁵⁷, *raw milk

incidence: 78/104*, conc. range: 0.005–0.020 µg/l (58 sa), 0.021–0.040 µg/l (10 sa), 0.041–0.050 µg/l (2 sa), 0.051–0.080 µg/l (8 sa), sample year: 2003, country: Portugal¹²⁵⁷, *raw milk

incidence: 70/134*, conc. range: 0.005–0.020 µg/l (34 sa), 0.021–0.040 µg/l (19 sa), 0.041–0.050 µg/l (2 sa), 0.051–0.080 µg/l (15 sa), sample year: 2004, country: Portugal¹²⁵⁷, *raw milk

incidence: 3/71, conc. range: 0.71–3.37 µg/l, Ø conc.: 2.26 µg/l, sample year: unknown, country: India¹³¹⁸

incidence: 42/57, conc. range: 0.025–0.95 µg/kg, Ø conc.: 0.08 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

incidence: 5/110*, conc. range: 0.038–0.079 µg/kg, Ø conc.: 0.0574 µg/kg, sample year: 1996/1997, country: Brazil¹⁴³², *included vitamin, skimmed milk, and full sterilized (UHT)

incidence: 5/5, conc. range: 0.16–1.07 µg/l, Ø conc.: 0.534 µg/l, sample year: unknown, country: USA¹⁴⁹⁶

incidence: 43/50, conc. range: 0.001–0.030 µg/l, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey

AFLATOXINS

incidence: 5/60*, conc. range: 0.16–5.23 µg/kg, sample year: 2007, country: Jordan¹⁵⁰⁶, *cow, goat, and sheep milk

Aspergillus and Penicillium Toxins

CYCLOPIAZONIC ACID

incidence: 3/20, conc. range: 4.5–8.3 µg/l, Ø conc.: 6.33 µg/l, sample year: unknown, country: Italy¹¹³⁴

OCHRATOXIN A

incidence: 0/20* **, conc. range: no contamination, sample year: unknown, country: Italy¹⁶⁴⁹, *20 sa bovine, **conventional

incidence: 3/63* **, conc. range: 0.07–0.11 µg/l, sample year: unknown, country: Italy¹⁶⁴⁹, *39 sa bovine, 15 sa goat, and 9 sa sheep, **organic

Fusarium Toxins

ZEARALENONE

incidence: 4/20*, conc. range: 2.9–10.1 µg/l, Ø conc.: 6.9 µg/kg, sample year: unknown, country: Egypt⁴⁴³, *raw milk

incidence: 3/20*, conc. range: 1.2–7.2 µg/l, Ø conc.: 5.0 µg/kg, sample year: unknown, country: Egypt⁴⁴³, *pasteurized milk

incidence: 5/20*, conc. range: 1.6–9.3 µg/l, Ø conc.: 4.4 µg/kg, sample year: unknown, country: Egypt⁴⁴³, *condensed milk

Milk (buffalo milk) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 17/28, conc. range: pr, sample year: unknown, country: India²¹⁴

AFLATOXIN M₁

incidence: 27/50, conc. range: tr–4.8 µg/l, sample year: unknown, country: India¹⁷²

incidence: 17/28, conc. range: pr, sample year: unknown, country: India²¹⁴

incidence: 32/38*, Ø conc.: 0.076 µg/l, sample year: unknown, country: India²³¹, *individual buffalo milk

incidence: 27/28*, Ø conc.: 0.074 µg/l, sample year: unknown, country: India²³¹, *bulk buffalo milk

incidence: 1/25, conc.: 1 µg/l, sample year: 1974/1975, country: India³²¹

incidence: 4/43*, conc. range: 0.004–0.039 µg/l, sample year: 2002, country: Italy⁴³⁶, *raw milk

incidence: 20/47*, conc. range: 0.004–0.043 µg/l, sample year: 2003, country: Italy⁴³⁶, *raw milk

incidence: 18/59*, conc. range: 0.005–0.023 µg/l, sample year: 2004, country: Italy⁴³⁶, *raw milk

incidence: 18/58*, conc. range: 0.004–0.676 µg/l, sample year: 2005, country: Italy¹³⁶, *raw milk

incidence: 32/50, conc. range: 0.010–0.050 µg/l (8 sa), 0.051–0.100 µg/l (10 sa), 0.101–0.150 µg/l (6 sa), 0.151–0.200 µg/l (4 sa), 0.201–0.250 µg/l (3 sa), 0.270 µg/l (1 sa), sample year: 2003/2004, country: Egypt/Germany/USA¹²⁸⁶, sa from Egypt

incidence: 29/75*, conc. range: 0.005–0.020 µg/l (15 sa), 0.021–0.050 µg/l (8 sa), >0.050 µg/l (6 sa), Ø conc.: 0.0319 µg/l, sample year: 2007/2008, country: Iran¹³⁵³, *water buffalo milk

incidence: 30/90*, conc. range: 0.0393–0.3426 µg/l, Ø conc.: 0.137 µg/l, sample year: 1998/1999, country: Pakistan¹³⁵⁸, *fresh milk

Milk (camel milk) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/8, conc. range: pr, sample year: unknown, country: India²¹⁴

AFLATOXIN M₁

incidence: 6/20, conc. range: 0.25–0.8 µg/l, Ø conc.: 0.460 µg/l, sample year: unknown, country: UK/UAE¹⁵¹, sa from UAE

incidence: 9/25, conc. range: 0.010–0.050 µg/l (4 sa), 0.051–0.100 µg/l (2 sa), 0.101–0.150 µg/l (1 sa), 0.151–0.200 µg/l (1 sa), 0.210 µg/l (1 sa), sample year: 2003/2004, country: Egypt/Germany/USA¹²⁸⁶, sa from Egypt

incidence: 5/40, conc. range: 0.005–0.020 µg/l (3 sa), 0.021–0.050 µg/l (2 sa), Ø conc.: 0.0190 µg/l, sample year: 2007/2008, country: Iran¹³⁵³

incidence: 6/24, conc. range: 0.3–0.5 µg/l (3 sa), 0.5–0.7 µg/l (1 sa), 0.7–0.9 µg/l (2 sa, maximum: 0.85 µg/l), Ø conc.: 0.55 µg/l, sample year: unknown, country: Egypt¹³⁹⁸

Milk (cow milk): Aflatoxin B₁ may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXICOL

incidence: 38/290*, conc. range: ≥0.05–12.40 µg/l, sample year: 1996–1998, country: Mexico⁹⁹⁵, sa from Mexico and imported, *pasteurized and ultrapasteurized milk

AFLATOXIN B₁

incidence: 3/8, conc. range: pr, sample year: unknown, country: India²¹⁴

incidence: 4/290*, conc. range: ≥0.05–0.42 µg/l sample year: 1996–1998, country: Mexico⁹⁹⁵, sa from Mexico and imported, *pasteurized and ultrapasteurized milk

AFLATOXIN M₁

incidence: 118/260, conc. range: 0.05–0.20 µg/l (109 sa), 0.21–0.5 µg/l (7 sa, maximum: 0.33 µg/l), sample year: 1972–1974, country: Germany⁶

incidence: 43/403*, conc. range: 0.025–0.1 µg/l (37 sa), 0.1–0.5 µg/l (6 sa), sample year: 1987/1988, country: Czechoslovakia⁵⁴, *sa from dairy plant farms

incidence: 46/376*, conc. range: 0.025–0.1 µg/l (44 sa), >0.1 µg/l (2 sa), sample year: 1987/1988, country:

Czechoslovakia⁵⁴, *sa from area of dairy plant producing milk baby foods

incidence: 11/22, conc. range: 0.010–0.250 µg/l, sample year: unknown, country: Poland⁵⁷

incidence: 136/159, conc. range: ≤0.10851 µg/l, Ø conc.: 0.01019 µg/l, sample year: 1995, country: Italy⁵⁸

incidence: 24/409, conc. range: 0.02–0.05 µg/kg (10 sa), 0.05–0.1 µg/kg, (6 sa), >0.1 µg/kg (8 sa), sample year: 1981–1983, country: UK⁶¹, sa from England, N. Ireland, and Scotland

incidence: 3/71*, conc. range: 0.03–0.04 µg/kg, Ø conc.: 0.035 µg/l, sample year: 1992–1996, country: Cyprus⁷⁴, *raw milk

incidence: 8/31*, conc. range: 0.005–0.091 µg/l, sample year: unknown, country: Italy⁷⁷, *raw farm milk

incidence: 59/66*, conc. range: 0.004–0.15 µg/l, sample year: unknown, country: Italy⁷⁷, *heat-treated milk

incidence: ?/5,489, conc. range: 0–0.05 µg/l (5,284 sa), 0.05–0.50 µg/l (200 sa), >0.5 µg/l (5 sa), sample year: 1978–1991, country: France⁸⁷

incidence: ?/757*, conc. range: 0–0.05 µg/l (659 sa), 0.05–0.50 µg/l (84 sa), >0.5 µg/l (14 sa), sample year: 1979–1992, country: France⁸⁷, *bulk raw milk

incidence: 4/99*, conc. range: 0.10–0.13 µg/l, sample year: 1986/1987, country: Greece⁹¹, *raw milk

incidence: 12/36*, conc. range: 0.04–0.25 µg/l, sample year: unknown, country: Germany⁹⁴, *origin of sa: single farms

incidence: 9/12*, conc. range: 0.04–0.08 µg/l, sample year: unknown, country: Germany⁹⁴, *origin of sa: tanker bulk milk

incidence: 7/13*, conc. range: 0.05–0.13 µg/l, sample year: unknown, country: Germany⁹⁴, *origin of sa: tanker bulk milk

incidence: 79/419, conc. range: 0.02–0.54 µg/l, Ø conc.: 0.12 µg/l, sample year: 1976, country: Germany⁹⁵

incidence: 39/70, conc. range: 0.015–0.052 µg/l, Ø conc.: 0.031 µg/l, sample year: 1997, country: Korea⁹⁶

incidence: 9/13, conc. range: 0.01–0.80 µg/l, Ø conc.: 0.2 µg/l, sample year: unknown, country: USA⁹⁸

incidence: 9/117*, conc. range: 0.05–0.10 µg/l, sample year: 1980/1982, country: Czechoslovakia¹¹⁸, *commercial milk

incidence: 84/105*, conc. range: 0.015–0.090 µg/l, Ø conc.: 0.03 µg/l, sample year: 1981, country: Netherlands¹¹⁹, *raw and UHT milk

incidence: 72/81*, conc. range: 0.0005–0.001 µg/l (31 sa), 0.0025–0.005 µg/l (32 sa), >0.005–0.1770 µg/l (9 sa), sample year: 1995/1996, country: Greece¹²³, *pasteurized milk

incidence: 143/192, conc. range: >0.125–0.5 µg/l (80 sa), –1 µg/kg (30 sa), –1.5 µg/l (18 sa), –2 µg/l (8 sa), –3 µg/l (5 sa), –4.5 µg/l (1 sa), –6 µg/l (1 sa), Ø conc.: 0.54 µg/l, sample year: 1992–1994, country: Switzerland¹³¹, sa from Ecuador

incidence: 46/46*, conc. range: 0.010–0.210 µg/l, sample year: unknown, country: Netherlands¹³⁴, *raw milk after skimming

incidence: 16/100, conc. range: 0.02–0.138 µg/l, sample year: 1999, country: Italy¹³⁷

incidence: 267?/267*, conc. range: <0.005 µg/l (115 sa), 0.005–0.02 µg/l (113 sa), >0.02 to <0.05 µg/l (21 sa), ≥0.05 µg/l (19 sa), sample year: 1986, country: Sweden¹³⁹, *different preservation techniques for the grain fed to dairy cows

incidence: 31/225, conc. range: 0.001–0.010 µg/l, sample year: 1984, country: Italy¹⁴², sa from Germany

incidence: 11/77, conc. range: 0.001–0.010 µg/l (10 sa), 0.011–0.050 µg/l (1 sa), sample year: 1984, country: Italy¹⁴², sa from France

incidence: 70/276, conc. range: 0.001–0.010 µg/l (39 sa), 0.011–0.050 µg/l (24 sa), 0.051–0.100 µg/l (5 sa), 0.101–0.200 µg/l (2 sa), sample year: 1985, country: Italy¹⁴²

incidence: 5/21, conc. range: <0.16 µg/l (3 sa), ~0.16 µg/l (2 sa), sample year: unknown, country: South Africa¹⁴³

incidence: 89/504, conc. range: 0.10–3.50 µg/l, Ø conc.: 1.159 µg/l, sample year: 1992/1993, country: India¹⁴⁵

incidence: 22/30*, conc. range: 0.005–0.01 µg/l (7 sa), 0.011–0.02 µg/l (10 sa), 0.021–0.05 µg/l (4 sa), >0.05 µg/l (1 sa), sample year: 1999/2000, country: Greece¹⁵⁰, *raw milk

incidence: 18/23*, conc. range: 0.005–0.01 µg/l (12 sa), 0.011–0.02 µg/l (4 sa), 0.021–0.05 µg/l (2 sa), sample year: 2000/2001, country: Greece¹⁵⁰, *bulk-tank milk

incidence: 18/28*, conc. range: 0.005–0.01 µg/l (3 sa), 0.011–0.02 µg/l (10 sa), 0.021–0.05 µg/l (4 sa), >0.05 µg/l (1 sa), sample year: 2000/2001, country: Greece¹⁵⁰, *raw milk

incidence: 1/100*, conc.: 0.2 µg/l, sample year: 1979–1981, country: Brazil¹⁵³, *commercial milk

incidence: 9/50*, conc. range: 0.1–1.68 µg/l, sample year: 1979–1981, country: Brazil¹⁵³, *farm milk

incidence: 66/67*, conc. range: >0–0.05 µg/l (9 sa), >0.05–0.125 µg/l (16 sa), >0.125–0.25 µg/l (19 sa), >0.25–0.5 µg/l (5 sa), >0.5 µg/l (17 sa), sample year: 1995/1996, country: Thailand¹⁵⁵, *raw milk

incidence: 50/85*, conc. range: ≤0.15 µg/l, sample year: 1999/2000, country: Egypt¹⁵⁶, *raw milk

incidence: 1/60, conc.: 0.005–0.100 µg/l, sample year: 1983, country: Sweden¹⁶⁹

incidence: 13/13, conc. range: 0.005–0.36 µg/l, Ø conc.: 0.17 µg/l, sample year: 1983, country: Sweden¹⁶⁹

incidence: 5/77*, conc. range: tr–0.38 µg/l, sample year: unknown, country: Czechoslovakia¹⁷¹, *raw and mixed milk from tank trucks

incidence: 191/302, conc. range: tr–0.2 µg/l (126 sa), 0.3–0.4 µg/l (46 sa), 0.5–0.7 µg/l (14 sa), >0.7 µg/l (5 sa), sample year: 1977, country: USA¹⁷⁶

incidence: 38*/95, conc. range: 8–500 µg/kg, sample year: 1973/1974, country: Iran¹⁸², *mainly AFM₁ and to a minor degree AFM₂ and AFB₁

incidence: 189/352*, conc. range: 0.6–15 µg/kg (133 sa), 16–30 µg/kg (40 sa), 31–50 µg/kg (16 sa, maximum: 48 µg/kg), sample year: unknown, country: India/UK¹⁹⁵, sa from India, *peri urban and rural raw milk

incidence: 17/50, conc. range: 0.6–15 µg/kg, sample year: unknown, country: India/UK¹⁹⁵, sa from India

incidence: 64/64, conc. range: 0.0056–0.280 µg/l, Ø conc.: 0.0804 µg/l, sample year: unknown, country: Korea²¹³

incidence: 3/8, conc. range: pr, sample year: unknown, country: India²¹⁴

incidence: 35/90, conc. range: 0.0302–0.0636 µg/l, sample year: unknown, country: Turkey²¹⁷

incidence: 3/15, conc. range: 5–8 µg/l, Ø conc.: 6.3 µg/l, sample year: 1999/2000, country: Egypt²²¹

incidence: 25/31*, conc. range: 0.005–0.010 µg/l (17 sa), 0.011–0.020 µg/l (2 sa), 0.021–0.050 µg/l (6 sa), country: Portugal²²³, *raw milk

incidence: 1/10*, conc.: 0.0108 µg/l, sample year: unknown, country: Turkey²²⁶, *raw and pasteurized milk

incidence: 30/34*, Ø conc.: 0.143 µg/l, sample year: unknown, country: India²³¹, *individual milk

incidence: 31/32*, Ø conc.: 0.110 µg/l, sample year: unknown, country: India²³¹, *bulk milk

incidence: 10/42*, conc. range: 0.29505–1.9749 µg/l, Ø conc.: 0.68485 µg/l, sample year: 2001/2002, country: Brazil²⁴², *raw milk

incidence: 12/50*, conc. range: 0.25–3.72 µg/l, Ø conc.: 1.03 µg/l, sample year: 1996, country: Egypt²⁵⁶, *raw milk

incidence: 6/30, conc. range: 0.0036–0.0106 µg/l, sample year: 1993/1994, country: Poland/Germany²⁶⁸, sa from Polish chosen farms

incidence: 37/157, conc. range: <0.001 µg/kg (25 sa), 0.001–0.05 µg/kg (12 sa,

maximum: 0.025 µg/kg), sample year: 1993/1994, country: Poland/Germany²⁶⁸, sa from Poland

incidence: 28/36, conc. range: 0.010–0.050 µg/l (18 sa), 0.051–0.100 µg/l (5 sa), 0.101–0.200 µg/l (3 sa), 0.201–0.300 µg/l (2 sa, maximum : 0.251 µg/l), Ø conc.: 0.06 µg/l, sample year: 2004, country: Brazil²⁸²

incidence: 13/13*, conc. range: 0.056–0.082 µg/l, sample year: 2010, country: India²⁹⁰, *different kinds of milk

incidence: 36/325*, conc. range: 0.1–1 µg/l, sample year: unknown country: India³¹⁷, *milk from cows and buffaloes

incidence: 3/21, conc. range: 3.3–13.3 µg/l, sample year: 1974/1975, country: India³²¹

incidence: 5/9*, conc. range: 0.20–0.21 µg/l, Ø conc.: 0.206 µg/l, sample year: 1998, country: Kuwait³²⁹, *fresh milk

incidence: 3/20*, conc. range: 0.007–0.014 µg/l, sample year: 2002, country: Italy⁴³⁶, *raw bovine milk

incidence: 22/42*, conc. range: 0.006–0.244 µg/l, sample year: 2003, country: Italy⁴³⁶, *raw bovine milk

incidence: 33/59*, conc. range: 0.006–0.770 µg/l, sample year: 2004, country: Italy⁴³⁶, *raw bovine milk

incidence: 68/114*, conc. range: 0.004–1.262 µg/l, sample year: 2005, country: Italy⁴³⁶, *raw bovine milk

incidence: 5/9*, conc. range: 0.004–0.064 µg/l, sample year: 2002, country: Italy⁴³⁶, *heat-treated bovine milk

incidence: 6/11*, conc. range: 0.004–0.020 µg/l, sample year: 2003, country: Italy⁴³⁶, *heat-treated bovine milk

incidence: 15/23*, conc. range: 0.006–0.029 µg/l, sample year: 2004, country: Italy⁴³⁶, *heat-treated bovine milk

incidence: 28/50*, conc. range: 0.005–0.088 µg/l, sample year: 2005, country: Italy⁴³⁶, *heat-treated bovine milk

incidence: 27/53*, conc. range: 0.005–0.146 µg/kg, sample year: 1984, country: Italy⁴⁸², *raw milk collected in winter and spring

incidence: 12/18*, conc. range: 0.005–0.030 µg/l, Ø conc.: 0.014 µg/kg, sample year: 1984, country: Italy⁴⁸², *different types of commercial milk

incidence: 4/5*, conc. range: 0.008–0.012 µg/l, Ø conc.: 0.009 µg/l, sample year: 1984, country: Italy⁴⁸², *milk collected from dairy plants

incidence: 83/120, conc. range: 0.0107–0.213 µg/l, sample year: 2004, country: Colombia⁵⁵⁶

incidence: 96/121, conc. range: 0.0106–0.2889 µg/l, sample year: 2005, country: Colombia⁵⁵⁶

incidence: 6/56*, conc. range: 0.012–0.030 µg/l, Ø conc.: 0.016 µg/l, sample year: 1999, country: Argentina⁶⁰⁵, *farm milk

incidence: 8/16*, conc. range: 0.010–0.017 µg/l, Ø conc.: 0.013 µg/l, sample year: 1999, country: Argentina⁶⁰⁵, * commercial pasteurized fluid milk

incidence: 207/208*, conc. range: 0.001–0.029 µg/l, sample year: 2001/2002, country: Japan⁶¹⁶, *pasteurized milk

incidence: 58/79*, conc. range: 0.015–0.050 µg/l (46 sa), 0.050–0.500 µg/l (12 sa), sample year: 1999/2000, country: Brazil⁶²⁰, *pasteurized milk

incidence: 69/87, conc. range: 0.006–0.567 µg/l, sample year: unknown, country: Turkey⁶⁹³

incidence: 5/92*, conc. range: 14.0–24.9 µg/l**, sample year: 2000/2001, country: Spain⁷¹⁹, *raw milk, **measured by ELISA

incidence: 3/9*, conc. range: 13.7–19.1 µg/l**, sample year: 2000/2001, country: Spain⁷¹⁹, *raw milk, **measured by HPLC

incidence: 21/48*, conc. range: 0.01–0.04 µg/kg (20 sa), 0.22 µg/kg (1 sa),

sample year: 1994, country: UK⁷³⁵, *full fat milk

incidence: 31/40*, conc. range: 0.01–0.04 µg/kg (31 sa, maximum: 0.02 µg/kg), sample year: 1994/1995, country: UK⁷³⁵, *full fat milk

incidence: 18/38*, conc. range: 0.01–0.04 µg/kg (18 sa, maximum: 0.03 µg/kg), sample year: 1994, country: UK⁷³⁵, *skimmed and semi-skimmed milk

incidence: 19/36*, conc. range: 0.01–0.04 µg/kg (19 sa, maximum: 0.03 µg/kg), sample year: 1994/1995, country: UK⁷³⁵, *skimmed and semi-skimmed milk

incidence: 11/118*, conc. range: 0.01–0.04 µg/kg (9 sa), 0.05–0.10 µg/kg (1 sa), >0.1 µg/kg (2 sa, maximum: 0.18 µg/kg), sample year: 1988, country: UK⁷³⁷, *farm milk

incidence: 26/127*, conc. range: 0.01–0.04 µg/kg (20 sa), 0.05–0.10 µg/kg (5 sa), 0.16 µg/kg (1 sa), sample year: 1989, country: UK⁷³⁷, *farm milk

incidence: 13/79*, conc. range: 0.01–0.04 µg/kg (10 sa), 0.05–0.10 µg/kg (3 sa, maximum: 0.09 µg/kg), sample year: unknown, country: UK⁷³⁷, *farm milk

incidence: 3/100*, conc. range: 0.01–0.021 µg/l, sample year: unknown, country: UK⁸⁴², *retail and farm-gate milk, conventional (contaminated) and organic (not contaminated)

incidence: 48/54*, conc. range: 0.001–0.117 µg/l, sample year: 2006, country: Morocco/Spain⁷⁵⁸, sa from Morocco, *pasteurized milk

incidence: 624/624*, conc. range: <0.045 µg/l (390 sa), 0.045–0.050 µg/l (123 sa), 0.050–0.080 µg/l (94 sa), >0.080 µg/l (17 sa), sample year: 2003, country: Iran⁸⁸⁶, *pasteurized milk

incidence: 60/94*, conc. range: ≤0.07 µg/l, sample year: 2007, country: Argentina⁸⁸⁹, *raw bulk milk

incidence: 2/2, conc. range: 0.012–0.013 µg/kg, sample year: 2006, country: Sweden⁹¹⁴

incidence: ?/333*, conc. range: ≤0.257 µg/kg, sample year: unknown, country: Sweden⁹¹⁴, *fresh milk

incidence: 122/214, conc. range: 0.003–0.010 µg/l (18 sa), 0.011–0.050 µg/l (92 sa), 0.051–0.110 µg/l (12 sa, maximum: 0.101 µg/l), sample year: 1991/1992, country: Italy⁹²⁵

incidence: 65/113*, conc. range: 0.005–0.025 µg/kg, Ø conc.: 0.00853 µg/l, sample year: 2006, country: Indonesia/Austria⁹⁴⁰, sa from Indonesia, *fresh milk

incidence: 9/264*, conc. range: 0.005–0.026 µg/l, sample year: 2003, country: France⁹⁵², *raw bulk milk

incidence: 145/290*, conc. range: ≥0.05 µg/l (117 sa), ≥0.5 µg/l (28 sa, maximum: 8.35 µg/l), sample year: 1996/1997, country: Mexico⁹⁶⁹, sa from Mexico and imported, *pasteurized and ultrapasteurized milk

incidence: 75/85*, conc. range: <0.010 µg/l (11 sa), 0.011–0.030 µg/l (3 sa), 0.031–0.050 µg/l (13 sa), 0.051–0.070 µg/l (29 sa), 0.071–0.090 µg/l (12 sa), >91 µg/l (7 sa, maximum: 0.1276 µg/l), sample year: unknown, country: Turkey¹⁰⁰³, *pasteurized milk

incidence: 12/12*, conc. range: 0.16–0.32 µg/l (4 sa), 0.32–0.5 µg/l (8 sa), sample year: 2008, country: China/Russia/Korea¹⁰⁴⁰, sa from China, *raw milk

incidence: ?/40, conc. range: 0.001–0.273 µg/kg, sample year: unknown, country: USA¹⁰⁴⁹

incidence: 1/1, conc.: 0.26 µg/l, sample year: unknown, country: France/UK¹⁰⁶⁴

incidence: 35/49*, conc. range: 0.03–3.13 µg/l, Ø conc.: 0.377 µg/l, sample year: 2002, country: UK¹⁰⁶⁹, sa from Libya, *raw milk

incidence: 42/44*, conc. range: 0.22–6.90 µg/l, sample year: 2009, country: Sudan¹⁰⁷³, *bulk milk

incidence: 3/5*, conc. range: 0.11–0.25 µg/l, Ø conc.: 0.16 µg/l, sample year: 2009, country: Sudan¹⁰⁷⁴, *bulk milk

incidence: 83/116*, conc. range: 0.0058–0.5285 µg/l, Ø conc.: 0.0738 µg/l, sample year: 2008/2009, country: Iran¹⁰⁷⁷, *probably cow milk, pasteurized

incidence: 48/48*, conc. range: 0.003–0.200 µg/l, Ø conc.: 0.063 µg/l, sample year: unknown, country: Turkey¹⁰⁸⁰, *raw milk

incidence: 50/50*, conc. range: <0.050 µg/l (19 sa), 0.050–0.080 µg/l (22 sa), >0.080 µg/l (9 sa, maximum: 0.259 µg/l), sample year: 2008, country: Iran¹⁰⁸¹, *pasteurized milk

incidence: 40/44*, conc. range: 0.002–0.01 µg/l (10 sa), 0.01–0.05 µg/l (29 sa), 0.083 µg/l (1 sa), sample year: 2002, country: Taiwan¹⁰⁸³, *fresh milk

incidence: 7/143*, conc. range: 0.10–0.40 µg/l, sample year: 1984/1985, country: Portugal¹⁰⁸⁴, *pasteurized milk

incidence: 20/20*, conc. range: 0.010 to <0.025 µg/kg (8 sa), 0.025–0.050 µg/kg (9 sa), 0.051–0.100 µg/kg (3 sa, maximum: 0.080 µg/kg), Ø conc.: 0.035 µg/kg, sample year: unknown, country: Turkey¹¹⁰¹, *sterilized milk

incidence: 176/177*, conc. range: ≤0.0687 µg/kg, sample year: 2005–2007, country: Kuwait¹¹⁰⁹, *111 local and 66 imported fresh milk sa

incidence: 70/74*, conc. range: 0.020–0.690 µg/l, Ø conc.: 0.143 µg/l, sample year: 2005/2006, country: Syria¹¹¹², *raw milk

incidence: 10/10*, conc. range: 0.008–0.765 µg/l, Ø conc.: 0.492 µg/l, sample year: 2005/2006, country: Syria¹¹¹², *probably cow milk, pasteurized

incidence: 101*/158**, conc. range: 0.015 to >0.410 µg/l, sample year: 2000, country: Iran¹¹¹³, *traditional husbandry, **probably cow milk

incidence: 18*/28**, conc. range: 0.016 to >0.410 µg/l, sample year: 2000, country: Iran¹¹¹³, *industrial husbandry, **probably cow milk

incidence: 8/78*, conc. range: ≤0.066 µg/l, sample year: 2001/2002, country: Italy¹¹¹⁴, *conventional farm tank milk

incidence: 38/78*, conc. range: ≤0.093 µg/l, sample year: 2001/2002, country: Italy¹¹¹⁴, *organic farm tank milk

incidence: 168/168*, conc. range: 0.01–0.70 µg/l, sample year: 2005, country: Pakistan¹¹⁵⁴, *raw milk

incidence: 3/50*, conc. range: 0.01–0.25 µg/kg, sample year: unknown, country: China¹¹⁷², *liquid milk and milk powder

incidence: 85/111*, conc. range: 0.015–0.28 µg/l, sample year: 2001, country: Iran¹¹⁹², *raw milk

incidence: 20/61*, conc. range: 0.0054–0.0305 µg/kg (15 sa), 0.0612–0.3002 µg/kg (5 sa), Ø conc.: 0.04834 µg/kg, sample year: 2007, country: Turkey¹²⁰⁰, *raw milk

incidence: 26/50, conc. range: 0.010–0.050 µg/l (9 sa), 0.051–0.100 µg/l (9 sa), 0.101–0.150 µg/l (4 sa), 0.151–0.200 µg/l (2 sa), 0.201–0.250 µg/l (2 sa, maximum: 0.220 µg/l), sample year: 2003/2004, country: Egypt/Germany/USA¹²⁸⁶, sa from Egypt

incidence: 128/128*, conc. range: 0.031–0.113 µg/kg, Ø conc.: 0.0722 µg/kg, sample year: 2005, country: Iran¹³¹¹, *pasteurized liquid milk

incidence: 70/120*, conc. range: 0.05–0.1 µg/kg (42 sa), 0.1–0.5 µg/kg (18 sa), >0.5 µg/kg (10 sa, maximum: 0.85 µg/kg), sample year: unknown, country: Albania¹³¹⁶, *whole, full skimmed and semi-skimmed milk

incidence: 144/144*, conc. range: <0.01 µg/kg (36 sa), 0.01–0.05 µg/kg (107 sa), 0.055 µg/kg (1 sa), sample year: 2005,

country: Taiwan¹³²², *milk and infant formula

incidence: 302/317*, conc. range: 0.001–0.010 µg/kg (168 sa), 0.011–0.050 µg/kg (121 sa), 0.051–0.100 µg/kg (25 sa), >100 µg/kg (3 sa, maximum: 0.406 µg/kg), sample year: 1993–1999 (except 1997), country: Italy¹³³⁷, *destined for Parmigiano Reggiano cheese production
incidence: 59/75, conc. range: 0.005–0.020 µg/l (18 sa), 0.021–0.050 µg/l (14 sa), >0.050 µg/l (27 sa), Ø conc.: 0.0601 µg/l, sample year: 2007/2008, country: Iran¹³⁵³

incidence: 240/240*, conc. range: 0.014–0.05 µg/l (85 sa), 0.051–0.075 µg/l (52 sa), 0.075–0.100 µg/l (71 sa), ≥0.101 µg/l (32 sa, maximum: 0.197 µg/l), sample year: 2006/2007, country: Thailand¹³⁷⁹, *raw milk

incidence: 150/150*, conc. range: 0.012–0.05 µg/l (41 sa), 0.051–0.075 µg/l (37 sa), 0.075–0.100 µg/l (64 sa), ≥0.101 µg/l (8 sa, maximum: 0.114 µg/l), sample year: 2006/2007, country: Thailand¹³⁸⁰, *pasteurized milk

incidence: 196/196, conc. range: 0.019–0.126 µg/l, Ø conc.: 0.07792 µg/l, sample year: 2008, country: Iran¹³⁸⁸, *pasteurized milk

incidence: 7/10* **, conc. range: 0.010–0.020 µg/kg (7 sa), sample year: 2006, country: Brazil¹⁴¹⁷, *probably cow milk, **pasteurized milk

incidence: 13/22*, conc. range: >LOD (5 sa), 0.02–0.05 µg/l (6 sa), >0.05 to <0.5 µg/l (2 sa), sample year: 2002/2003, country: Brazil¹⁴¹⁸, *raw milk

incidence: 32/43*, conc. range: >LOD (19 sa), 0.02–0.05 µg/l (11 sa), >0.05 to <0.5 µg/l (2 sa), sample year: 2002/2003, country: Brazil¹⁴¹⁸, *pasteurized milk

incidence: 72/72*, conc. range: 0.0043–0.0918 µg/l, Ø conc.: 0.02421 µg/l, sample year: 2005/2006, country: Iran¹⁴⁴⁰, *raw milk

incidence: 72/72*, conc. range: 0.0051–0.0285 µg/l, Ø conc.: 0.00873 µg/l, sample year: 2005/2006, country: Iran¹⁴⁴⁰, *pasteurized milk

incidence: ?/98*, conc. range: ≤0.050 µg/l (61 sa), 0.05–0.10 µg/l (29 sa), 0.1–0.392 µg/l (8 sa), sample year: 2003/2004, country: Iran¹⁴⁴¹, *raw milk

incidence: 10/63, conc. range: 0.006 to <0.05 µg/l (4 sa), >0.05 µg/l (6 sa, maximum: 0.527 µg/l), sample year: 1991–1995, country: Cameroon¹⁴⁴⁹

incidence: 90/90, conc. range: <0.010 µg/kg (14 sa), 0.011–0.020 µg/kg (17 sa), 0.021–0.030 µg/kg (18 sa), 0.031–0.040 µg/kg (7 sa), 0.041–0.050 µg/kg (4 sa), >0.050 µg/kg (30 sa, maximum: 0.085 µg/kg), Ø conc.: 0.038 µg/kg, sample year: 2006, country: Iran¹⁵⁰⁴

incidence: 2/3*, conc. range: 0.010–0.020 µg/l (1 sa), 0.021–0.050 µg/l (1 sa), sample year: unknown, country: Turkey¹⁵⁸⁰, *daily-pasteurized milk

incidence: 40/60, conc. range: 0.011–0.115 µg/l, sample year: 2008/2009, country: Iran/USA¹⁵⁸⁸, sa from Iran

incidence: 13/48*, conc. range: 0.010–0.100 µg/l, Ø conc.: 0.0431 µg/l, sample year: 2009/2010, country: Morocco/France¹⁵⁸⁹, sa from Morocco, *probably cow milk

incidence: 50/50, conc. range: 0.00705–0.12979 µg/kg, Ø conc.: 0.05617 µg/kg, sample year: 2012, country: Jordan¹⁶²¹

AFLATOXIN M₂

incidence: 25/52*, conc. range: 0.0003–0.0034 µg/l, Ø conc.: 0.00086 µg/l, sample year: 2001/2002, country: Japan⁶¹⁶, *pasteurized milk

incidence: 55/214, conc. range: 0.003–0.010 (44 sa) µg/l, 0.011–0.050 µg/l (11 sa, maximum: 0.017 µg/l), sample year: 1991/1992, country: Italy⁹²⁵

AFLATOXINS (M₁, M₂)

incidence: 23/26*, conc. range: 0.10–1.43 µg/l, Ø conc.: 0.593 µg/l, sample year: unknown, country: USA¹²¹, *raw milk

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 2/36, conc. range: 6.4–9.7 µg/l,
 Ø conc.: 8.05 µg/l, sample year: 2004,
 country: Brazil²⁸²

OCHRATOXIN A

incidence: 5/36, conc. range: 0.010–
 0.040 µg/l, sample year: 1990/1991,
 country: Sweden⁵⁸⁰

incidence: 6/40*, conc. range: 0.011–
 0.058 µg/l, sample year: 1995/1996,
 country: Norway⁶⁶², *conventional

incidence: 5/47*, conc. range: 0.015–
 0.028 µg/l, sample year: 1997/1998,
 country: Norway⁶⁶², *organic

incidence: 3/264*, conc. range: 0.005–
 0.0066 µg/l, sample year: 2003, country:
 France⁹⁵², *raw bulk milk

incidence: 1/5*, conc.: 2.73 µg/l, sample
 year: 2009, country: Sudan¹⁰⁷⁴, *bulk
 milk

Fusarium ToxinsFUMONISIN B₁

incidence: 1/165, conc. 1.29 µg/l, sample
 year: 1993, country: USA³⁷⁷

Milk (ewe's milk) may contain the
 following mycotoxins:

Aspergillus ToxinsAFLATOXIN M₁

incidence: ?/407*, conc. range: <0.005 µg/
 kg (243 sa), 0.005–0.010 µg/kg (114 sa),
 >0.010–0.020 µg/kg (36 sa), >0.020–
 0.050 µg/kg (11 sa), >0.050 µg/kg (3 sa,
 maximum: 0.0839 µg/kg), sample year:
 2007/2008, country: Spain¹¹⁷⁴, *bulk tank
 milk for Manchego cheese production
 incidence: ?/82*, conc. range: <0.005 µg/
 kg (32 sa), 0.005–0.010 µg/kg (40 sa),
 >0.010–0.020 µg/kg (7 sa), >0.020–
 0.050 µg/kg (2 sa), 0.1299 µg/kg (1 sa),
 sample year: 2007/2008, country: Spain¹¹⁷⁴,
 *silo milk for Manchego cheese
 production

incidence: 27/54, conc. range:
 <0.0182 µg/l, sample year: 2002, country:
 Greece¹⁵⁰⁵

Milk (goat milk) may contain the
 following mycotoxins:

Aspergillus ToxinsAFLATOXIN M₁

incidence: 7/100*, conc. range: ≥0.005–
 0.010 µg/l (4 sa), >0.010–0.020 µg/l (3 sa,
 maximum: 12.5 µg/l), Ø conc.: 0.010 µg/l,
 sample year: 2003, country: Italy⁸⁵, *bulk-
 tank goat milk

incidence: 29/108*, conc. range:
 ≥0.005–0.010 µg/l (11 sa), >0.010–
 0.020 µg/l (9 sa), >0.020–0.030 µg/l
 (7 sa), >0.030–0.040 µg/l (2 sa, maximum:
 36.1 µg/l), Ø conc.: 0.0151 µg/l, sample
 year: 2004, country: Italy⁸⁵, *bulk-tank
 goat milk

incidence: 20/28*, conc. range: ≥0.005–
 0.010 µg/l (5 sa), >0.010–0.020 µg/l (6 sa),
 >0.020–0.030 µg/l (7 sa), >0.030–
 0.040 µg/l (2 sa, maximum: 36.1 µg/l),
 Ø conc.: 0.0177 µg/l, sample year: 2004,
 country: Italy⁸⁵, *intensive animal
 husbandry system

incidence: 9/80*, conc. range: ≥0.005–
 0.010 µg/l (6 sa), >0.010–0.020 µg/l (3 sa),
 Ø conc.: 0.009 µg/l, sample year: 2004,
 country: Italy⁸⁵, *extensive animal
 husbandry system

incidence: 2/36*, Ø conc.: 0.0099 µg/l,
 sample year: 2003, country: Italy⁸⁵, *sa
 from extensive farms

incidence: 1/36*, conc.: 0.0081 µg/l,
 sample year: 2004, country: Italy⁸⁵, *sa
 from extensive farms

incidence: 4/10*, conc. range: 0.011–
 0.02 µg/l (2 sa), 0.021–0.05 µg/l (2 sa),
 sample year: 1999/2000, country:
 Greece¹⁵⁰, *raw milk

incidence: 8/12*, conc. range: 0.005–
 0.01 µg/l (7 sa), 0.011–0.02 µg/l (1 sa),
 sample year: 2000/2001, country:
 Greece¹⁵⁰, *raw milk

incidence: 25/80, conc. range: 0.004–0.010 µg/kg (14 sa), 0.011–0.020 µg/kg (10 sa), 0.037 µg/kg (1 sa), sample year: 1996, country: Italy¹⁰⁸⁸

incidence: 7/11*, conc. range: 0.008–0.054 µg/l, Ø conc.: 0.019 µg/l, sample year: 2005/2006, country: Syria¹¹¹², *raw milk

incidence: 18/50, conc. range: 0.010–0.050 µg/l (15 sa), 0.051–0.100 µg/l (6 sa), 0.101–0.150 µg/l (3 sa), 0.151–0.200 µg/l (3 sa), 0.230 µg/l (1 sa), sample year: 2003/2004, country: Egypt/Germany/USA¹²⁸⁶, sa from Egypt

incidence: 7/12*, conc. range: 0.010–0.050 µg/l (4 sa), 0.051–0.100 µg/l (1 sa), 0.101–0.200 µg/l (2 sa), Ø conc.: 0.072 µg/l, sample year: 2004/2005, country: Brazil¹³⁰⁷, *pasteurized milk

incidence: 19/60, conc. range: 0.005–0.020 µg/l (7 sa), 0.021–0.050 µg/l (8 sa), >0.050 µg/l (4 sa), Ø conc.: 0.0301 µg/l, sample year: 2007/2008, country: Iran¹³⁵³

incidence: 17/48, conc. range: 0.015–0.061 µg/l, sample year: 2008/2009, country: Iran/USA¹⁵⁸⁸, sa from Iran

AFLATOXIN M₂

incidence: 2/8, conc. range: pr, sample year: unknown, country: India²¹⁴

Milk (human breast milk) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXICOL

incidence: 6/800, conc. range: 0.014–0.270 µg/l, sample year: unknown, country: UK¹²⁷, sa from Ghana, Kenya, and Sudan

incidence: 41/113, conc. range: 0.005–50.9 µg/l, sample year: unknown, country: Sierra Leone/UK¹¹⁷⁸, sa from Sierra Leone

AFLATOXIN B₁

incidence: 41/800, conc. range: 0.150–55,792 µg/l, sample year: unknown,

country: UK¹²⁷, sa from Ghana, Kenya, and Sudan

incidence: 1/231, conc.: 0.0114 µg/l, sample year: 1999, country: Italy⁶⁶⁹

incidence: 75/75, conc. range: 0.094–0.129 µg/l (17 sa), 0.130–0.149 µg/l (15 sa), 0.200–0.300 µg/l (10 sa), >0.300 µg/l (8 sa), maximum: 4.12380 µg/l, sample year: 2007/2008, country: Turkey¹¹²⁶

incidence: 20/113, conc. range: 0.05–372 µg/l, sample year: unknown, country: Sierra Leone/UK¹¹⁷⁸, sa from Sierra Leone

AFLATOXIN B₂

incidence: 10/800, conc. range: 0.049–0.623 µg/l, sample year: unknown, country: UK¹²⁷, sa from Ghana, Kenya, and Sudan

AFLATOXIN G₁

incidence: 4/800, conc. range: 1,890–5,180 µg/l, sample year: unknown, country: UK¹²⁷, sa from Ghana, Kenya, and Sudan

incidence: 3/5, conc. range: nc, sample year: unknown, country: USA/France/UK²⁰⁰, sa from Gambia

incidence: 22/113, conc. range: 0.005–139 µg/l, sample year: unknown, country: Sierra Leone/UK¹¹⁷⁸, sa from Sierra Leone

AFLATOXIN G₂

incidence: 3/800, conc. range: 0.01–0.087 µg/l, sample year: unknown, country: UK¹²⁷, sa from Ghana, Kenya, and Sudan

incidence: 25/113, conc. range: 0.003–366 µg/l, sample year: unknown, country: Sierra Leone/UK¹¹⁷⁸, sa from Sierra Leone

AFLATOXIN M₁

incidence: 11/73, conc. range: 0.028–1.031 µg/l, Ø conc.: 0.194 µg/l, sample year: 1991/1992, country: Australia/UK⁴⁵, sa from Australia

incidence: 4/11, conc. range: 0.039–1.736 µg/l, Ø conc.: 0.776 µg/l, sample

year: 1991, country: Australia/UK⁴⁵,
sa from Thailand

incidence: 248/443, conc. range: 0.0042–
0.889 µg/kg, sample year: 2003, country:
Finland/UK/Egypt⁵¹, sa from Egypt

incidence: 6/64, conc. range: 0.0141–
0.0505 µg/l, Ø conc.: 0.03365 µg/l, sample
year: unknown, country: France/
Zimbabwe⁷⁹, sa from Zimbabwe

incidence: 253/800, conc. range: 0.005–
1,379 µg/l, sample year: unknown,
country: UK¹²⁷, sa from Ghana, Kenya,
and Sudan

incidence: 10/64, conc. range: 0.3–1.3 µg/l,
Ø conc.: 0.770 µg/l, sample year:
unknown, country: UK/UAE¹⁵¹,
sa from UAE

incidence: 443/445*, conc. range:
0–3.000 µg/l, sample year: 1989/1990,
country: UAE¹⁵², *donors from different
countries

incidence: 5/5, conc. range: ≤0.0014 µg/l,
sample year: unknown, country: USA/
France/UK²⁰⁰, sa from Gambia

incidence: 2/10, conc. range: 0.5–5 µg/l,
Ø conc.: 2.75 µg/l, sample year: 1999/2000,
country: Egypt²²¹

incidence: 138/388, conc. range: 0.0056–
5.131 µg/l, sample year: 2003, country:
Finland/UK/Egypt⁵³⁸, sa from Egypt

incidence: 1/50, conc.: 0.024 µg/l,
sample year: 2001/2002, country:
Brazil⁶¹⁷

incidence: 129/140, conc. range: ≤3.4 µg/l,
sample year: 1999/2000, country: UAE⁶¹⁹,
sa from UAE and different countries

incidence: 1/231, conc.: 0.194 µg/l, sample
year: 1999, country: Italy⁶⁶⁹

incidence: 66/120, conc. range: 0.02–
2.09 µg/l, sample year: 2000–2002,
country: Egypt⁶⁷¹

incidence: 4/40, conc. range: 0.005–0.014 µg/
kg, sample year: 1992/1993, Ø conc.:
0.0725 µg/kg, country: Switzerland⁶⁹²

incidence: 13/99, conc. range: 0.005–
0.064 µg/l, Ø conc.: 0.019 µg/l, sample
year: unknown, country: UK/Sudan¹⁰⁵²,
sa from Sudan

incidence: 4/82, conc. range: 0.007–
0.010 µg/l (1 sa), >0.010–0.050 µg/l (2 sa),
0.140 µg/l (1 sa), Ø conc.: 0.055 µg/l,
sample year: 2006, country: Italy¹⁰⁹⁵

incidence: 75/75, conc. range: 0.060–
0.079 µg/l (13 sa), 0.080–0.099 µg/l (24 sa),
0.100 to >150 µg/l (38 sa, maximum:
0.29999 µg/l), sample year: 2007/2008,
country: Turkey¹¹²⁶

incidence: 35/113, conc. range:
0.2–99 µg/l, sample year: unknown,
country: Sierra Leone/UK¹¹⁷⁸, sa from
Sierra Leone

incidence: 8/61, conc. range: 0.0051–
0.0069 µg/kg, Ø conc.: 0.00568 µg/kg,
sample year: 2006/2007, country:
Turkey¹²⁰⁰

incidence: 157/160, conc. range: 0.003–
0.0267 µg/kg, sample year: 2006, country:
Iran¹³⁸⁴

incidence: 3/62, conc. range: 0.005–
0.625 µg/l, sample year: 1991–1995,
country: Cameroon¹⁴⁴⁹

incidence: 87/125, conc. range: 0.005–
0.025 µg/l (22 sa), >0.025–0.050 µg/l
(18 sa), >0.050–0.100 µg/l (26 sa), >0.100–
0.200 µg/l (17 sa), >0.200 µg/l (4 sa,
maximum: 0.3286 µg/l), sample year:
2010, country: Egypt¹⁶⁰⁶

incidence: 80/80, conc. range: 0.00917–
0.13718 µg/kg, Ø conc.: 0.06778 µg/kg,
sample year: 2011, country: Jordan¹⁶²¹

incidence: 20/91*, conc. range: 0.0051–
0.0081 µg/l, Ø conc.: 0.00696 µg/l, sample
year: 2007, country: Iran¹⁶³⁹, *sa from
rural areas

AFLATOXIN M₂

incidence: 103/800, conc. range:
0.003–6,368 µg/l, sample year: unknown,
country: UK¹²⁷, sa from Ghana, Kenya,
and Sudan

incidence: 11/99, conc. range: 0.003–0.020 µg/l, Ø conc.: 0.0122 µg/l, sample year: unknown, country: UK/Sudan¹⁰⁵², sa from Sudan

incidence: 70/113, conc. range: 0.07–77.5 µg/l, sample year: unknown, country: Sierra Leone/UK¹¹⁷⁸, sa from Sierra Leone

AFLATOXINS (M₁, M₂)

incidence: 13/99, conc. range: 0.003–0.084 µg/l, Ø conc.: 0.0347 µg/l, sample year: unknown, country: UK/Sudan¹⁰⁵², sa from Sudan

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 38/115, conc. range: 0.010–0.130 µg/l, Ø conc.: 0.03756 µg/l, sample year: 1994, country: Norway²⁰⁹

incidence: 3/10, conc. range: 3–15 µg/l, Ø conc.: 8.87 µg/l, sample year: 1999/2000, country: Egypt²²¹

incidence: 2/100, conc. range: 3–3.6 µg/l, Ø conc.: 3.3 µg/l, sample year: unknown, country: Australia²⁵⁵

incidence: 23/40, conc. range: 0.010–0.040 µg/l, sample year: 1990/1991, country: Sweden⁵⁸⁰

incidence: 4/36, conc. range: 0.017–0.030 µg/l, sample year: 1986, country: Germany⁵⁹⁷

incidence: 2/50, conc. range: 0.011–0.024 µg/l, Ø conc.: 0.018 µg/l, sample year: 2001/2002, country: Brazil⁶¹⁷

incidence: 17/80, conc. range: 0.010–0.182 µg/l, Ø conc.: 0.030 µg/l, sample year: 1995/1996, country: Norway⁶⁶³

incidence: 198/231, conc. range: 0.005–0.057 µg/l, sample year: 1999, country: Italy⁶⁶⁹

incidence: 43/120, conc. range: 5.07–45.01 µg/l, sample year: 2000–2002, country: Egypt⁶⁷¹

incidence: 41/52*, conc. range: >0.001–0.002 µg/l (4 sa), >0.002–0.004 µg/l (17 sa), >0.004–0.005 µg/l (3 sa), >0.005–

0.010 µg/l (6 sa), >0.010–0.020 µg/l (5 sa), >0.020–0.030 µg/l (4 sa), >0.030 µg/l (2 sa), maximum: 0.0751 µg/l, Ø conc.:

0.010 µg/l, sample year: 2007, country: Italy⁹⁹⁴, *breast milk from Italian and non-Italian women

incidence: 96/142*, conc. range: LOD/LOQ–0.90 µg/l (93 sa), 1.0–2.35 µg/l (3 sa), sample year: 2000, country: EU¹⁰³³, *human breast milk sa from Italy

incidence: 38/115*, conc. range: LOD/LOQ–0.90 µg/l (38 sa, maximum: 0.13 µg/l), sample year: 1998, country: EU¹⁰³³, *human breast milk sa from Netherlands

incidence: 23/76, conc. range: 0.0048–0.0144 µg/l (14 sa), ≤0.0603 µg/l (9 sa), sample year: 2007, country: Slovakia¹⁰⁶³

incidence: 61/82, conc. range: 0.005–0.010 µg/l (28 sa), >0.010–0.050 µg/l (27 sa), >0.050–0.405 µg/l (6 sa), Ø conc.: 0.030 µg/l, sample year: 2006, country: Italy¹⁰⁹⁵

incidence: 75/75, conc. range: 0.600–1.499 µg/l (28 sa), 1.500–2.499 µg/l (31 sa), 2.500–2.999 µg/l (3 sa), 3.000–3.499 µg/l (3 sa), >3.500 µg/l (10 sa, maximum: 13.11130 µg/l), sample year: 2007/2008, country: Turkey¹¹²⁵

incidence: 40/113, conc. range: 0.2–337 µg/l, sample year: unknown, country: Sierra Leone/UK¹¹⁷⁸, sa from Sierra Leone

incidence: 38/92, conc. range: 0.22–1 µg/l (13 sa), 1–2 µg/l (12 sa), 2–3 µg/l (8 sa), 3–5 µg/l (3 sa), >5 µg/l (2 sa, maximum: 7.63 µg/l), sample year: unknown, country: Hungary¹²⁰⁷

incidence: 5/13, conc. range: 0.0053–0.017 µg/l, Ø conc.: 0.01026 µg/l, sample year: 1998/1999, country: Poland¹³⁴⁹

incidence: 9/9, conc. range: 0.071–0.184 µg/l, Ø conc.: 0.117 µg/l, sample year: 2008/2009, country: Germany/Chile¹⁴⁷⁸, sa from Chile

Milk (sheep milk) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/8, conc. range: pr, sample year: unknown, country: India²¹⁴

AFLATOXIN M₁

incidence: 8/12*, conc. range: 0.005–0.01 µg/l (3 sa), 0.011–0.02 µg/l (3 sa), 0.021–0.05 µg/l (2 sa), sample year: 1999/2000, country: Greece¹⁵⁰, *raw milk

incidence: 11/15*, conc. range: 0.005–0.01 µg/l (6 sa), 0.011–0.02 µg/l (3 sa), 0.021–0.05 µg/l (1 sa), >0.05 µg/l (1 sa), sample year: 2000/2001, country: Greece¹⁵⁰, *raw milk

incidence: 2/8, conc. range: pr, sample year: unknown, country: India²¹⁴

incidence: 195/240*, conc. range: 0.001–0.010 µg/l (145 sa), >0.010–0.050 µg/l (47 sa), >0.050 µg/l (3 sa, maximum: 0.108 µg/l), Ø conc.: 0.01536 µg/l, sample year: 2000, country: Italy²⁴⁵, *dairy milk

incidence: 12/40, conc. range: 0.004–0.023 µg/l, sample year: 2001/2002, country: Italy¹⁰⁸⁹

incidence: 13/23*, conc. range: 0.006–0.634 µg/l, Ø conc.: 0.067 µg/l, sample year: 2005/2006, country: Syria¹¹¹², *raw milk

incidence: 19?/51, conc. range: 0.005–0.020 µg/l (8 sa), 0.021–0.050 µg/l (8 sa), >0.050 µg/l (2 sa), Ø conc.: 0.0281 µg/l, sample year: 2007/2008, country: Iran¹³⁵³

incidence: 13/42, conc. range: 0.008–0.050 µg/l, sample year: 2008/2009, country: Iran/USA¹⁵⁸⁸, sa from Iran

Milk (sheep/goat milk) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 4/7*, conc. range: 0.006–0.009 µg/l, sample year: 2003, country: Italy⁴³⁶, *raw milk

incidence: 2/8*, conc. range: 0.009–0.027 µg/l, sample year: 2004, country: Italy⁴³⁶, *raw milk

incidence: 1/1*, conc.: 0.031 µg/l, sample year: 2005, country: Italy⁴³⁶, *raw milk

Milk, buttermilk may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 50/50, conc. range: 0.04797–2.02711 µg/kg, Ø conc.: 1.07974 µg/kg, sample year: 2012, country: Jordan¹⁶²¹

Milk, infant formula may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 18/26, conc. range: 0.032–0.132 µg/l, Ø conc.: 0.062 µg/l, sample year: 1997, country: Korea⁹⁶

incidence: 4/62, conc. range: 0.02–0.05 µg/kg* (4 sa, maximum: 0.05 µg/kg), sample year: unknown, country: UK⁷³⁵, *on dry weight basis

incidence: 17/18, conc. range: 0.143–0.770 µg/kg, Ø conc.: 0.326 µg/kg, sample year: unknown, country: India¹⁰⁷⁹

incidence: 2/185*, conc. range: 0.0118–0.0153 µg/l, Ø conc.: 0.01355 µg/l, sample year: 2006/2007, country: Italy¹²⁶⁹, *infant cow's milk-based formula

incidence: 116/120, conc. range: 0.001–0.014 µg/kg, sample year: 2005, country: Iran¹³¹¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 40/50*, conc. range: ≤0.6895 µg/l, sample year: 2006/2007, country: Italy¹²⁶⁹, *pre-term infant formula liquid

incidence: 5/5*, conc. range: 0.08049–0.1273 µg/l, Ø conc.: 0.09610 µg/l, sample year: 2006/2007, country: Italy¹²⁶⁹, *pre-term infant formula powder

incidence: 40/50*, conc. range: ≤ 0.2991 $\mu\text{g/l}$, sample year: 2006/2007, country: Italy¹²⁶⁹, *starter infant formula liquid

incidence: 48/80*, conc. range: ≤ 0.3558 $\mu\text{g/l}$, sample year: 2006/2007, country: Italy¹²⁶⁹, *starter infant formula powder

Fusarium Toxins

α -ZEARALENOL

incidence: 49/185*, conc. range: ≤ 12.91 $\mu\text{g/l}$, sample year: unknown, country: Italy¹⁰⁴⁶, *cow's milk-based infant formula (liquid and powder), preterm and starter; for detailed information please see the article

β -ZEARALENOL

incidence: 53/185*, conc. range: ≤ 73.24 $\mu\text{g/l}$, sample year: unknown, country: Italy¹⁰⁴⁶, *cow's milk-based infant formula (liquid and powder), preterm and starter; for detailed information please see the article

ZEARALENONE

incidence: 17/185*, conc. range: ≤ 0.76 $\mu\text{g/l}$, sample year: unknown, country: Italy¹⁰⁴⁶, *cow's milk-based infant formula (liquid and powder), preterm and starter; for detailed information please see the article

Milk, UHT milk may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 14/47, conc. range: 0.02–0.1 $\mu\text{g/l}$, \emptyset conc.: 0.0379 $\mu\text{g/l}$, sample year: 1985, country: Spain¹⁹

incidence: 12/76*, conc. range: 0.02–0.04 $\mu\text{g/kg}$, sample year: 1993, country: Spain⁴¹, *included 24 semi-skimmed sa, all not contaminated

incidence: 14/17, conc. range: 0.005–0.01 $\mu\text{g/l}$ (4 sa), 0.011–0.02 $\mu\text{g/l}$ (6 sa), 0.021–0.05 $\mu\text{g/l}$ (4 sa), sample year: 1999/2001, country: Greece¹⁵⁰

incidence: 60/60, conc. range: >0 –0.05 $\mu\text{g/l}$ (7 sa), >0.05 –0.125 $\mu\text{g/l}$ (5 sa), >0.125 –0.25 $\mu\text{g/l}$ (12 sa), >0.25 –0.5 $\mu\text{g/l}$ (29 sa), >0.5 $\mu\text{g/l}$ (7 sa), sample year: 1995/1996, country: Thailand¹⁵⁵

incidence: 5/105, conc. range: 0.0141–0.0349 $\mu\text{g/l}$, sample year: 1998/1999, country: Brazil¹⁸⁶

incidence: 17/18*, conc. range: 0.005–0.010 $\mu\text{g/l}$ (2 sa), 0.011–0.020 $\mu\text{g/l}$ (8 sa), 0.021–0.050 $\mu\text{g/l}$ (6 sa), 0.059 $\mu\text{g/l}$ (1 sa), sample year: 1999, country: Portugal²²³, *UHT-whole milk

incidence: 20/22*, conc. range: 0.011–0.020 $\mu\text{g/l}$ (1 sa), 0.021–0.050 $\mu\text{g/l}$ (18 sa), 0.061 $\mu\text{g/l}$ (1 sa), sample year: 1999, country: Portugal²²³, *UHT semi-skimmed milk

incidence: 23/30*, conc. range: 0.005–0.010 $\mu\text{g/l}$ (7 sa), 0.011–0.020 $\mu\text{g/l}$ (16 sa), sample year: 1999, country: Portugal²²³, *UHT skimmed milk

incidence: 9/12, conc. range: 0.010–0.050 $\mu\text{g/l}$ (3 sa), 0.051–0.100 $\mu\text{g/l}$ (4 sa), 0.101–0.200 $\mu\text{g/l}$ (2 sa), \emptyset conc.: 0.075 $\mu\text{g/l}$, sample year: 2004, country: Brazil²⁸²

incidence: 125/161, conc. range: 0.001–0.010 $\mu\text{g/l}$ (112 sa), >0.010 –0.050 $\mu\text{g/l}$ (13 sa, maximum: 0.0235 $\mu\text{g/l}$), \emptyset conc.: 0.00628 $\mu\text{g/l}$, sample year: 1996, country: Italy⁶¹³

incidence: 53/60, conc. range: 0.015–0.050 $\mu\text{g/l}$ (36 sa), 0.050–0.500 $\mu\text{g/l}$ (17 sa), sample year: 1999/2000, country: Brazil⁶²⁰

incidence: 39/43, conc. range: 0.003–0.010 $\mu\text{g/l}$ (30 sa), 0.011–0.020 $\mu\text{g/l}$ (6 sa), 0.021–0.030 $\mu\text{g/l}$ (2 sa), 0.035 $\mu\text{g/l}$ (1 sa), sample year: unknown, country: Italy⁹⁶⁸

incidence: 68/109, conc. range: 0.0056–0.5159 $\mu\text{g/l}$, \emptyset conc.: 0.0743 $\mu\text{g/l}$, sample year: 2008/2009, country: Iran¹⁰⁷⁷

incidence: 4/105*, conc. range: >0.050 –0.0888 $\mu\text{g/kg}$, sample year: 2005–2007, country: Kuwait¹¹⁰⁹, *52 local and 53 imported long-life milk sa

incidence: 50/50, conc. range: 0.005–0.244 µg/l, Ø conc.: 0.1012 µg/l, sample year: 2004, country: Turkey¹¹²⁴

incidence: 75/129*, conc. range: <0.01 µg/l (4 sa), 0.010–0.049 µg/l (10 sa), 0.050–0.499 µg/l (57 sa), >0.500 µg/l (4 sa, maximum: 0.54364 µg/l), sample year: 2005, country: Turkey¹¹³¹, *whole UHT milk

incidence: 116/210, conc. range: 0.008–0.249 µg/l, sample year: 2007/2008, country: Iran¹¹⁴⁵

incidence: 52/52*, conc. range: 0.01940 µg/kg (1 sa), 0.020–0.040 µg/kg (8 sa), 0.040–0.060 µg/kg (7 sa), 0.060–0.080 µg/kg (21 sa), 0.080–0.100 µg/kg (15 sa, maximum: 0.09360 µg/kg), Ø conc.: 0.06764 µg/kg, sample year: 2004, country: Iran¹¹⁹¹

incidence: 10/12*, conc. range: 0.010–0.050 µg/l (4 sa), 0.051–0.100 µg/l (5 sa), 0.101–0.200 µg/l (1 sa), Ø conc.: 0.058 µg/l, sample year: 2004/2005, country: Brazil¹³⁰⁷, *goat UHT milk

incidence: 9/80*, conc. range: 0.0396–0.1028 µg/l, Ø conc.: 0.073 µg/l, sample year: 1998/1999, country: Pakistan¹³⁵⁸, *UHT-treated buffalo milk

incidence: 40/40, conc. range: 0.010–0.020 µg/kg (28 sa), 0.020–0.050 µg/kg (11 sa), 0.050–0.500 µg/kg (1 sa), sample year: 2002/2003, country: Brazil¹⁴¹⁷

incidence: 34/42, conc. range: >LOD (11 sa), 0.02–0.05 µg/l (20 sa), >0.05 to <0.5 µg/l (3 sa), sample year: 2006, country: Brazil¹⁴¹⁸

incidence: 67/100, conc. range: 0.010–0.025 µg/kg (12 sa), 0.026–0.050 µg/kg (24 sa), 0.051–0.100 µg/kg (18 sa), >0.100 µg/kg (13 sa, maximum: 0.630 µg/kg), sample year: 2007/2008, country: Turkey¹⁴⁵¹

incidence: 11/19*, conc. range: 0.010–0.020 µg/l (5 sa), 0.021–0.050 µg/l (5 sa), 0.0505 µg/l (1 sa), sample year: unknown, country: Turkey¹⁵⁸⁰, *UHT whole milk

incidence: 3/5*, conc. range: 0.010–0.020 µg/l (2 sa), 0.021–0.050 µg/l (1 sa),

sample year: unknown, country: Turkey¹⁵⁸⁰, *UHT skimmed milk

Milk packet may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 16/44, conc. range: 0.6–15 µg/kg (11 sa), 16–30 µg/kg (5 sa), sample year: unknown, country: India¹⁹⁵

Milk powder see Powder (Milk powder)

Milk products see Product (Milk products)

Milk substitute may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/4* **, conc. range: 0.1–0.71 µg/l***, Ø conc.: 0.36 µg/l***, sample year: unknown country: USA¹¹³², *sa source: medical center, **hypoallergenic, ***only HPLC values used

incidence: 2/12* **, conc. range: 0.14–0.9 µg/l, Ø conc.: 0.52 µg/l, sample year: unknown country: USA¹¹³², *sa source: open market, **hypoallergenic

AFLATOXIN B₂

incidence: 3/4* **, conc. range: 0.05–0.64 µg/l, Ø conc.: 0.27 µg/l, sample year: unknown country: USA¹¹³², *sa source: medical center, **hypoallergenic

AFLATOXIN G₁

incidence: 1/4* **, conc.: 3.79 µg/l, sample year: unknown country: USA¹¹³², *sa source: medical center, **hypoallergenic

AFLATOXIN G₂

incidence: 1/4* **, conc.: 6.24 µg/l, sample year: unknown country: USA¹¹³², *sa source: medical center, **hypoallergenic

Milk thistle may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 14*/48, conc. range: 0.04–1.90 µg/kg, sample year: unknown, country: USA¹⁴⁶⁴, *number of sa with AF ≥0.04 µg/kg

incidence: 2*/8, conc. range: 0.06 µg/kg, sample year: unknown, country: USA¹⁴⁶⁴, *number of sa with AF ≥0.04 µg/kg

AFLATOXINS (TOTAL)

incidence: 14*/48, conc. range: 0.04–2.04 µg/kg, sample year: unknown, country: USA¹⁴⁶⁴, *number of sa with AF ≥0.04 µg/kg

incidence: 2*/8, conc. range: 0.06 µg/kg, sample year: unknown, country: USA¹⁴⁶⁴, *number of sa with AF ≥0.04 µg/kg

Millet may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 1/8* ** ***, conc.: 30 µg/kg, sample year: unknown, country: India³³⁷, *ncac, **Ragi (*Eleusine coracana*), ***quality of sa: discolored

ALTERNARIOL

incidence: 13/16*, conc. range: 0.3–10 µg/kg, Ø conc.: 2 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

ALTERNARIOL METHYL ETHER

incidence: 2/8* ** ***, conc. range: 800–1,400 µg/kg, Ø conc.: 1,100 µg/kg, sample year: unknown, country: India³³⁷, *ncac, **Ragi (*Eleusine coracana*), ***quality of sa: partially discolored and discolored

incidence: 13/16*, conc. range: 0.3–16 µg/kg, Ø conc.: 3 µg/kg, sample year: 2011,

country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

MACROSPORIN A

incidence: 16/16*, conc. range: 4–555 µg/kg, Ø conc.: 156 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

TENUAZONIC ACID

incidence: 3/8* ** ***, conc. range: 2,030–5,700 µg/kg, Ø conc.: 3,843 µg/kg, sample year: unknown, country: India³³⁷, *ncac, **Ragi (*Eleusine coracana*), ***quality of sa: partially discolored and discolored
incidence: 16/16*, conc. range: 14–1,049 µg/kg, Ø conc.: 235 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/22*, conc. range: <20 µg/kg (1 sa), 21–100 µg/kg (5 sa), 101–500 µg/kg (2 sa, maximum: 240 µg/kg), sample year: 1987, country: India³⁹⁸, *Ragi (*Eleusine coracana*)

incidence: 13/18, conc. range: 21–100 µg/kg (2 sa), 101–500 µg/kg (4 sa), 501–1,000 (7 sa, maximum: 738 µg/kg), sample year: 1987, country: India³⁹⁸, *Kheri (*Echinochloa frumentacea*)

incidence: 17/30*, conc. range: 12–44 µg/kg, sample year: unknown, country: India⁴⁷⁶, *Kodon (*Paspalum scrobiculatum*) and Kutki (*Panicum miliare*)

incidence: 4/24*, conc. range: 2.4–20.0 µg/kg, Ø conc.: 12.0 µg/kg, sample year: unknown, country: Nigeria⁷⁶⁸, *moldy stored and field sa of acha (*Digitaria exilis*) (2 sa co-contaminated with AFB₁, AFB₂, DON, and ZEA, 1 sa co-contaminated with AFB₁, DON, and ZEA, 1 sa contaminated solely with AFB₁)

incidence: 10/37*, conc. range: 18–55 µg/kg, sample year: 1981, country: India⁷⁸⁹, *Ragi (*Eleusine coracana*)

incidence: 2/38, conc. range: 0.15–2.14 µg/kg, Ø conc.: 1.15 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 9/9*, conc. range: 34.00–40.30 µg/kg, Ø conc.: 37.52 µg/kg, sample year: 2004/2005, country: Nigeria¹⁴⁷⁹, *sa from markets

incidence: 13/16*, conc. range: 0.08–1.4 µg/kg, Ø conc.: 0.4 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

AFLATOXIN B₂

incidence: 2/24*, conc. range: 8.0–12.0 µg/kg, Ø conc.: 10.0 µg/kg, sample year: unknown, country: Nigeria⁷⁶⁸, *moldy stored and field sa of acha (*Digitaria exilis*) (2 sa co-contaminated with AFB₁, AFB₂, DON, and ZEA)

incidence: 5/37*, conc. range: 12–30 µg/kg, sample year: 1981, country: India⁷⁸⁹, *Ragi (*Eleusine coracana*)

incidence: 4/16*, conc. range: 0.07–0.1 µg/kg, Ø conc.: 0.08 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

AFLATOXIN G₁

incidence: 4/16*, conc. range: 0.2–2 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

AFLATOXINS (B₁, B₂)

incidence: 9/9*, conc. range: 1–27 µg/kg, Ø conc.: 9.8 µg/kg, sample year: unknown, country: UK/France/USA⁷², sa from Gambia, *(*Pennisetum typhoideum*, Sanyo)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 9*/55, conc. range: 1–100 µg/kg, sample year: 1966/1967, country: Uganda/USA⁵, sa from Uganda, *6 sa contained AFB₁, 4 sa contained AFB₂, 2 sa contained AFG₁, 1 sa contained AFG₂

incidence: 5/44*, conc. range: ≤248 µg/kg, Ø conc.: 67 µg/kg, sample year: 1967–1969, country: Thailand¹⁶³, *included millet, barley, Job's tears, oats (Hong Kong), and wheat

AVERUFIN

incidence: 14/16*, conc. range: 0.03–9.5 µg/kg, Ø conc.: 1.1 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

FUMAGILLIN

incidence: 2/16*, conc. range: 17–31 µg/kg, Ø conc.: 24 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

FUMIGAFLAVIN A

incidence: 5/16*, conc. range: 0.3–4 µg/kg, Ø conc.: 1.3 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

METHYLSULOCHRIN

incidence: 9/16*, conc. range: 0.1–6 µg/kg, Ø conc.: 1.1 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

STERIGMATOCYSTIN

incidence: 10/16*, conc. range: 0.2–31 µg/kg, Ø conc.: 7 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

VERSICOLORIN A

incidence: 3/16*, conc. range: 0.16–1.7 µg/kg, Ø conc.: 0.8 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

VERSICOLORIN C

incidence: 11/16*, conc. range: 0.05–5.0 µg/kg, Ø conc.: 0.9 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/16*, conc.: 21 µg/kg,
sample year: 2011, country: Nigeria/
Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet
(acha = *Digitaria exilis*)

CYCLOPIAZONIC ACID

incidence: 1/1*, conc.: pr, sample year:
unknown, country: India¹³⁵⁴, *kodo millet
(*Paspalum scrobiculatum*)

KOJIC ACID

incidence: 13/16*, conc. range:
71–2,841 µg/kg, Ø conc.: 643 µg/kg,
sample year: 2011, country: Nigeria/
Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet
(acha = *Digitaria exilis*)

3-NITROPROPIONIC ACID

incidence: 16/16*, conc. range: 71–682 µg/
kg, Ø conc.: 252 µg/kg, sample year: 2011,
country: Nigeria/Austria¹⁵⁰⁸, sa from
Nigeria, *fonio millet (acha = *Digitaria
exilis*)

OCHRATOXIN A

incidence: 16/16, conc. range: 33–82 µg/
kg, Ø conc.: 46 µg/kg, sample year: 1998,
country: France/Côte d'Ivoire⁶⁴², sa from
Côte d'Ivoire

incidence: 17/17, conc. range: 17–204 µg/
kg, Ø conc.: 93 µg/kg, sample year: 2001,
country: France/Côte d'Ivoire⁶⁴², sa from
Côte d'Ivoire

incidence: 1/15*, conc.: 70 µg/kg, sample
year: unknown, country: India⁶⁵⁶, *Ragi
(*Eleusine coracana*)

incidence: 23/26, conc. range: ≤0.831 µg/
kg, sample year: 1996–1998, country:
Germany⁶⁹⁰

Claviceps Toxins

CHANOCLAVIN

incidence: 2/16*, conc. range: 0.02–0.2 µg/
kg, Ø conc.: 0.1 µg/kg, sample year: 2011,
country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria,
*fonio millet (acha = *Digitaria exilis*)

FESTUCLAVIN

incidence: 1/16*, conc.: 0.2 µg/kg,
sample year: 2011, country: Nigeria/
Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet
(acha = *Digitaria exilis*)

Fusarium Toxins

AUROFUSARIN

incidence: 15/16*, conc. range:
26–7,280 µg/kg, Ø conc.: 819 µg/kg,
sample year: 2011, country: Nigeria/
Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet
(acha = *Digitaria exilis*)

BEAUVERICIN

incidence: 16/16*, conc. range: 0.3–691 µg/
kg, Ø conc.: 79 µg/kg, sample year: 2011,
country: Nigeria/Austria¹⁵⁰⁸, sa from
Nigeria, *fonio millet (acha = *Digitaria
exilis*)

CHLAMYDOSPOROL

incidence: 14/16*, conc. range: 2–440 µg/
kg, Ø conc.: 55 µg/kg, sample year: 2011,
country: Nigeria/Austria¹⁵⁰⁸, sa from
Nigeria, *fonio millet (acha = *Digitaria
exilis*)

DEOXYNIVALENOL

incidence: 1/4*, conc.: 229 µg/kg, sample
year: 1989, country: Korea⁵⁰⁹, *Indian
millet (1 sa co-contaminated with DON
and NIV)

incidence: 3/22*, conc. range: 7.08–58.0 µg/
kg, Ø conc.: 34.2 µg/kg, sample year:
unknown, country: Nigeria⁷⁶⁸, *moldy stored
and field sa of acha (*Digitaria exilis*) (2 sa
co-contaminated with AFB₁, AFB₂, DON, and
ZEA, 1 sa co-contaminated with AFB₁, DON,
and ZEA)

incidence: 14/16*, conc. range: 3–14 µg/kg,
Ø conc.: 9 µg/kg, sample year: 2011,
country: Nigeria/Austria¹⁵⁰⁸, sa from
Nigeria, *fonio millet (acha = *Digitaria
exilis*)

incidence: 3/7*, conc. range: 18–96 µg/kg,
Ø conc.: 54 µg/kg, sample year: unknown,
country: China/Belgium¹⁵⁴⁴, *ncac

EQUISETIN

incidence: 16/16*, conc. range: 0.6–2,833 µg/kg, Ø conc.: 320 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

FUMONISIN B₁

incidence: 5/5*, conc. range: 300–2,000 µg/kg, Ø conc.: 1,160 µg/kg, sample year: 1995–1997, country: Zimbabwe/Belgium³⁶⁵, sa from Zimbabwe, *rapoko millet
incidence: 6/30, conc. range: ≤6.5 µg/kg, Ø conc.: 5.1 µg/kg, sample year: 2006/2007, country: Japan⁹⁰⁰

incidence: 3/16*, conc. range: 5–43 µg/kg, Ø conc.: 19 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

Rapoko is an annual millet variety grown in Africa and Asia.

FUMONISIN B₂

incidence: 2/16*, conc. range: 2–7 µg/kg, Ø conc.: 4 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

FUSARIC ACID

incidence: 10/16*, conc. range: 6–295 µg/kg, Ø conc.: 75 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

MONILIFORMIN

incidence: 6/16*, conc. range: 0.2–3 µg/kg, Ø conc.: 1.4 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

NIVALENOL

incidence: 1/4*, conc.: 340 µg/kg, sample year: 1989, country: Korea⁵⁰⁹, *Indian millet (1 sa co-contaminated with DON and NIV)

DIACETOXYSCIRPENOL

incidence: 15/16*, conc. range: 0.2–4 µg/kg, Ø conc.: 2 µg/kg, sample year: 2011, country:

Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

ZEARALENONE

incidence: 8/24*, conc. range: 18.0–602 µg/kg, Ø conc.: 257 µg/kg, sample year: unknown, country: Nigeria⁷⁶⁸, *moldy stored and field sa of acha (*Digitaria exilis*) (2 sa co-contaminated with AFB₁, AFB₂, DON, and ZEA, 1 sa co-contaminated with AFB₁, DON, and ZEA, 4 sa contaminated solely with ZEA; only inaccurate information available)

incidence: 15/16*, conc. range: 2–987 µg/kg, Ø conc.: 85 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

ZEARALENONE-4-SULFATE

incidence: 14/16*, conc. range: 0.1–84 µg/kg, Ø conc.: 7 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

Penicillium Toxins

BREFELDIN A

incidence: 12/16*, conc. range: 40–910 µg/kg, Ø conc.: 178 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

CURVULARIN

incidence: 16/16*, conc. range: 0.4–1,732 µg/kg, Ø conc.: 262 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

EMODIN

incidence: 16/16*, conc. range: 1.4–75 µg/kg, Ø conc.: 18 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

GRISEOFULVIN

incidence: 3/16*, conc. range: 1–12 µg/kg, Ø conc.: 5 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

Toxins of other fungi

CYTOCHALASIN-H

incidence: 15/16*, conc. range: 34–465 µg/kg, Ø conc.: 164 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

CYTOCHALASIN-J

incidence: 13/16*, conc. range: 5–47 µg/kg, Ø conc.: 12 µg/kg, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria, *fonio millet (acha = *Digitaria exilis*)

Millet meal see Meal (Millet meal)

Minas cheese see Cheese (Minas cheese)

Mozzarella cheese see Cheese (Mozzarella cheese)

Muesli may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 4*/14, conc. range: 20–120 µg/kg, sample year: unknown, country: Germany⁶⁷, *moldy

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 71/115, conc. range: ≤31.80 µg/kg, sample year: unknown, country: Germany⁵⁹²

incidence: 5/50, conc. range: 1–5 µg/kg (5 sa, maximum: 3.9 µg/kg), sample year: 1990, country: UK⁶³⁶

Fusarium Toxins

BEAUVERICIN

incidence: 1/1*, conc.: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 4/4* **, conc. range: <10 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³,

*included muesli for babies, **organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and MON, 2 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)
incidence: 2/10, conc. range: 2,100–5,300 µg/kg, Ø conc.: 3,700 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco

DEOXYNIVALENOL

incidence: 1/1*, conc.: 15 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 4/4*, conc. range: <10–41 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and MON, 2 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 1/4*, conc.: tr, sample year: 1981, country: UK¹²⁴³, *muesli components

ENNIATIN A

incidence: 1/1*, conc.: <10 µg/kg, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 1/4*, conc.: 1 µg/kg, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁)

incidence: 9*/10, conc. range: ≤29,700 µg/kg, Ø conc.: 20,000 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco

ENNIATIN A₁

incidence: 1/1*, conc.: 4 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 4/4*, conc.: <41 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and MON, 2 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 9?/10, conc. range: ≤688,000 µg/kg, Ø conc.: 140,400 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco

ENNIATIN B

incidence: 1/1*, conc.: 11 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 4/4*, conc.: <3.8–11 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and MON, 2 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 9?/10, conc. range: ≤38,300 µg/kg, Ø conc.: 10,600 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco

ENNIATIN B₁

incidence: 1/1*, conc.: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 4/4*, conc. range: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and MON, 2 sa co-contaminated with BEA, DON, ENA₁, ENB, and ENB₁)

incidence: 9?/10, conc. range: ≤68,600 µg/kg, Ø conc.: 17,200 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco

FUSAPROLIFERIN

incidence: 4/10, conc. range: ≤5.500 µg/kg, Ø conc.: 1,900 µg/kg, sample year: unknown, country: Morocco/Spain¹⁴⁶⁷, sa from Morocco

HT-2 TOXIN

incidence: 1/1*, conc.: 20 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional (1 sa co-contaminated with BEA, DON, ENA, ENA₁, ENB, ENB₁, and HT-2)

incidence: 0/4*, conc. range: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic

MONILIFORMIN

incidence: 0/1*, conc.: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Finland, *conventional

incidence: 1/4*, conc.: <20 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, *organic (1 sa co-contaminated with BEA, DON, ENA₁, ENB, ENB₁, and MON)

ZEARALENONE

incidence: 2/7*, conc. range: 2–5 µg/kg, sample year: 1999–2001, country: Switzerland¹³⁶⁰, *cereal mixture for muesli

ZEARALENONE-4-SULFATE

incidence: 1/4, conc.: 1.6 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷

Muffin may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 1/1*, conc.: 300 µg/kg, sample year: unknown, country: USA³⁵⁶, *unprocessed corn muffins

incidence: 1/1*, conc.: 400 µg/kg, sample year: unknown, country: USA³⁵⁶, *processed corn muffins

incidence: 2/3* **, conc. range: 170–1,210 µg/kg, Ø conc.: 690 µg/kg, sample

year: 1991, country: USA³⁸⁴, *maize-based muffin mix, **included 1 yellow corn muffin mix sa

incidence: 1/2*, conc.: 80 µg/kg, sample year: 1990, country: USA⁴¹⁰, *corn muffin mix (1 sa co-contaminated with FB₁ and FB₂)

FUMONISIN B₂

incidence: 1/2*, conc.: 10 µg/kg, sample year: 1990, country: USA⁴¹⁰, *corn muffin mix (1 sa co-contaminated with FB₁ and FB₂)

FUMONISINS

incidence: 6?/6, conc. range: 450–1,450 µg/kg, sample year: unknown, country: USA³⁵⁷

Mulberries see Berry (mulberries)

Mung beans see Bean

Münster cheese see Cheese (Münster cheese)

Muscle (chicken muscle) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 97/225, conc. range: 0.024–24.34 µg/kg, sample year: 1996/1997, country: Thailand⁹⁴⁴

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/50, conc. range: 12.45–21 µg/kg, Ø conc.: 17 µg/kg, sample year: unknown, country: Egypt⁷²¹

Fusarium Toxins

T-2 TOXIN

incidence: 6/36, conc. range: 0.0704–0.0904 µg/kg, Ø conc.: 0.0804 µg/kg, sample year: unknown, country: China¹⁶⁰⁸

Muscle (pig muscle) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 9/52, conc. range: ≤0.53 µg/kg, Ø conc.: 0.15 µg/kg, sample year: 1998, country: Romania⁵⁸⁶

incidence: 6/6*, conc. range:

1.05–4.20 µg/kg, Ø conc.: 2.1 µg/kg, sample year: 2007–2010, country: Italy¹⁶⁰³, *pork ham muscle

Fusarium Toxins

T-2 TOXIN

incidence: 6/20*, conc. range: 0.0240–0.4515 µg/kg, Ø conc.: 0.0987 µg/kg, sample year: unknown, country: China¹⁶⁰⁸, *pig dorsal muscle

Must may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 19/47*, conc. range: 0.01–0.08 µg/l (17 sa), 0.17 and 0.46 µg/l (2 sa), sample year: 2005, country: Lebanon/France¹⁰⁷¹, sa from Lebanon, *handmade must

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/20*, conc. range: 0.06–0.18 µg/l, Ø conc.: 0.13 µg/l, sample year: 2002, country: Spain²⁶⁹, *10 white (2 sa contaminated) and 10 red must (not contaminated) sa

incidence: 6/40*, conc. range: 0.071–0.813 µg/l, Ø conc.: 0.255 µg/l, sample year: 2001, country: Spain⁹³¹, *white and red handmade must

incidence: 6/6*, conc. range: 0.019–0.050 µg/l, Ø conc.: 0.0315 µg/l, sample year: 2007, country: Croatia¹⁰⁴¹, *red must

incidence: 27/47*, conc. range: 0.011–0.075 µg/l (20 sa), >0.075–0.221 µg/l (7 sa), sample year: 2004, country: Lebanon/France¹⁰⁷⁰, sa from Lebanon, *handmade must

incidence: 17/17*, conc. range: 0.06–6.18 µg/l, Ø conc.: 1.55 µg/l, sample year: 1999/2000, country: Italy¹²¹⁸, *concentrated must

incidence: 1/6*, conc.: 0.03 µg/l, sample year: 1999/2000, country: Italy¹²¹⁸, *concentrated rectified must

incidence: 3/8* **, conc. range: 0.59–0.94 µg/l, Ø conc.: 0.74 µg/l, sample year: 2004, country: Tunisia/Spain¹²¹⁹, sa from Tunisia, *varieties Italia and Carigan, **sa taken 2 weeks after veraison

incidence: 3/8* **, conc. range: 0.59–2.57 µg/l, Ø conc.: 1.08 µg/l, sample year: 2004, country: Tunisia/Spain¹²¹⁹, sa from Tunisia, *varieties Italia and Carigan, **sa taken at maturity

incidence: 20?/22*, conc. range: 0.10–0.50 µg/l (1 sa), 0.50–1.00 µg/l (4 sa), 1.00–2.00 µg/l (1 sa), >2.00–27.29 µg/l (12 sa), sample year: unknown, country: Spain¹²²⁶, *fortified must/early stopped fermentation

incidence: 11/11, conc. range: 0.003–0.250 µg/l, Ø conc.: 0.043 µg/l, sample year: 2007, country: Italy¹³³²

incidence: 8/11*, conc. range: 0.003–0.130 µg/l, Ø conc.: 0.0345 µg/l, sample year: 2007, country: Italy¹³³², *must after malolactic fermentation

incidence: 11/37*, conc. range: 0.01–0.43 µg/l, Ø conc.: 0.061 µg/l, sample year: 2000, country: France¹³⁸⁵, *musts of red wines

Fusarium Toxins

FUMONISIN B₂

incidence: 2/12, conc. range: 10–400 µg/l, Ø conc.: 205 µg/l, sample year: 2007, country: Italy¹²³⁵

Mustard see Spice (mustard)

Mustard oil see Oil (mustard oil)

Nacho chips see Chips (nacho chips)

Nectar (apple nectar) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/63*, conc.: 3–7 µg/kg, sample year: 2004/2005, country: Brazil¹¹⁵⁸, *apple-based nectar

Nectar (cranberry nectar) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/1, conc.: 5.6 µg/l, sample year: unknown, country: Canada¹²²¹ (1 sa co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/1, conc.: 0.7 µg/l, sample year: unknown, country: Canada¹²²¹ (1 sa co-contaminated with AME and AOH)

Nectar (prune nectar) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/1, conc.: 5.5 µg/l, sample year: unknown, country: Canada¹²²¹ (1 sa co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/1, conc.: 1.4 µg/l, sample year: unknown, country: Canada¹²²¹ (1 sa co-contaminated with AME and AOH)

Nixtamalized corn see Maize

Njenga see Maize

Noodle may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/4*, conc.: 0.4 µg/kg, sample year: unknown, country: UK⁷³², *wheat noodles

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/16, conc.:

0.1–0.3 µg/kg, sample year: 2003, country: Taiwan⁶⁰⁷

incidence: 1/4*, conc.: 0.2 µg/kg, sample year: unknown, country: UK⁷³², *wheat noodles

incidence: 59/107*, conc. range: ≤1.48 µg/kg, Ø conc.: 0.31 µg/kg, sample year: 2005–2007, country: Japan⁹⁰⁰, *buckwheat dried noodles

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/30*, conc. range: 170–350 µg/kg, Ø conc.: 260 µg/kg, sample year: 2007, country: Thailand/Japan⁵⁰, sa from Thailand, *instant noodles

incidence: 27/29, conc. range: 15–1,670 µg/kg, Ø conc.: 158 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: ?/4*, conc. range: 11–92 µg/kg, sample year: unknown, country: UK⁷³², *wheat noodles

incidence: 1/3*, conc.: 470 µg/kg, sample year: unknown, country: Turkey⁸⁶³, *home made macaroni

15-ACETYLDEOXYNIVALENOL

incidence: 1/29, conc.: 28 µg/kg, sample year: 1998, country: Germany⁵¹⁷

FUMONISINS (B₁, B₂)

incidence: 1/4*, conc.: 26 µg/kg, sample year: unknown, country: UK⁷³², *wheat nodles

HT-2 TOXIN

incidence: 8/29, conc. range: 12–25 µg/kg, Ø conc.: 13 µg/kg, sample year: 1998, country: Germany⁵¹⁷

NIVALENOL

incidence: 1/29, conc.: 52 µg/kg, sample year: 1998, country: Germany⁵¹⁷

incidence: ?/4*, conc. range: 14–26 µg/kg, sample year: unknown, country: UK⁷³², *wheat noodles

Nutmeg see Spice (nutmeg)

Nut may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/10*, conc. range: 10–93 µg/kg, Ø conc.: 51.5 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported, *mixed nuts (1 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 8/167*, conc. range: ≤2.3 µg/kg, sample year: unknown, country: USSR¹⁹¹, sa imported, *almonds and cashews

incidence: 1/1*, conc.: 6.68 µg/kg, sample year: 2004, country: Korea¹⁰²⁰, *assorted nuts (seasoned)

incidence: 2/10*, conc. range: 0.48–0.65 µg/kg, Ø conc.: 0.57 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of nuts (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFG₂)

incidence: 1/12*, conc.: 6.68 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴, *assorted nuts

incidence: 2/7*, conc. range: 0.66–1.09 µg/kg, Ø conc.: 0.87 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰, *(almond, cashew, hazelnut, and pistachio)

incidence: 15/76, conc. range: 0.02–7.8* µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴, *peanuts for direct consumption

incidence: 15/68, conc. range: 0.04–0.78 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

AFLATOXIN B₂

incidence: 1/10*, conc.: 29 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported, *mixed nuts (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/16*, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported, *mixed nuts (1 sa co-contaminated with AFB₂, AFG₁, and AFG₂)

incidence: 1/1*, conc.: 1.21 µg/kg, sample year: 2004, country: Korea¹⁰²⁰, *assorted nuts (seasoned)

incidence: 1/10*, conc.: 0.11 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of nuts (1 sa co-contaminated with AFB₂ and AFG₂)

incidence: 9/76, conc. range: 0.02–2.04 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

incidence: 18/68, conc. range: 0.02–0.2 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

AFLATOXIN G₁

incidence: 1/10*, conc.: 5 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported, *mixed nuts (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/16*, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported, *mixed nuts (1 sa co-contaminated with AFB₂, AFG₁, and AFG₂)

incidence: 1/10*, conc.: 0.84 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of nuts (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

incidence: 12/76, conc. range: 0.02–0.29 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

incidence: 25/68, conc. range: 0.03–1.16 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

AFLATOXIN G₂

incidence: 1/16*, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported, *mixed nuts (1 sa co-contaminated with AFB₂, AFG₁, and AFG₂)

incidence: 3/10*, conc. range: 0.34–1.12 µg/kg, Ø conc.: 0.84 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of nuts (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFG₂, 1 sa co-contaminated with AFB₂ and AFG₂)

incidence: 4/76, conc. range: 0.02–0.22 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

incidence: 18/68, conc. range: 0.02–0.71 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

AFLATOXINS (B₁, B₂)

incidence: 1/82*, conc.: 352.0 µg/kg, sample year: 2002–2011, country: Brazil¹⁵⁹⁰, *almonds, cashew nuts, hazel nuts, nuts and pistachios, all shelled

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 35/35*, conc. range: 2 µg/kg (23 sa), 2–5 µg/kg (6 sa), 6–15 µg/kg (1 sa), 16–50 µg/kg (1 sa), 51–200 µg/kg (3 sa), 276 µg/kg (1 sa), sample year: 1988/1989, country: Australia¹³, *included nuts and nut products

AFLATOXINS (TOTAL)

incidence: 1/5*, conc.: 3.91 µg/kg, sample year: unknown, country: Poland¹¹⁰, sa imported?, *nuts, “chio-felix”

AFLATOXINS

incidence: 1/5*, conc.: 6 µg/kg, sample year: 1997, country: Qatar¹, most sa from Iran, Syria, Turkey, and USA, *mixed nuts

incidence: 1/3*, conc.: 7 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported, *mixed nuts

incidence: 3/29, conc. range: 6–10 µg/kg (2 sa), >50 µg/kg (1 sa), sample year: 1995–1999, country: Malaysia³⁹¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 26/125*, conc. range: ≤0.270 µg/kg, sample year: unknown, country: Germany⁵⁹², *different nuts
incidence: 7/15, conc. range: 2.75–7.42 µg/kg, Ø conc.: 5.64 µg/kg, sample year: 2008/2009, country: Jordan⁹⁰⁸

Nut (almonds) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 15/19*, conc. range: 0.5–5 µg/kg (14 sa), 6 µg/kg (1 sa), sample year: 1984, country: UK⁶⁰, *ground almonds

incidence: 19*/23**, conc. range: 39–4,000 µg/kg, sample year: unknown, country: Germany⁶⁷, *moldy, **sweet almonds

incidence: 1/110, conc.: 93 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/6*, conc.: 67 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported, *bitter almonds (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/184*, conc.: tr, sample year: 1974, country: Finland¹³⁸, sa imported, *sliced and crushed almonds

incidence: 1/3, conc.: 5,566.6 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴

incidence: 26/29*, conc. range: 0.05–0.1 µg/kg (5 sa), 0.11–1 µg/kg (8 sa), 1.1–5 µg/kg (8 sa), 5.1–10 µg/kg (2 sa), 11–40 µg/kg (3 sa), Ø conc.: 3.4 µg/kg, sample year: 1989/1990, country: France³⁹⁷, *ground and powdered almonds

incidence: 2/6, conc. range: 0.05–0.1 µg/kg (1 sa), 0.11–1 µg/kg (1 sa), Ø conc.: 0.15 µg/kg, sample year: 1989/1990, country: France³⁹⁷

incidence: 1/34, conc.: 95 µg/kg, sample year: 1986/1987, country: Spain⁴⁸⁸ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/6*, conc. range: 25–71 µg/kg, Ø conc.: 48 µg/kg, sample year: 1983–1985, country: India⁸⁰², *cuddapah almond

incidence: 3/8, conc. range: 18–194 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 5/25, conc. range: 5.8–140.0 µg/kg, Ø conc.: 37.54 µg/kg, sample year: unknown, country: Pakistan⁹⁴³ (2 sa co-contaminated with AFB₁ and AFB₂, 3 sa contaminated solely with AFB₁)

incidence: 1/14, conc.: 0.39 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 3/15, conc. range: 0.08–0.55 µg/kg, Ø conc.: 0.23 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴

incidence: 1/1*, conc.: 34 µg/kg, sample year: unknown, country: USA¹³⁴², *ground almonds (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1*/21**, conc.: 4.97 µg/kg***, sample year: 2007/2008, country: Portugal¹⁵²⁹, *storage sa, **field and storage sa, ***mainly AFB₁

incidence: 11/28*, conc. range: 0.005–2 µg/kg (11 sa, maximum: 0.8 µg/kg), sample year: 1996–1998, country: Sweden¹⁵⁶⁵, *almond/nut paste and almonds

incidence: 3/13, conc. range: 1–13 µg/kg, Ø conc.: 7.4 µg/kg, sample year: 2001/2002, country: Turkey¹⁵⁷⁵

AFLATOXIN B₂

incidence: 1/110, conc.: 14 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/6*, conc.: 5 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported, *bitter almonds (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/34, conc.: 15 µg/kg, sample year: 1986/1987, country: Spain⁴⁸⁸ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/6*, conc.: 17 µg/kg, sample year: 1983–1985, country: India⁸⁰², *cuddapah almond

incidence: 2/8, conc. range: 20–125 µg/kg, sample year: 1983–1985, Ø conc.: 72.5 µg/kg, country: India⁸⁰²

incidence: 2/25, conc. range: 7.0–140.0 µg/kg, Ø conc.: 73.5 µg/kg, sample year: unknown, country: Pakistan⁹⁴³ (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/14, conc.: 0.06 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 1/1*, conc.: 5 µg/kg, sample year: unknown, country: USA¹³⁴², *ground almonds (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1*/21**, conc.: 0.17 µg/kg, sample year: 2007/2008, country: Portugal¹⁵²⁹, *storage sa, **field and storage sa

AFLATOXIN G₁

incidence: 1/6*, conc.: 25 µg/kg, sample year: 1983–1985, country: India⁸⁰², *cuddapah almond

incidence: 2/8, conc. range: 19–30 µg/kg, sample year: 1983–1985, Ø conc.: 24.5 µg/kg, country: India⁸⁰²

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/78, conc. range: 5.0–9.9 µg/kg (1 sa), >25.0 µg/kg (1 sa), sample year: 1970–1975, country: Canada⁵⁹

incidence: 1/4, conc.: 0.8 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 3/10*, conc. range: 1.2–3.4 µg/kg, Ø conc.: 2.13 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *almonds without shell

AFLATOXINS (TOTAL)

incidence: 15/19*, conc. range: 0.5–5 µg/kg (13 sa), 6–10 µg/kg (2 sa, maximum: 10 µg/

kg), sample year: 1984, country: UK⁶⁰, *ground almonds

incidence: 1/2, conc.: 2.23, sample year: unknown, country: Poland¹¹⁰, sa imported

incidence: 1/1, conc.: 0.88, sample year: unknown, country: Poland¹¹⁰, sa from California

AFLATOXINS

incidence: 1/26, conc.: 6 µg/kg, sample year: 1986, country: USA¹⁹⁷

incidence: 1/5, conc.: 10 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported

STERIGMATOCYSTIN

incidence: 2/8, conc. range: 96–130 µg/kg, Ø conc.: 113 µg/kg, sample year: 1983–1985, country: India⁸⁰²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 12/44, conc. range: 11–266 µg/kg, Ø conc.: 61 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹

incidence: 1/1, conc.: 3.75 µg/kg, sample year: unknown, country: Japan¹⁵⁹⁴ (1 sa co-contaminated with OTA and OTB)

OCHRATOXIN B

incidence: 1/1, conc.: 8.83 µg/kg, sample year: unknown, country: Japan¹⁵⁹⁴ (1 sa co-contaminated with OTA and OTB)

Fusarium Toxins

ZEARALENONE

incidence: 1/6*, conc.: pr, sample year: 1983–1985, country: India⁸⁰², *cuddapah almond

incidence: 1/8, conc.: pr, sample year: 1983–1985, country: India⁸⁰²

Penicillium Toxins

RUBRATOXIN

incidence: 1/6*, conc.: 310 µg/kg, sample year: 1983–1985, country: India⁸⁰², *cuddapah almond

Nut (Brazil nuts, paranuts) may

contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 5/23*, conc. range:

0.5–5 µg/kg (4 sa), 33 µg/kg (1 sa),
sample year: 1984, country: UK⁶⁰, *in-shell
Brazil nuts

incidence: 10?/51, conc. range: 8.3–20 µg/
kg, Ø conc.: 14.1 µg/kg, sample year:
1992–1996, country: Cyprus⁷⁴, sa domestic
and imported

incidence: 1/4, conc.: 10.2 µg/kg, sample
year: 1986–1990, country: Japan⁹⁹

incidence: 16/27, conc. range: 3–4,200 µg/
kg, Ø conc.: 457.2 µg/kg, sample year:
1973, country: Norway¹⁹⁸, sa imported
(16 sa co-contaminated with AFB₁, AFB₂,
AFG₁, and AFG₂)

incidence: 1/2*, conc.: 26 µg/kg, sample
year: 1991/1995, country: Brazil⁷²³,
*ground Brazil nuts

incidence: 4/12, conc. range: LOQ–0.8 µg/
kg (4 sa), sample year: 2000/2001,
country: UK⁸³⁴

incidence: 22/200, conc. range: 1.7–
1,058.0 µg/kg, sample year: 2009, country:
Brazil¹⁵⁰⁰

AFLATOXIN B₂

incidence: 10?/51, conc. range: 1.1 µg/kg,
Ø conc.: 1.1 µg/kg, sample year:
1992–1996, country: Cyprus⁷⁴, sa domestic
and imported

incidence: 1/4, conc.: 0.8 µg/kg, sample
year: 1986–1990, country: Japan⁹⁹

incidence: 16/27, conc. range: tr–1,600 µg/
kg, sample year: 1973, country: Norway¹⁹⁸,
sa imported (16 sa co-contaminated with
AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 7/200, conc. range: 0.5–
130.4 µg/kg, sample year: 2009, country:
Brazil¹⁵⁰⁰

AFLATOXIN G₁

incidence: 10?/51, conc. range: 2.3–9.4 µg/
kg, Ø conc.: 5.8 µg/kg, sample year:
1992–1996, country: Cyprus⁷⁴, sa domestic
and imported

incidence: 1/4, conc.: 3.2 µg/kg, sample
year: 1986–1990, country: Japan⁹⁹

incidence: 16/27, conc. range: 2–3,250 µg/
kg, Ø conc.: 478.2 µg/kg, sample year:
1973, country: Norway¹⁹⁸, sa imported (16
sa co-contaminated with AFB₁, AFB₂,
AFG₁, and AFG₂)

incidence: 11/200, conc. range: 2.9–
243.0 µg/kg, sample year: 2009, country:
Brazil¹⁵⁰⁰

AFLATOXIN G₂

incidence: 1/4, conc.: 0.3 µg/kg, sample
year: 1986–1990, country: Japan⁹⁹

incidence: 16/27, conc. range: tr–600 µg/kg,
sample year: 1973, country: Norway¹⁹⁸, sa
imported (16 sa co-contaminated with AFB₁,
AFB₂, AFG₁, and AFG₂)

incidence: 4/200, conc. range: 0.8–
223.6 µg/kg, sample year: 2009, country:
Brazil¹⁵⁰⁰

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 31/69*, conc. range: 6–10 µg/kg
(1 sa), 11–20 µg/kg (3 sa), 21–50 µg/kg (1
sa), 51–100 µg/kg (3 sa), 101–1,000 µg/kg (7
sa), 1,001–10,000 µg/kg (11 sa), >10,000 µg/
kg (5 sa), sample year: 1973, country:
Sweden¹⁶¹, sa imported, *edible, possibly
edible and inedible Brazil nuts

incidence: 3/3*, conc. range: 10.1–20 µg/
kg (2 sa), 150 µg/kg (1 sa), sample year:
unknown, country: UK⁷³⁹, *port sa

incidence: 4/60*, conc. range: 10–68 µg/kg,
Ø conc.: 46 µg/kg, sample year: 2003–
2006, country: Brazil¹⁵¹⁹, *factory stage:
receiving

incidence: 5/30*, conc. range: 8–686 µg/kg,
Ø conc.: 271.7 µg/kg, sample year: 2003–
2006, country: Brazil¹⁵¹⁹, *retail sa

incidence: 7/17, conc. range: 0.01–4 µg/kg (3 sa), >4 µg/kg (4 sa, maximum): 2,500 µg/kg, sample year: 1996–1998, country: Sweden¹⁵⁶⁵

incidence: 4/67*, conc. range: 16.5–1,972 µg/kg, Ø conc.: 553.6 µg/kg, sample year: 2002–2011, country: Brazil¹⁵⁹⁰, *Brazil nuts, shelled

AFLATOXINS (TOTAL)

incidence: 5/23*, conc. range: 0.5–5 µg/kg (3 sa), 6–10 µg/kg (1 sa), 60 µg/kg (1 sa), sample year: 1984, country: UK⁶⁰, *in-shell Brazil nuts

incidence: 55/80*, conc. range: 1.2–11.5 µg/kg, sample year: 2006, country: Brazil¹³¹², *raw, medium-size, in-shell Brazil nuts

AFLATOXINS

incidence: 6/12*, conc. range: ≤42 µg/kg, Ø conc.: 20 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported, *shelled Brazil nuts

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 11/200, conc. range: 98.65–161.2 µg/kg, sample year: 2009, country: Brazil¹⁵⁰⁰

Nut (cashew nuts) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1*/6, conc.: 830 µg/kg, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 1/3, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/8*, conc.: 10 µg/kg, sample year: 1991/1995, country: Brazil⁷²³, *ground chashew nuts (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 3/7, conc. range: 20–190 µg/kg, sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN B₂

incidence: 1/3, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 2/7, conc. range: 15–161 µg/kg, sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN G₁

incidence: 1/3, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/8*, conc.: 15 µg/kg, sample year: 1991/1995, country: Brazil⁷²³, *ground chashew nuts (1 sa co-contamination with AFB₁ and AFG₁)

incidence: 2/7, conc. range: 18–72 µg/kg, Ø conc.: 45 µg/kg, sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN G₂

incidence: 1/3, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/7, conc.: 20 µg/kg, sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN

incidence: 6/20*, Ø conc.: 1.6 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *cashew and cashew products, **of pos sa?

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 23/120, conc. range: 5.0–9.9 µg/kg (10 sa), 10.0–14.9 µg/kg (3 sa), 15.0–19.9 µg/kg (4 sa), 20.0–24.9 µg/kg (2 sa), >25.0 µg/kg (4 sa), sample year: 1970–1975, country: Canada⁵⁹

incidence: 1/3, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported

AFLATOXINS (TOTAL)

incidence: 1/3, conc.: 2.95, sample year:
unknown, country: Poland¹¹⁰, sa imported

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/7, conc.: 40 µg/kg, sample
year: 1983–1985, country: India⁸⁰²

OCHRATOXIN A

incidence: 2/7, conc. range: pr, sample
year: 1983–1985, country: India⁸⁰²

incidence: 1/1*, conc.: 0.65 µg/kg, sample
year: unknown, country: Japan¹⁵⁹⁴,

*cashew nuts (raw) (1 sa co-contaminated
with OTA and OTB)

OCHRATOXIN B

incidence: 1/1*, conc.: 7.82 µg/kg, sample
year: unknown, country: Japan¹⁵⁹⁴,

*cashew nuts (raw) (1 sa co-contaminated
with OTA and OTB)

incidence: 1/1*, conc.: 0.91 µg/kg, sample
year: unknown, country: Japan¹⁵⁹⁴,

*cashew (roasted)

Nut (coconuts) may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 5/25, conc. range:

15–25 µg/kg, sample year: 1992, country:
Egypt⁴⁹¹

incidence: 5/9, conc. range: 28–260 µg/kg,
sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN B₂

incidence: 5/9, conc. range: 15–109 µg/kg,
sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN G₁

incidence: 5/9, conc. range: 12–75 µg/kg,
sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN G₂

incidence: 2/9, conc. range: 20–68 µg/kg,
∅ conc.: 44 µg/kg, sample year: 1983–1985,
country: India⁸⁰²

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 4/9, conc. range: 5–60 µg/kg,
sample year: 1983–1985, country: India⁸⁰²

OCHRATOXIN A

incidence: 3/25, conc. range: 50–205 µg/kg,
sample year: 1992, country: Egypt⁴⁹¹

Nut (grogannuts) may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/9, conc. range: 20–150 µg/kg,
sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN B₂

incidence: 2/9, conc. range: 15–75 µg/kg,
∅ conc.: 45 µg/kg, sample year: 1983–1985,
country: India⁸⁰²

AFLATOXIN G₁

incidence: 2/9, conc. range: 16–76 µg/kg,
∅ conc.: 46 µg/kg, sample year: 1983–1985,
country: India⁸⁰²

AFLATOXIN G₂

incidence: 1/9, conc.: 10 µg/kg, sample
year: 1983–1985, country: India⁸⁰²

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/9, conc. range: 4–20 µg/kg,
∅ conc.: 12 µg/kg, sample year: 1983–1985,
country: India⁸⁰²

Nut (hazelnuts) may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/3*, conc.: 0.6 µg/kg, sample
year: 1984, country: UK⁶⁰, *shelled
hazelnuts

incidence: 2/18*, conc. range: ≤0.7 µg/kg,
sample year: 1984, country: UK⁶⁰,
*in-shelled hazelnuts

incidence: 18/29*, conc. range: 5–50,000 µg/kg, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 1/199, conc.: 325 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/5, conc.: 0.42 µg/kg, sample year: 2002, country: Spain²⁶¹, sa partly imported (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 43/51*, conc. range: <1 µg/kg (41 sa), 1–5 µg/kg (1 sa), 5–10 µg/kg (1 sa), sample year: 2002/2003, country: Turkey⁹²¹, *dehulled hazelnuts

incidence: 1/1*, conc.: 0.53 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *ground hazelnuts (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 4/72, conc. range: 1.17–1.80 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 9/28, conc. range: 1–113 µg/kg, Ø conc.: 34.4 µg/kg, sample year: 2001/2002, country: Turkey¹⁵⁷⁵

incidence: 1*/32**, conc.: 0.20 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Switzerland and *Turkey, **hazelnuts without shell (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/9*, conc.: 1.16 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey, *roasted hazelnuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN B₂

incidence: 1/199, conc.: 29 µg/kg, sample year: 1974, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/9*, conc.: 0.16 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey, *roasted hazelnuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₁

incidence: 1/5, conc.: 0.52 µg/kg, sample year: 2002, country: Spain²⁶¹, sa partly imported (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/1*, conc.: 1.79 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *ground hazelnuts (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 6/72, conc. range: 0.6–4.75 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 1*/32**, conc.: 0.31 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Switzerland and *Turkey, **hazelnuts without shell (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/9*, conc.: 1.82 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey, *roasted hazelnuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 2/72, conc. range: 0.91 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 1/9*, conc.: 0.31 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey, *roasted hazelnuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 3/35*, conc. range: 6–10 µg/kg, sample year: 1973, country: Sweden¹⁶¹, sa imported, *edible, possibly edible and inedible hazelnuts

incidence: 18/20, conc. range: 25–175 µg/kg, sample year: 1991, country: Egypt⁴⁹⁰

AFLATOXINS (TOTAL)

incidence: 1/3*, conc.: 0.6 µg/kg, sample year: 1984, country: UK⁶⁰, *shelled hazelnuts

incidence: 2/18*, conc. range: ≤0.7 µg/kg, sample year: 1984, country: UK⁶⁰, in-shelled hazelnuts

incidence: 1/1, conc.: 3.25 µg/kg, sample year: unknown, country: Poland¹¹⁰, sa imported?

incidence: 47/51*, conc. range: <1 µg/kg (26 sa), 1–5 µg/kg (17 sa), 5–10 µg/kg (3 sa), >10 µg/kg (1 sa), sample year: 2002/2003, country: Turkey²²¹, *dehulled hazelnuts

incidence: 2/80*, conc. range: 5.46–6.55 µg/kg, sample year: 2007, country: Turkey¹⁵⁵¹, *destined for export (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 19/32, conc. range: ≤0.080 µg/kg, sample year: unknown, country: Germany⁵⁹²

Fusarium Toxins

HT-2 TOXIN

incidence: 1/5, conc.: 5 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

T-2 TOXIN

incidence: 1/5, conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

ZEARALENONE

incidence: 1/5, conc.: 6 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

Nut (peanuts) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 26/86, conc. range: 10–2,000 µg/kg, Ø conc.: 420.4 µg/kg, sample year: unknown, country: Brazil⁸ (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 16 sa co-contaminated with AFB₁ and AFB₂, 2 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 4 sa contaminated solely with AFB₁)

incidence: 926/2,062, conc. range: >5–833 µg/kg, sample year: unknown, country: India¹⁷

incidence: 42/65, conc. range: 6–46 µg/kg, sample year: unknown, country: Tunisia/USA²⁰, sa from Tunisia

incidence: 48/171, conc. range: 6–10 µg/kg (2 sa), 11–25 µg/kg (9 sa), 26–50 µg/kg (7 sa), 51–100 µg/kg (11 sa), 101–200 µg/kg (11 sa), 201–300 µg/kg (3 sa), 301–400 µg/kg (4 sa), >400 µg/kg (1 sa), sample year: 1982–1984, country: UK²⁴, sa from different countries

incidence: 3/40, conc. range: 98–1,056 µg/kg, Ø conc.: 696 µg/kg, sample year: unknown, country: Egypt⁴³

incidence: 37/190*, conc. range: 6.5 to <26 µg/kg, sample year: unknown, country: Egypt⁴⁴, *in-shell peanuts

incidence: 76/155*, conc. range: 6.5 to <52 µg/kg, sample year: unknown, country: Egypt⁴⁴, *shelled peanuts

incidence: 2/58*, conc. range: 52 to <104 µg/kg, sample year: unknown, country: Egypt⁴⁴, *roasted peanuts

incidence: 208/515, conc. range: 1–10 µg/kg (28 sa), >10–20 µg/kg (85 sa), >20–50 µg/kg (10 sa), >50–100 µg/kg (6 sa), >100–500 µg/kg (23 sa), >500–2,000 µg/kg (31 sa), >2,000 µg/kg (25 sa), sample year: during the 1990s, country: Cuba⁴⁷

incidence: 5/8*, conc. range: 0.5–5 µg/kg (2 sa), 88 µg/kg (1 sa), sample year: 1984, country: UK⁶⁰, *raw shelled peanuts

incidence: 12/12*, conc. range: 0.5–5 µg/kg (9 sa), 11–30 µg/kg (2 sa), 2,520 µg/kg (1 sa), sample year: 1984, country: UK⁶⁰, *raw in-shell peanuts

incidence: 3/17*, conc. range: 0.5–5 µg/kg (2 sa), 6 µg/kg (1 sa), sample year: 1984, country: UK⁶⁰, *roasted peanuts

incidence: 3/14*, conc. range: 0.5 to ≤5 µg/kg, sample year: 1984, country: UK⁶⁰, *dry roasted peanuts

incidence: 5/13*, conc. range: 0.5–5 µg/kg (4 sa), 9 µg/kg (1 sa), sample year: 1984, country: UK⁶⁰, *roasted in-shell peanuts

incidence: 3/17*, conc. range: 0.5 to ≤ 3 $\mu\text{g}/\text{kg}$, sample year: 1984, country: UK⁶⁰, *chocolate-coated peanuts

incidence: 8/19*, conc. range: 0.5–5 $\mu\text{g}/\text{kg}$ (5 sa), 6–10 $\mu\text{g}/\text{kg}$ (1 sa), 11–30 $\mu\text{g}/\text{kg}$ (1 sa), 142 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1984, country: UK⁶⁰, *peanut brittle

incidence: 2/3*, conc. range: 3.6–5.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.5 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 46/62*, conc. range: 20–28,000 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 10/553, conc. range: 5–20 $\mu\text{g}/\text{kg}$, sample year: 1970, country: Germany⁶⁷, sa from South Africa

incidence: 1/259, conc.: 20 $\mu\text{g}/\text{kg}$, sample year: 1971, country: Germany⁶⁷, sa from South Africa

incidence: 2/56, conc. range: 10–125 $\mu\text{g}/\text{kg}$, \emptyset conc.: 67.5 $\mu\text{g}/\text{kg}$, sample year: 1970, country: Germany⁶⁷, sa from USA

incidence: 3/38, conc. range: 5–625 $\mu\text{g}/\text{kg}$, \emptyset conc.: 213.3 $\mu\text{g}/\text{kg}$, sample year: 1971, country: Germany⁶⁷, sa from USA

incidence: 1/20, conc.: 40 $\mu\text{g}/\text{kg}$, sample year: 1970, country: Germany⁶⁷, sa from Sudan

incidence: 2/14, conc. range: 5–20 $\mu\text{g}/\text{kg}$, \emptyset conc.: 12.5 $\mu\text{g}/\text{kg}$, sample year: 1971, country: Germany⁶⁷, sa from Sudan

incidence: 1/1, conc.: 625 $\mu\text{g}/\text{kg}$, sample year: 1970, country: Germany⁶⁷, sa from Angola

incidence: 1/2*, conc.: 2.7 $\mu\text{g}/\text{kg}$, sample year: 1989, country: Italy⁶⁸, sa from Syria, *shelled, raw peanuts

incidence: 2/3*, conc. range: 0.4–1.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.2 $\mu\text{g}/\text{kg}$, sample year: 1989, country: Italy⁶⁸, sa from Syria, *shelled, roasted peanuts (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/2*, conc. range: 46–498 $\mu\text{g}/\text{kg}$, \emptyset conc.: 272 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 179?/1,860, conc. range: <0.4–700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 25.6 $\mu\text{g}/\text{kg}$, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 11?/149, conc. range: 0.4–21.7 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.1 $\mu\text{g}/\text{kg}$, sample year: 1986–1990, country: Japan⁹⁹

incidence: 61/267, conc. range: 5–15,743 $\mu\text{g}/\text{kg}$, \emptyset conc.: 898 $\mu\text{g}/\text{kg}$, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 5/33*, conc. range: 20–330 $\mu\text{g}/\text{kg}$, \emptyset conc.: 114 $\mu\text{g}/\text{kg}$, sample year: 1977/1978, country: Taiwan¹¹⁴, *fried peanuts

incidence: 3/19*, conc. range: 20–2,784 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,075 $\mu\text{g}/\text{kg}$, sample year: 1977/1978, country: Taiwan¹¹⁴, *roasted peanuts

incidence: 9/104, conc. range: tr–954 $\mu\text{g}/\text{kg}$, sample year: 1975/1976, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 5 sa co-contaminated with AFB₁ and AFB₂, 2 sa contaminated solely with AFB₁)

incidence: 8/121*, conc. range: 3–716 $\mu\text{g}/\text{kg}$, \emptyset conc.: 160 $\mu\text{g}/\text{kg}$, sample year: 1974–1976, country: Finland¹³⁸, sa imported, *roasted peanuts (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 6 sa co-contaminated with AFB₁ and AFB₂)

incidence: 20/68*, conc. range: tr–716 $\mu\text{g}/\text{kg}$, sample year: 1974–1976, country: Finland¹³⁸, sa imported, *sliced and crushed peanuts (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 13 sa co-contaminated with AFB₁ and AFB₂, 2 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFB₁)

incidence: 5/45, conc. range: 90.9–5,871.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,877.5 $\mu\text{g}/\text{kg}$, sample year: 1978/1979, country: Egypt¹⁴⁴ (2 sa

co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/65*, conc.: 120 µg/kg, sample year: unknown, country: Spain¹⁵⁷,

*in-shell peanuts

incidence: 10/20, conc. range: 1–50 µg/kg (3 sa), 51–150 µg/kg (3 sa), 151–300 µg/kg (2 sa), 301–700 µg/kg (2 sa), sample year: 1970–1980, country: India¹⁷⁴

incidence: 5/15*, conc. range: 1–50 µg/kg (3 sa), 51–150 µg/kg (2 sa, maximum: 85 µg/kg), sample year: 1970–1980, country: India¹⁷⁴, *roasted peanuts

incidence: ?/8, conc. range: 534–880 µg/kg, sample year: 1977, country: Nigeria¹⁷⁷

incidence: 39?/40, conc. range: 1.3–1,600 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 3/8, conc. range: 40–430 µg/kg, Ø conc.: 263.3 µg/kg, sample year: unknown, country: Taiwan¹⁹⁰

incidence: 788/1,559, conc. range: ≤3,650 µg/kg, year: unknown, country: USSR¹⁹¹, sa imported

incidence: 6/39, conc. range: tr–34 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/1*, conc.: 400 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported, *sorted peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1*/1**, conc.: 62.2 µg/kg, sample year: unknown, country: USA²⁰¹, *sa from the WHO, **ncac

incidence: 32*/200, conc. range: 54–1,806 µg/kg, sample year: 1995–2003, country: Nepal²³⁹, *>30 µg/kg

incidence: 32/72*, conc. range: 1–679 µg/kg, Ø conc.: 93.7 µg/kg, sample year: 1993/1994, country: Brazil²⁵⁸, *crude peanuts (19 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁,

AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂, 2 sa contaminated solely with AFB₁)

incidence: 78/120, conc. range: 1.3–223 µg/kg, Ø conc.: 27 µg/kg, sample year: 2001/2002, country: Botswana²⁷⁰

incidence: 3/11*, conc. range: 0.13–0.25 µg/kg, Ø conc.: 0.18 µg/kg, sample year: unknown, country: Spain³⁰², sa from Brazil, China, USA, and unknown origin,

*different kinds of peanuts (2 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFB₁)

incidence: 2/50*, conc. range: 435–625 µg/kg, Ø conc.: 530 µg/kg, sample year: unknown, country: Argentina³³⁵, *ncac (2 sa co-contaminated with AFB₁, AFG₁, and CPA)

incidence: 3/23, conc. range: 0.11–1 µg/kg (2 sa), 5.1–10 µg/kg (1 sa), Ø conc.: 3 µg/kg, sample year: 1989/1990, country: France³⁹⁷

incidence: 1/34, conc.: <10 µg/kg, sample year: 1986/1987, country: Spain⁴⁸⁸

incidence: 10/10, conc. range: 1.5–10 µg/kg, Ø conc.: 4.8 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (3 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA, 4 sa co-contaminated with AFB₁, FB₁, and ZEA, 3 sa co-contaminated with AFB₁, OTA, and ZEA)

incidence: 66/503, conc. range: <100 µg/kg (9 sa), 100–1,000 µg/kg (37 sa), >1,000 µg/kg (20 sa), sample year: 1972–1974, country: Argentina⁶⁷⁹

incidence: 2/?, conc. range: tr–50 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 3/6, conc. range: 20–200 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 15?/29, conc. range: 0.8–16.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

incidence: 50/50*, conc. range: 2–17,203 µg/kg, Ø conc.: 1,377 µg/kg,

- sample year: 1990, country: USA⁸²⁶
 *peanuts for oil production or feed (14 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 12 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 19 sa co-contaminated with AFB₁, AFB₂, and CPA, 2 sa co-contaminated with AFB₁ and AFB₂)
 incidence: 8/19, conc. range: LOQ–2 µg/kg (5 sa), >2–5 µg/kg (1 sa), >5–60.9 µg/kg (2 sa), sample year: 2000/2001, country: UK⁸³⁴
 incidence: 1/26*, conc.: 0.1 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶, *shelled, roasted peanuts
 incidence: 1/20, conc.: 0.17 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco
 incidence: 9/65, conc. range: 0.15–22.39 µg/kg, sample year: unknown, country: China⁹⁷²
 incidence: 6/20, conc. range: 0.04–0.31 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹
 incidence: 1/4*, conc.: 0.20 µg/kg, sample year: 2004, country: Korea¹⁰²⁰, *raw peanuts
 incidence: 4/8*, conc. range: 1.85–18.04 µg/kg, sample year: 2004, country: Korea¹⁰²⁰, *roasted peanuts
 incidence: 1/1, conc.: 59.666 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan
 incidence: 1/1*, conc.: 3.517 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan, *limed peanuts
 incidence: 68/106*, conc. range: 5–165 µg/kg, Ø conc.: 25.5 µg/kg, sample year: unknown, country: Nigeria¹¹⁴⁰, *dry-roasted groundnuts
 incidence: 13/30*, conc. range: 40–780 µg/kg, Ø conc.: 180.8 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *food and sweets derived from peanut (5 sa co-contaminated with AFB₁ and AFG₁, 7 sa contaminated solely with AFB₁)
 incidence: 19/28, conc. range: 4 to <20 µg/kg (6 sa), ≥20 µg/kg (13 sa, maximum: 576 µg/kg), sample year: 1994–1995, country: Japan/Thailand¹²³³, sa from Thailand
 incidence: 18/31, conc. range: 300–11,300 µg/kg, Ø conc.: 5,016.7 µg/kg, sample year: unknown, country: Uganda/UK¹²³⁹, sa from Uganda
 incidence: 8/27, conc. range: 0.11–18.04 µg/kg, Ø conc.: 4.07 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴
 incidence: 1/1, conc.: 1,700 µg/kg, sample year: unknown, country: Japan/Nepal¹³⁰⁶
 incidence: 3/24*, conc. range: 2–270 µg/kg, sample year: unknown, country: UK/France¹³²⁰, sa from India, *peanuts and peanut meals
 incidence: 3/3*, conc. range: 33–69 µg/kg, Ø conc.: 45.7 µg/kg, sample year: unknown, country: USA¹³⁴², *salted-in-shell peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁ and AFB₂)
 incidence: 1/1*, conc.: 95 µg/kg, sample year: unknown, country: USA¹³⁴², *peanuts with cereal coating (1 sa co-contaminated with AFB₁ and AFB₂)
 incidence: 43/62, conc. range: 0.5–820.0 µg/kg, Ø conc.: 39.6 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China
 incidence: 8/400, conc. range: 3–8 µg/kg, Ø conc.: 5.7 µg/kg, sample year: unknown, country: Sudan/Saudi Arabia¹³⁶⁴, sa from Sudan
 incidence: 17/52* **, conc. range: 54–116 µg/kg, sample year: 1995/1996, country: India¹⁴²⁸, *unroasted groundnut kernels, **sa from distributors
 incidence: 29/50* **, conc. range: 220–488 µg/kg, sample year: 1995/1996, country: India¹⁴²⁸, *unroasted groundnut kernels, **sa from retailers

incidence: 8/49* **, conc. range: 24–76 µg/kg, sample year: 1995/1996, country: India¹⁴²⁸, *roasted groundnut kernels, **sa from distributors

incidence: 17/60* **, conc. range: 108–186 µg/kg, sample year: 1995/1996, country: India¹⁴²⁸, *roasted groundnut kernels, **sa from retailers

incidence: 17/17, conc. range: 0.1–0.7 µg/kg, sample year: unknown, country: China¹⁴³⁷

incidence: ?/20*, conc. range: 75–653 µg/kg, sample year: unknown, country: Thailand¹⁴³⁸, *ground roasted peanut

incidence: 9/9*, conc. range: 74.03–82.12 µg/kg, Ø conc.: 78.21 µg/kg, sample year: 2004/2005, country: Nigeria¹⁴⁷⁹, *sa from markets

incidence: 2/9, conc. range: 5.6–15.5 µg/kg, Ø conc.: 10.55 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 3/23, conc. range: 3.4–123 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 2/2, conc. range: 11.8–251.8 µg/kg, Ø conc.: 131.8 µg/kg, sample year: unknown, country: Japan¹⁵¹², sa from South Africa (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 11/11, conc. range: 0.8–100.3 µg/kg, Ø conc.: 26.6 µg/kg, sample year: unknown, country: Japan¹⁵¹², sa from China (8 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 3 sa co-contaminated with AFB₁, AFB₂)

incidence: 6/?/14*, conc. range: 15.5–618 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *raw groundnut shelled

incidence: 2/10*, conc. range: 25.3–126 µg/kg, Ø conc.: 75.65 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *roasted groundnut in shell (1 sa co-contaminated with AFB₁, AFB₂ and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 3/?/20*, conc. range: 32.9–37.2 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *roasted groundnut shelled

incidence: 3/?/8*, conc. range: 18.4–56.7 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *pound groundnut

incidence: 1/2*, conc.: 76.8 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *peanut slice (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 20/60*, Ø conc.: ≤116.15 µg/kg, sample year: unknown, country: Brazil¹⁵³⁴, *evaluated monthly for a storage period of 12 months

incidence: 12/73, conc. range: 0.22–33.4 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 7/18, conc. range: 8–94 µg/kg, Ø conc.: 43.0 µg/kg, sample year: 2001/2002, country: Turkey¹⁵⁷⁵

incidence: 23/48*, conc. range: 0.55–55.10 µg/kg, Ø conc.: 6.02 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *unprocessed peanuts

incidence: 15/48*, conc. range: 0.67–3.09 µg/kg, Ø conc.: 0.61 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty roasted peanuts

incidence: 11/13, conc. range: 1.47–15.33 µg/kg, Ø conc.: 4.25 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰

incidence: 1*/67**, conc.: 42.06 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Argentina, Brazil, Chile, China, *Egypt, India, Israel, Turkey, and USA, **peanuts with shell (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 259/1,040, conc. range: 0.01–720 µg/kg, sample year: 2009/2010, country: China¹⁶⁰²

incidence: 1/12*, conc.: 162 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *roasted peanut

incidence: 6/16*, conc. range: 4–357 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *flour/egg coated peanuts

incidence: 1/11*, conc.: 13 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *fried peanut

incidence: 1/21*, conc.: 2.2 µg/kg, sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *unshelled roasted peanuts

incidence: 5/11*, conc. range: 2.0–4.0 µg/kg (3 sa), >4.0 µg/kg (2 sa, maximum: 50.0 µg/kg), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *roasted peanut

incidence: 14/20*, conc. range: 2.0–4.0 µg/kg (4 sa), >4.0 µg/kg (10 sa, maximum: 61.7 µg/kg), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *flour coated peanut

incidence: 11/13*, conc. range: 2.0–4.0 µg/kg (6 sa), >4.0 µg/kg (5 sa, maximum: 7.0 µg/kg), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *egg coated peanut

AFLATOXIN B₂

incidence: 20/86, conc. range: 10–400 µg/kg, Ø conc.: 133.6 µg/kg, sample year: unknown, country: Brazil⁸ (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 16 sa co-contaminated with AFB₁ and AFB₂)

incidence: 37/190*, conc. range: ≤6.5 µg/kg, sample year: unknown, country: Egypt⁴⁴, *in-shell peanuts

incidence: 76/155*, conc. range: ≤6.5 µg/kg, sample year: unknown, country: Egypt⁴⁴, *shelled peanuts

incidence: 2/3*, conc. range: 1.8–2.6 µg/kg, Ø conc.: 2.2 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/1, conc.: 180 µg/kg, sample year: 1970, country: Germany⁶⁷, sa from Angola

incidence: 2/3*, conc. range: 0.3–0.6 µg/kg, Ø conc.: 0.45 µg/kg, sample year: 1989, country: Italy⁶⁸, sa from Syria, *shelled, roasted peanuts (2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/2*, conc. range: 11–79 µg/kg, Ø conc.: 45 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 179?/1,860, conc. range: <0.3–12.5 µg/kg, Ø conc.: 1.5 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 11?/149, conc. range: 0.1–5.3 µg/kg, Ø conc.: 0.9 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 45/267, conc. range: 5–1,760 µg/kg, Ø conc.: 116 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 5/33*, conc. range: 6–56 µg/kg, Ø conc.: 22 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴, *fried peanuts

incidence: 2/19*, conc. range: 66–711 µg/kg, Ø conc.: 389 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴, *roasted peanuts

incidence: 7/104, conc. range: tr–568 µg/kg, sample year: 1975/1976, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 5 sa co-contaminated with AFB₁ and AFB₂)

incidence: 8/121*, conc. range: 1–89 µg/kg, Ø conc.: 21.6 µg/kg, sample year: 1974–1976, country: Finland¹³⁸, sa imported, *roasted peanuts (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 6 sa co-contamination with AFB₁ and AFB₂)

incidence: 17/68*, conc. range: tr–76 µg/kg, sample year: 1974–1976, country: Finland¹³⁸, sa imported, *sliced and crushed peanuts (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 13 sa co-contaminated with AFB₁ and AFB₂)

incidence: 4/45, conc. range: 375–5,567 µg/kg, Ø conc.: 2,283.5 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴ (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 1/65*, conc.: 22 µg/kg, sample year: unknown, country: Spain¹⁵⁷, *in-shell peanuts

incidence: 39?/40, conc. range: 1.5–744 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 6/39, conc. range: tr–4 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/1*, conc.: 50 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported, *sorted peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 30/72, conc. range: 1–192 µg/kg, Ø conc.: 51 µg/kg, sample year: 1993/1994, country: Brazil²⁵⁸, *crude peanuts (19 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂)

incidence: 48/120, conc. range: 0.5–203 µg/kg, Ø conc.: 49 µg/kg, sample year: 2001/2002, country: Botswana²⁷⁰

incidence: 2/? , conc. range: tr–1,000 µg/kg, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 2/6, conc. range: 10–135 µg/kg, Ø conc.: 72.5 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 15?/29, conc. range: 1.6–16.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

incidence: 50/50*, conc. range: 1–2,245 µg/kg, Ø conc.: 148 µg/kg, sample year: 1990, country: USA⁸²⁶, *peanuts for oil production or feed (14 sa co-contaminated with AFB₁, AFB₂, AFG₁,

AFG₂, and CPA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 12 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 19 sa co-contaminated with AFB₁, AFB₂, and CPA, 2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 5/65, conc. range: 0.03–6.00 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 6?/20, conc. range: 0.10–0.11 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 4?/8*, conc. range: ≤~2.63 µg/kg, sample year: 2004, country: Korea¹⁰²⁰, *roasted peanuts

incidence: 1/1, conc.: 0.370 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan

incidence: 28/106*, conc. range: 6–26 µg/kg, Ø conc.: 10.7 µg/kg, sample year: unknown, country: Nigeria¹¹⁴⁰, *dry-roasted groundnuts

incidence: 3/3*, conc. range: 4–14 µg/kg, Ø conc.: 10.3 µg/kg, sample year: unknown, country: USA¹³⁴², *salted-in-shell peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/1*, conc.: 20 µg/kg, sample year: unknown, country: USA¹³⁴², *peanuts with cereal coating (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: ?/20*, conc. range: 4–161 µg/kg, sample year: unknown, country: Thailand¹⁴³⁸, *ground roasted peanut

incidence: 1/23, conc.: 19.5 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 2/2, conc. range: 1.2–21.3 µg/kg, Ø conc.: 11.25 µg/kg, sample year: unknown, country: Japan¹⁵¹², sa from South Africa (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 11/11, conc. range: 0.2–11.3 µg/kg, Ø conc.: 3.81 µg/kg, sample year:

unknown, country: Japan¹⁵¹², sa from China (3 sa co-contaminated with AFB₁, AFB₂, 8 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)
 incidence: 6?/14*, conc. range: 2.31–92.8 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *raw groundnut shelled
 incidence: 2/10*, conc. range: 4.46–33.0 µg/kg, Ø conc.: 17.23 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *roasted groundnut in shell (1 sa co-contaminated with AFB₁, AFB₂ and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂)
 incidence: 3?/20*, conc. range: 7.20–8.77 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *roasted groundnut shelled
 incidence: 3?/8*, conc. range: 3.63–12.9 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *pound groundnut
 incidence: 1/2*, conc.: 18.8 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *peanut slice (1 sa co-contaminated with AFB₁ and AFB₂)
 incidence: 17/60*, Ø conc.: ≤45.5 µg/kg, sample year: unknown, country: Brazil¹⁵³⁴, *evaluated monthly for a storage period of 12 months
 incidence: 8/73, conc. range: 0.12–28.4 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²
 incidence: 20/48*, conc. range: 1.60–4.34 µg/kg, Ø conc.: 0.74 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *unprocessed peanuts
 incidence: 10/48*, conc. range: <LOQ–0.58 µg/kg, Ø conc.: <LOQ, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty roasted peanuts
 incidence: 1*/67**, conc.: 3.30 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Argentina, Brazil, Chile, China, *Egypt, India, Israel, Turkey, and USA, **peanuts with shell (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁
 incidence: 6/86, conc. range: 20–800 µg/kg, Ø conc.: 206.7 µg/kg, sample year: unknown, country: Brazil⁸ (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFG₁, and AFG₂)
 incidence: 4/65, conc. range: 0.38 µg/kg, sample year: unknown, country: Tunisia/USA²⁰
 incidence: 37/190*, conc. range: 6.5–<13 µg/kg, sample year: unknown, country: Egypt⁴⁴, *in-shell peanuts
 incidence: 76/155*, conc. range: 6.5 to <26 µg/kg, sample year: unknown, country: Egypt⁴⁴, *shelled peanuts
 incidence: 1/1, conc.: 315 µg/kg, sample year: 1970, country: Germany⁶⁷, sa from Angola
 incidence: 2/2*, conc. range: 99–113 µg/kg, Ø conc.: 106 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac
 incidence: 179?/1,860, conc. range: <0.4–72.2 µg/kg, Ø conc.: 8.9 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported
 incidence: 11?/149, conc. range: ≤22.1 µg/kg, Ø conc.: 2.8 µg/kg, sample year: 1986–1990, country: Japan⁹⁹
 incidence: 5/267, conc. range: 12–72 µg/kg, Ø conc.: 31 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴
 incidence: 3/33*, conc. range: 14–1,053 µg/kg, Ø conc.: 371 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴, *fried peanuts
 incidence: 1/19*, conc.: 23 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴, *roasted peanuts
 incidence: 2/104, conc. range: 3–136 µg/kg, sample year: 1975/1976, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)
 incidence: 2/121*, conc. range: 12–20 µg/kg, Ø conc.: 16 µg/kg, sample year: 1974–1976, country: Finland¹³⁸, sa imported, *roasted

peanuts (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 6/68*, conc. range: tr–91 µg/kg, sample year: 1974–1976, country:

Finland¹³⁸, sa imported, *sliced and crushed peanuts (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁ and AFG₁)

incidence: 5/45, conc. range: 150–10,458 µg/kg, Ø conc.: 3,561.4 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴ (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and , AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 39/40, conc. range: 1.0–1,540 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 6/39, conc. range: tr–24 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/1*, conc.: 350 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported, *sorted peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 23/72, conc. range: 1–680 µg/kg, Ø conc.: 109.8 µg/kg, sample year: 1993/1994, country: Brazil²⁵⁸, *crude peanuts (19 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 3 sa co-contaminated with AFG₁ and AFG₂)

incidence: 51/120, conc. range: 0.6–259 µg/kg, Ø conc.: 91 µg/kg, sample year: 2001/2002, country: Botswana²⁷⁰

incidence: 3/11*, conc. range: 0.61–1.68 µg/kg, Ø conc.: 0.97 µg/kg, sample year: unknown, country: Spain³⁰², sa from Brazil, China, USA, and unknown origin, *different kinds of peanuts (2 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFG₁)

incidence: 2/50*, conc. range: 83–625 µg/kg, Ø conc.: 354 µg/kg, sample year: unknown,

country: Argentina³³⁵, *ncac (2 sa co-ontaminated with AFB₁, AFG₁, and CPA) incidence: 2/6, conc. range: 12–96 µg/kg, Ø conc.: 54 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 15/29, conc. range: 1.6–8.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

incidence: 29/50*, conc. range: 1–2,331 µg/kg, Ø conc.: 240 µg/kg, sample year: 1990, country: USA⁸²⁶, *peanuts for oil production or feed (14 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 12 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 4/65, conc. range: 0.42–11.73 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 4/8*, conc. range: ≤~4.07 µg/kg, sample year: 2004, country: Korea¹⁰²⁰, *roasted peanuts

incidence: 1/1, conc.: 0.023 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan

incidence: 1/1*, conc.: 2.816 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan, *limed peanuts

incidence: 12/106*, conc. range: 5–20 µg/kg, Ø conc.: 7.2 µg/kg, sample year: unknown, country: Nigeria¹¹⁴⁰, *dry-roasted groundnuts

incidence: 6/30*, conc. range: 130–160 µg/kg, Ø conc.: 140 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *food and sweets derived from peanut (6 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/1, conc.: 2,100 µg/kg, sample year: unknown, country: Japan/Nepal¹³⁰⁶

incidence: 1/3*, conc.: 7 µg/kg, sample year: unknown, country: USA¹³⁴², *salted-in-shell peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/23, conc.: 30.3 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

incidence: 2/2, conc. range: 19.3–88.2 µg/kg, Ø conc.: 53.8 µg/kg, sample year: unknown, country: Japan¹⁵¹², sa from South Africa (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 8/11, conc. range: 6.3–277 µg/kg, Ø conc.: 81.03 µg/kg, sample year: unknown, country: Japan¹⁵¹², sa from China (8 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 2/73, conc. range: 20.2 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 22/48*, conc. range: 1.18–36.88 µg/kg, Ø conc.: 4.39 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *unprocessed peanuts

incidence: 15/48*, conc. range: 0.58–2.93 µg/kg, Ø conc.: 0.55 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty roasted peanuts

AFLATOXIN G₂

incidence: 6/86, conc. range: 20–400 µg/kg, Ø conc.: 95 µg/kg, sample year: unknown, country: Brazil⁸ (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

incidence: 37/190*, conc. range: ≤6.5 µg/kg, sample year: unknown, country: Egypt⁴⁴, *in-shell peanuts

incidence: 76/155*, conc. range: ≤6.5 µg/kg, sample year: unknown, country: Egypt⁴⁴, *shelled peanuts

incidence: 1/1, conc.: 40 µg/kg, sample year: 1970, country: Germany⁶⁷, sa from Angola

incidence: 2/2*, conc. range: 23–31 µg/kg, Ø conc.: 27 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 179?/1,860, conc. range: <0.3–3 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 11?/149, conc. range: 0–6.7 µg/kg, Ø conc.: 0.8 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 3/267, conc. range: 5–80 µg/kg, Ø conc.: 34 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 1/33*, conc.: 15 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴, *fried peanuts

incidence: 1/104, conc.: 34 µg/kg, sample year: 1975/1976, country: Finland¹³⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 4/68*, conc. range: tr–14 µg/kg, sample year: 1974–1976, country: Finland¹³⁸, sa imported, *sliced and crushed peanuts (4 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 2/45, conc. range: 148–363 µg/kg, Ø conc.: 255.5 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴ (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 39?/40, conc. range: 1.0–548 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 6/39, conc. range: tr–2 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/1*, conc.: 30 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported, *sorted peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 22/72, conc. range: 1–320 µg/kg, Ø conc.: 51 µg/kg, sample year: 1993/1994, country: Brazil²⁵⁸, *crude peanuts (19 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 3 sa co-contaminated with AFG₁ and AFG₂)

incidence: 45/120, conc. range: 1–164 µg/kg, Ø conc.: 45 µg/kg, sample year: 2001/2002, country: Botswana²⁷⁰

incidence: 1/6, conc.: 10 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 15/29, conc. range: 1.6–16.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

incidence: 16/50*, conc. range: 1–407 µg/kg, Ø conc.: 63.9 µg/kg, sample year: 1990, country: USA⁸²⁶, *peanuts for oil production or feed (14 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 3/65, conc. range: 0.12–2.36 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 4/8*, conc. range: ≤~3.50 µg/kg, sample year: 2004, country: Korea¹⁰²⁰, *roasted peanuts

incidence: 1/1*, conc.: 0.006 µg/kg, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan, *limed peanuts

incidence: 3/106*, conc. range: 7–10 µg/kg, Ø conc.: 8.0 µg/kg, sample year: unknown, country: Nigeria¹¹⁴⁰, *dry-roasted groundnuts

incidence: 1/3*, conc.: 3 µg/kg, sample year: unknown, country: USA¹³⁴², *salted-in-shell peanuts (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 2/2, conc. range: 2.9–15.8 µg/kg, Ø conc.: 9.35 µg/kg, sample year: unknown, country: Japan¹⁵¹², sa from South Africa (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 8/11, conc. range: 1.6–48.7 µg/kg, Ø conc.: 15.21 µg/kg, sample year: unknown, country: Japan¹⁵¹², sa from China (8 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/10*, conc.: 20.5 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *roasted groundnut in shell (1 sa co-contaminated with AFB₁, AFB₂ and AFG₂)

incidence: 2/73, conc. range: 16.3 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 18/48*, conc. range: 1.33–16.87 µg/kg, Ø conc.: 1.73 µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *unprocessed peanuts

incidence: 12/48*, conc. range: <LOQ–1.82 µg/kg, Ø conc.: <LOQ µg/kg, sample year: 2006/2007, country: Brazil¹⁵⁷⁸, *salty roasted peanuts

AFLATOXIN M₁

incidence: ?/5*, conc. range: ≤64.7 µg/kg, sample year: unknown, country: China¹⁵⁹⁵, *musty peanuts

AFLATOXIN M₂

incidence: ?/5*, conc. range: ≤3.6 µg/kg, sample year: unknown, country: China¹⁵⁹⁵, *musty peanuts

AFLATOXIN

incidence: 5/71*, conc.: >30 to ≤100 µg/kg, sample year: 1967–1969, country: USA³², sa from Philippines, *whole peanuts

incidence: 71/173, conc. range: <50 µg/kg (29 sa), 50–250 µg/kg (12 sa), 250–1,000 µg/kg (16 sa), >1,000 µg/kg (14 sa), sample year: 1969–1970, country: Sudan⁶⁴

incidence: 47/150*, conc. range: 6–10 µg/kg (22 sa), 14–20 µg/kg (12 sa), 25–30 µg/kg (5 sa), 40–50 µg/kg (3 sa), 60–125 µg/kg (5 sa), sample year: 1967, country: Israel⁸⁹, *ncac

incidence: 24/77*, conc. range: 11–30 µg/kg (6 sa), 31–100 µg/kg (6 sa), ≤1,776 µg/kg (12 sa), sample year: 2002, country: India¹⁹⁵, *ncac

incidence: 441/630*, Ø conc.: 49.1 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *peanut and peanut products except peanut butter, **of pos sa?

incidence: 42/42*, conc. range: 3–18 µg/kg, Ø conc.: 7.23 µg/kg, sample year: 2000, country: India⁹⁹⁰, *pod sa from market yards

incidence: 46/84* **, Ø conc.: 230 µg/kg, sample year: 1966, country: USA¹⁰⁵⁸, *ncac,

**sa with visible *Aspergillus flavus* growth (0–2.5 % damage)

incidence: 23/1,704* **, Ø conc.: 41 µg/kg, sample year: 1966, country: USA¹⁰⁵⁸, *ncac,

**sa with no visible *Aspergillus flavus* growth (0–2.5 % damage)

incidence: 10/14* **, Ø conc.: 1,439 µg/kg, sample year: 1966, country: USA¹⁰⁵⁸, *ncac,

**sa with visible *Aspergillus flavus* growth (2.5–5.5 % damage)

incidence: 20/242* **, Ø conc.: 35 µg/kg, sample year: 1966, country: USA¹⁰⁵⁸, *ncac,

**sa with no visible *Aspergillus flavus* growth (2.5–5.5 % damage)

incidence: 5/6* **, Ø conc.: 2,951 µg/kg, sample year: 1966, country: USA¹⁰⁵⁸, *ncac,

**sa with visible *Aspergillus flavus* growth (>5.5 % damage)

incidence: 4/57* **, Ø conc.: 70 µg/kg, sample year: 1966, country: USA¹⁰⁵⁸, *ncac,

**sa with no visible *Aspergillus flavus* growth (>5.5 % damage)

incidence: 40/48*, conc. range: ≤1,197 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from high incidence area of liver cancer

incidence: 24/29*, conc. range: ≤562 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from low incidence area of liver cancer

incidence: 11/22, conc. range: 1–18 µg/kg, Ø conc.: 4 µg/kg, sample year: unknown, country: Fiji/Zambia¹²⁴¹, sa from Fiji

incidence: 1/11, conc.: 1 µg/kg, sample year: unknown, country: Fiji/Zambia¹²⁴¹, sa from Tonga

incidence: 88/678, conc. range: ≤4 to <20 µg/kg (35 sa), ≥20 µg/kg (53 sa, maximum: 7,525.0 µg/kg), sample year: unknown, country: Kenya/USA¹²⁹¹, sa from Kenya

incidence: 35/170, Ø conc.: 179.8 µg/kg, sample year: unknown, country: South Africa/France/Kenya/Netherlands¹³¹⁹, sa from Swaziland

incidence: 44/400*, conc. range: 4–12 µg/kg, Ø conc.: 8.5 µg/kg, sample year: unknown, country: Sudan/Saudi Arabia¹³⁶⁴, sa from Sudan (43 sa contained AFB₁, 1 sa contained AFG₁), *roasted peanuts

incidence: 41/47, conc. range: 1–5 µg/kg (16 sa), 6–15 µg/kg (11 sa), 16–25 µg/kg (1 sa), 26–50 µg/kg (4 sa), 51–100 µg/kg (3 sa), >100 µg/kg (6 sa), sample year: unknown, country: France/England/GermanyUSA/Gambia¹⁴⁹⁴, sa from Gambia

AFLATOXINS (B₁, G₁)

incidence: 274/321*, conc. range: 5–2,440 µg/kg, Ø conc.: 305 µg/kg, sample year: 1994, country: Brazil²³³, *peanuts and peanut products

AFLATOXINS (B₁, B₂, G₁)

incidence: 1/10*, conc.: 72 µg/kg, sample year: 1975/1976–?, country: Guatemala³³, *ncac

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 27*/152, conc. range: 1–100 µg/kg (11 sa), 100–1,000 µg/kg (8 sa), >1,000 µg/kg (8 sa), sample year: 1966/1967, country: Uganda/USA⁵, sa from Uganda, *24 sa contained AFB₁, 16 sa contained AFB₂, 17 sa contained AFG₁, 7 sa contained AFG₂

incidence: 73/73*, conc. range: 2 µg/kg (52 sa), 2–5 µg/kg (12 sa), 6–15 µg/kg (8 sa), 61 µg/kg (1 sa), sample year: 1988/1989, country: Australia¹³, *included peanuts and peanut butters

incidence: 284/1,679*, conc. range: 5.0–9.9 µg/kg (62 sa), 10.0–14.9 µg/kg (52 sa), 15.0–19.9 µg/kg (37 sa), 20.0–24.9 µg/kg (35 sa), >25.0 µg/kg (98 sa), sample year: 1970–1975, country: Canada⁵⁹, *raw peanuts

incidence: 7/157*, conc. range: 5.0–9.9 µg/kg (3 sa), 10.0–14.9 µg/kg (2 sa), >25 µg/kg (2 sa), sample year: 1970–1975, country: Canada⁵⁹, *processed peanuts

incidence: 106/216, conc. range: $\leq 12,256$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,530 $\mu\text{g}/\text{kg}$, sample year: 1967–1969, country: Thailand¹⁶³

incidence: 93/120, conc. range: 12–329 $\mu\text{g}/\text{kg}$, \emptyset conc.: 118 $\mu\text{g}/\text{kg}$, sample year: 2001/2002, country: Botswana²⁷⁰

incidence: 11/35, conc. range: >20 to ≤ 936 $\mu\text{g}/\text{kg}$, \emptyset conc.: 440 $\mu\text{g}/\text{kg}$, sample year: 1995/1996, country: Brazil²⁷⁷

incidence: 3/11*, conc. range: 1.0–3.9 $\mu\text{g}/\text{kg}$ (1 sa), >50 $\mu\text{g}/\text{kg}$ (2 sa, maximum: 61 $\mu\text{g}/\text{kg}$), sample year: unknown, country: UK⁷³⁹, *port sa

incidence: 2/36*, conc. range: ≤ 105 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁷³⁹, *retail sa

incidence: 2/4, conc. range: 0.17–2.13 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.15 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Qatar⁸⁷⁸

incidence: 21/38, conc. range: tr–15 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7 $\mu\text{g}/\text{kg}$, sample year: 1973, country: USA¹⁴⁹⁵

incidence: 33/107, conc. range: tr–60 $\mu\text{g}/\text{kg}$, \emptyset conc.: 13 $\mu\text{g}/\text{kg}$, sample year: 1974, country: USA¹⁴⁹⁵

incidence: 20/90, conc. range: 6–182 $\mu\text{g}/\text{kg}$, \emptyset conc.: 30 $\mu\text{g}/\text{kg}$, sample year: 1975, country: USA¹⁴⁹⁵

incidence: 4/10*, conc. range: 1.5–14.5 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5.10 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Pakistan¹⁵³², *peanuts with shell

incidence: 5/10*, conc. range: 0.7–12.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5.20 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Pakistan¹⁵³², *peanuts without shell

incidence: 29/359*, conc. range: 7.9–1,496 $\mu\text{g}/\text{kg}$, \emptyset conc.: 129.0 $\mu\text{g}/\text{kg}$, sample year: 2002–2011, country: Brazil¹⁵⁹⁰, *toasted, salted and shelled peanuts

AFLATOXINS (TOTAL)

incidence: 3/13* **, conc. range: 0.1–20 $\mu\text{g}/\text{kg}$ (3 sa, maximum: 16.3 $\mu\text{g}/\text{kg}$), sample year: 1998, country: Qatar²,

sa imported, *ncac, **included peanut and peanut products

incidence: 1/8* **, conc.: 4.6 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Qatar², sa imported, *ncac, **included peanut and peanut products

incidence: 5/11* **, conc. range: 0.1–20 $\mu\text{g}/\text{kg}$ (4 sa), 22.7 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 2000, country: Qatar², sa imported, *ncac, **included peanut and peanut products

incidence: 5/8*, conc. range: 0.5–5 $\mu\text{g}/\text{kg}$ (2 sa), 182 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1984, country: UK⁶⁰, *raw shelled peanuts

incidence: 13/24* **, conc. range: 0.5–5 $\mu\text{g}/\text{kg}$ (8 sa), 6–10 $\mu\text{g}/\text{kg}$ (1 sa), 11–30 $\mu\text{g}/\text{kg}$ (1 sa), 31–100 $\mu\text{g}/\text{kg}$ (2 sa), 4,920 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1984, country: UK⁶⁰, *raw in-shell peanuts

incidence: 4/17*, conc. range: 0.5–5 $\mu\text{g}/\text{kg}$ (3 sa), 7 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1984, country: UK⁶⁰, *roasted peanuts

incidence: 3/14*, conc. range: 0.5 to ≤ 5 $\mu\text{g}/\text{kg}$, sample year: 1984, country: UK⁶⁰, *dry roasted peanuts

incidence: 7/13*, conc. range: 0.5–5 $\mu\text{g}/\text{kg}$ (3 sa), 6–10 $\mu\text{g}/\text{kg}$ (2 sa), 11–30 $\mu\text{g}/\text{kg}$ (2 sa, maximum: 28 $\mu\text{g}/\text{kg}$), sample year: 1984, country: UK⁶⁰, *roasted in-shell peanuts

incidence: 3/17*, conc. range: 0.5 to ≤ 5 $\mu\text{g}/\text{kg}$, sample year: 1984, country: UK⁶⁰, *chocolate-coated peanuts

incidence: 8/19, conc. range: 6–10 $\mu\text{g}/\text{kg}$ (6 sa), 31–100 $\mu\text{g}/\text{kg}$ (1 sa), 190 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1984, country: UK⁶⁰, *peanut brittle

incidence: 1/2, conc.: 1.70, sample year: unknown, country: Poland¹¹⁰, sa imported

incidence: 1/6*, conc.: 3.59, sample year: unknown, country: Poland¹¹⁰, sa imported, *salted peanuts

incidence: 31/31, conc. range: >6.8 –20 $\mu\text{g}/\text{kg}$ (3 sa), -50 $\mu\text{g}/\text{kg}$ (7 sa), -100 $\mu\text{g}/\text{kg}$

(2 sa), -500 µg/kg (10 sa), -2,000 µg/kg (6 sa), -4,000 µg/kg (1 sa), -6,000 µg/kg (2 sa), sample year: 1992-1994, country: Switzerland¹³¹, sa from Ecuador
incidence: 3/19, conc. range: LOQ-4 µg/kg (1 sa), >10-70.9 µg/kg (2 sa), sample year: 2000/2001, country: UK⁸³⁴

incidence: 1/20, conc.: 0.30 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco

incidence: 5/10*, conc. range: 0.75-26.36 µg/kg, sample year: 2007, country: Turkey¹⁵⁵¹, *destined for export (2 sa co-contaminated with AFB₁ and AFB₂, 3 sa contaminated solely with AFB₁)

incidence: 14/35*, conc. range: 0.3-7.4 µg/kg**, sample year: unknown, country: China¹⁵⁹⁵, *fresh peanuts, **AFB₁, AFB₂, AFG₁, and AFG₂

incidence: 5/5*, conc. range: 1.2-1,482.3 µg/kg**, ∅ conc.: 323.3 µg/kg**, sample year: unknown, country: China¹⁵⁹⁵, *musty peanuts, **AFB₁, AFB₂, AFG₁, AFG₂, M₁, and M₂

incidence: 1/12*, conc.: 204 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *roasted peanut

incidence: 6/16*, conc. range: 5-870 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *flour/egg coated peanuts

incidence: 1/11*, conc.: 27 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *fried peanut

AFLATOXINS

incidence: 1/3*, conc.: 2.8 µg/kg, sample year: 1997, country: Qatar¹, most sa from Iran, Syria, Turkey, and USA, *peanuts with shell

incidence: 56/200*, conc. range: 0.19-8.37 µg/kg**, sample year: unknown, country: Sudan⁶⁵, *sa from **rain-fed and

irrigated regions

incidence: 3/3*, conc. range: 1.7-5.7 µg/kg, ∅ conc.: 3.6 µg/kg, sample year: unknown, country: Sudan⁶⁵, grey roasted peanuts

incidence: 4/4*, conc. range: 4.3-14.3 µg/kg, ∅ conc.: 8.2 µg/kg, sample year: unknown, country: Sudan⁶⁵, red roasted peanuts

incidence: 6/55*, conc. range: ≤329 µg/kg, ∅ conc.: 68 µg/kg, sample year: 1986, country: USA¹⁹⁷, *shelled, roasted peanuts

incidence: 1/4*, conc.: 273 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported, *in-shell, raw peanuts

incidence: 1/1*, conc.: 4 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported, *shelled, roasted peanuts

incidence: 1/1*, conc.: 302 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported, *peanut mix

incidence: 28/86*, conc. range: 0.1-5 µg/kg (5 sa), 6-10 µg/kg (3 sa), 11-20 µg/kg (5 sa), 21-35 µg/kg (7 sa), 36-50 µg/kg (1 sa), >50 µg/kg (7 sa), sample year: 1995-1999, country: Malaysia³⁹¹, *raw peanuts

incidence: 26/27* **, conc. range: 2-5,091 µg/kg, sample year: 1980, country: USA⁷¹⁷, *ncac, **loose-shell kernel fractions

incidence: 20/21* **, conc. range: 3-550 µg/kg, sample year: 1980, country: USA⁷¹⁷, *ncac, **sound mature kernel fractions

incidence: 93/160*, conc. range: tr-5,850 µg/kg, sample year: 1973, country: India⁸²¹, *ncac (16 sa co-contaminated with AFS and CIT)

incidence: 8/72, conc. range: ≤7.7 µg/kg, ∅ conc.: 2.7 µg/kg, sample year: 2008/2009, country: Spain¹⁵³⁶

STERIGMATOCYSTIN

incidence: 1/23, conc.: 9.7 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 16/160*, conc. range: tr–1,200 µg/kg, sample year: 1973, country: India⁸²¹, *ncac (16 sa co-contaminated with AFS and CIT)

CYCLOPIAZONIC ACID

incidence: 18/120, conc. range: 1–10 µg/kg, Ø conc.: 2 µg/kg, sample year: 2001/2002, country: Botswana²⁷⁰

incidence: 2/50*, conc. range: 493–4,300 µg/kg, Ø conc.: 2,396.5 µg/kg, sample year: unknown, country: Argentina³³⁵, *ncac (2 sa co-contaminated with AFB₁, AFG₁, and CPA)

incidence: 21/27* **, conc. range: 32–6,525 µg/kg, sample year: 1980, country: USA⁷¹⁷, *ncac, **loose-shell kernel fractions

incidence: 4/21*, conc. range: 32–130 µg/kg, sample year: 1980, country: USA⁷¹⁷, *ncac, **sound mature kernel fractions

incidence: 45/50*, conc. range: tr–2,926 µg/kg, sample year: 1990, country: USA⁸²⁶, *peanuts for oil production or feed (14 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and CPA, 12 sa co-contaminated with AFB₁, AFB₂, AFG₁, and CPA, 19 sa co-contaminated with AFB₁, AFB₂, and CPA)

incidence: 1/23, conc.: 763 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

3-NITROPROPIONIC ACID

incidence: 2/23, conc. range: 223–1,349 µg/kg, Ø conc.: 786 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

OCHRATOXIN A

incidence: 20/160*, conc. range: 5.5–46.7 µg/kg, Ø conc.: 27.7 µg/kg, sample year: 2004, country: Argentina³⁹, *after 1 month of storage

incidence: 20/60*, conc. range: 2.0–11.0 µg/kg, Ø conc.: 6.63 µg/kg, sample year: 2004, country: Argentina³⁹, *after 2 months of storage

incidence: 20/90*, conc. range: 4.5–32.0 µg/kg, Ø conc.: 12.85 µg/kg, sample year: 2004, country: Argentina³⁹, *after 3 months of storage

incidence: 6/10, conc. range: 0.20–0.64 µg/kg, Ø conc.: 0.32 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (3 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA, 3 sa co-contaminated with AFB₁, OTA, and ZEA)

incidence: 3/31, conc. range: ≤0.080 µg/kg, sample year: unknown, country: Germany⁵⁹²

incidence: 6/10, conc. range: 0.6–64 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁶⁴², sa from Côte d'Ivoire

incidence: 2/18, conc. range: 50–2,000 µg/kg, Ø conc.: 1,025 µg/kg, sample year: unknown, country: India⁶⁵⁶

incidence: 2/6, conc. range: pr, sample year: 1983–1985, country: India⁸⁰²

incidence: 7/20, conc. range: 0.1–2.36 µg/kg, Ø conc.: 0.68 µg/kg, sample year: 2005, country: Morocco⁸⁵⁹

incidence: 15*/47**, conc. range: ≤170 µg/kg, sample year: unknown, country: Argentina¹⁰²¹, *14 sa with ≤2.5 µg/kg, **stored peanut sa

incidence: 30/72, conc. range: 0.084–0.774 µg/kg, Ø conc.: 0.214 µg/kg, sample year: 2008, country: Spain¹⁵⁴²

incidence: 10/42, conc. range: 15–160 µg/kg, Ø conc.: 60 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹

incidence: 1/1, conc.: 7.65 µg/kg, sample year: unknown, country: Japan¹⁵⁹⁴ (1 sa co-contaminated with OTA and OTB)

OCHRATOXIN B

incidence: 1/1, conc.: 2.56 µg/kg, sample year: unknown, country: Japan¹⁵⁹⁴ (1 sa co-contaminated with OTA and OTB)

Fusarium Toxins

BEAUVERICIN

incidence: 1/26, conc.: 0.1 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Burkina Faso

incidence: 16/23, conc. range: 0.1–24.0 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

ENNIATIN B₁

incidence: 1/23, conc.: 0.3 µg/kg, sample year: 2010, country: Austria/Nigeria¹⁴⁹³, sa from Mozambique

FUMONISIN B₁

incidence: 1/5, conc.: 1,000 µg/kg, sample year: 1995–1997, country: Zimbabwe/Belgium³⁶⁵, sa from Zimbabwe

incidence: 7/10, conc. range: <300–600 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (3 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA, 4 sa co-contaminated with AFB₁, FB₁, and ZEA)

DIACETOXYSCIRPENOL

incidence: 2/25*, conc. range: 410–2,030 µg/kg, Ø conc.: 1,220 µg/kg, sample year: 1985, country: India⁴³¹, *ncac

T-2 TOXIN

incidence: 3/31*, conc. range: 170–38,890 µg/kg, Ø conc.: 25,270 µg/kg, sample year: 1984, country: India⁴³¹, *ncac

incidence: 3/25*, conc. range: 630–1,460 µg/kg, Ø conc.: 1,043.3 µg/kg, sample year: 1985, country: India⁴³¹, *ncac

ZEARALENONE

incidence: 10/10, conc. range: 50–200 µg/kg, Ø conc.: 95 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (3 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA, 4 sa co-contaminated with AFB₁, FB₁, and ZEA, 3 sa co-contaminated AFB₁, OTA, and ZEA)

Nut (pecan nuts) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3*/48, conc. range: tr–25 µg/kg, sample year: 1972, country: USA⁴⁶, *blow outs and sound pecans

AFLATOXIN G₁

incidence: 3*/48, conc. range: tr, sample year: 1972, country: USA⁴⁶, *blow outs and sound pecans

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/55, conc. range: 5.0–9.9 µg/kg, sample year: 1970–1975, country: Canada⁵⁹

AFLATOXINS

incidence: 1/229, conc.: 40 µg/kg, sample year: 1974/1975, country: USA¹⁹⁶

incidence: 3/17, conc. range: ≤334 µg/kg, Ø conc.: 135 µg/kg, sample year: 1986, country: USA¹⁹⁷

incidence: 12/185, conc. range: ≤1,900 µg/kg, Ø conc.: 156 µg/kg, sample year: 1969–1971, country: USA²⁷⁴

incidence: 1/55, conc.: 355 µg/kg, sample year: 1971/1972, country: USA²⁷⁴

incidence: 13/95, conc. range: ≤172 µg/kg, Ø conc.: 42 µg/kg, sample year: 1972/1973, country: USA²⁷⁴

incidence: 11/125, conc. range: ≤125 µg/kg, Ø conc.: 34 µg/kg, sample year: 1973/1974, country: USA²⁷⁴

incidence: 2/101, conc. range: 10–38 µg/kg, Ø conc.: 24 µg/kg, sample year: 1974/1975, country: USA²⁷⁴

incidence: 1/128, conc.: 5 µg/kg, sample year: 1976/1977, country: USA²⁷⁴

incidence: 6/214, conc. range: ≤126 µg/kg, Ø conc.: 27 µg/kg, sample year: 1977–1979, country: USA²⁷⁴

incidence: 3/132, conc. range: ≤ 9 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 8 $\mu\text{g}/\text{kg}$, sample year: 1979/1980,
 country: USA²⁷⁴

STERIGMATOCYSTIN

incidence: 1/40*, conc.: $\sim 20,000$ $\mu\text{g}/\text{kg}$,
 sample year: unknown, country: USA⁷⁵⁷,
 *in-shell pecans

Nut (pine nuts) may contain the
 following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 26/50*, conc. range: 25–
 2,080 $\mu\text{g}/\text{kg}$, sample year: unknown,
 country: Tunisia/USA²¹, sa from Tunisia,
 *Aleppo pine nuts

incidence: 2/12, conc. range: 0.19–0.23 $\mu\text{g}/$
 kg , \emptyset conc.: 0.21 $\mu\text{g}/\text{kg}$, sample year:
 unknown, country: China⁹⁷²

AFLATOXIN B₂

incidence: 1/12, conc.: 0.02 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: China⁹⁷²

AFLATOXIN G₁

incidence: 26/50, conc. range: 56–4,570 $\mu\text{g}/$
 kg , sample year: unknown, country:
 Tunisia/USA²¹, sa from Tunisia, *Aleppo
 pine nuts

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 26/50, conc. range: 95–7,550 $\mu\text{g}/$
 kg , sample year: unknown, country:
 Tunisia/USA²¹, sa from Tunisia, *Aleppo
 pine nuts

incidence: 2/10*, conc. range:
 2.6–3.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3.25 $\mu\text{g}/\text{kg}$, sample
 year: 2009, country: Pakistan¹⁵³², *pine
 nuts with shell

Nut (pistachio nuts) may contain the
 following mycotoxins:

Aspergillus Toxins

AFLATOXICOL

incidence: 5/54, conc. range: 0.2–13.9 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 3.62 $\mu\text{g}/\text{kg}$, sample year: 1977–1982,

country: Japan⁵⁰² (5 sa co-contaminated
 with AFB₁, AFB₂, AFL, and AFM₁)

AFLATOXIN B₁

incidence: 1/19, conc.: 22 $\mu\text{g}/\text{kg}$, sample year:
 unknown, country: Tunisia/USA²⁰

incidence: 53?/856, conc. range: 1.4–
 206 $\mu\text{g}/\text{kg}$, \emptyset conc.: 54.9 $\mu\text{g}/\text{kg}$, sample
 year: 1992–1996, country: Cyprus⁷⁴,
 sa domestic and imported

incidence: 5?/165, conc. range: 11.5–
 1,382 $\mu\text{g}/\text{kg}$, \emptyset conc.: 323 $\mu\text{g}/\text{kg}$, sample
 year: 1986–1990, country: Japan⁹⁹

incidence: 17/29, conc. range: 2.3–165 $\mu\text{g}/$
 kg , \emptyset conc.: 56.4 $\mu\text{g}/\text{kg}$, sample year:
 unknown, country: Netherlands¹⁰¹

incidence: 1/5*, conc.: 13.2 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: UK²²⁴, sa
 probably from China or India, *roasted
 pistachio nuts

incidence: 2/5*, conc. range: 105.0–
 227.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 166.1 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: UK²²⁴, sa
 probably from China or India, *raw
 pistachio nuts

incidence: 1/1, conc.: 4.6 $\mu\text{g}/\text{kg}$,
 sample year: 1985, country: Japan³⁴⁶,
 sa imported

incidence: 11/23, conc. range: 0.05–0.1 $\mu\text{g}/$
 kg (6 sa), 0.11–1 $\mu\text{g}/\text{kg}$ (3 sa), 1.1–5 $\mu\text{g}/\text{kg}$
 (1 sa), 11–40 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 3.6 $\mu\text{g}/$
 kg , sample year: 1989/1990, country:
 France³⁹⁷

incidence: 6/54, conc. range: 7.9–1,830 $\mu\text{g}/$
 kg , \emptyset conc.: 584.7 $\mu\text{g}/\text{kg}$, sample year:
 1977–1982, country: Japan⁵⁰² (5 sa
 co-contaminated with AFB₁, AFB₂, AFL,
 and AFM₁, 1 sa co-contaminated with
 AFB₁ and AFB₂)

incidence: 2/6, conc. range: 15–94 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 54.5 $\mu\text{g}/\text{kg}$, sample year: 1983–
 1985, country: India⁸⁰²

incidence: 9/23, conc. range: LOQ–2 $\mu\text{g}/$
 kg (5 sa), > 2 –5 $\mu\text{g}/\text{kg}$ (2 sa), > 5 –41.3 $\mu\text{g}/$
 kg (2 sa), sample year: 2000/2001,
 country: UK⁸³⁴

incidence: 3/29, conc. range: >5–93.3 µg/kg (3 sa), sample year: 2000/2001, country: UK⁸³⁴

incidence: 21/40, conc. range: <LOQ–122.4 µg/kg, sample year: 2005/2006, country: Tunisia⁸⁴⁶

incidence: 3/16*, conc. range: 0.12–0.18 µg/kg, Ø conc.: 0.146 µg/kg, sample year: 2007, country: Spain⁹²⁰, sa from Iran (12 sa, 3 contaminated, 1 sa co-contaminated with AFB₁ and AFB₂, 2 sa contaminated solely with AFB₁), USA (3 sa), and Spain (1 sa), *pre-packed pistachio nuts

incidence: 8/16*, conc. range: 0.13–0.29 µg/kg, Ø conc.: 0.185 µg/kg, sample year: 2007, country: Spain⁹²⁰, sa from Iran (12 sa, 8 contaminated, 2 sa co-contaminated with AFB₁ and AFB₂, 6 sa contaminated solely with AFB₁), Spain (1 sa), and Turkey (3 sa), *bulk pistachio nuts

incidence: 9/20, conc. range: ≤1,430 µg/kg, Ø conc.: 158 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco

incidence: 12/24, conc. range: 0.6–98.5 µg/kg, Ø conc.: 27.49 µg/kg, sample year: 2003, country: Spain⁹⁷⁵

incidence: 1/4, conc.: 3.36 µg/kg, sample year: 2004, country: Korea¹⁰²⁰

incidence: 3/15, conc. range: 3.36–38.66 µg/kg, Ø conc.: 16.22 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴

incidence: 1/1*, conc.: 0.36 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *green pistachios

incidence: 8/72, conc. range: 0.48–36.81 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 1/1*, conc.: 1.29 µg/kg, sample year: 2008/2009, country: Italy⁶⁰¹, imported from Turkey, **pistachios without shell (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 53?/856, conc. range: <0.3–2.3 µg/kg, Ø conc.: 1.2 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 5/165, conc. range: 0.5–260 µg/kg, Ø conc.: 58.0 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 1/5*, conc.: 1.7 µg/kg, sample year: unknown, country: UK²²⁴, sa probably from China or India, *roasted pistachio nuts

incidence: 2/5*, conc. range: 10.0–31.7 µg/kg, Ø conc.: 20.9 µg/kg, sample year: unknown, country: UK²²⁴, sa probably from China or India, *raw pistachio nuts

incidence: 6/54, conc. range: 1.5–235 µg/kg, Ø conc.: 85.96 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (5 sa co-contaminated with AFB₁, AFB₂, AFL, and AFM₁, 1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/6, conc.: 75 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 11/40, conc. range: 0.24 to <LOQ µg/kg?, sample year: 2005/2006, country: Tunisia⁸⁴⁶

incidence: 1/16*, conc.: 0.12 µg/kg, sample year: 2007, country: Spain⁹²⁰, sa from Iran (12 sa, 1 sa contaminated with AFB₁ and AFB₂), USA (3 sa), and Spain (1 sa), *pre-packed pistachio nuts

incidence: 2/16*, conc. range: 0.12–0.14 µg/kg, Ø conc.: 0.13 µg/kg, sample year: 2007, country: Spain⁹²⁰, sa from Iran (12 sa, 2 sa co-contaminated with AFB₁ and AFB₂), Spain (1 sa), and Turkey (3 sa), *bulk pistachio nuts

incidence: 7/24, conc. range: 1.3–19.0 µg/kg, Ø conc.: 6.87 µg/kg, country: Spain⁹⁷⁵

incidence: 4/72, conc. range: 0.076–2.53 µg/kg, sample year: unknown, country: Turkey¹⁵⁶²

incidence: 1/1*, conc.: 0.19 µg/kg, sample year: 2008/2009, country: Italy¹⁶⁰¹, imported from Turkey, **pistachios without shell (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 5?/165, conc. range: ≤306 µg/kg, Ø conc.: 61.3 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 1/6, conc.: 12 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 3/40, conc. range: <LOQ, sample year: 2005/2006, country: Tunisia⁸⁴⁶

AFLATOXIN G₂

incidence: 5?/165, conc. range: ≤48.3 µg/kg, Ø conc.: 9.7 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 1/6, conc.: 8 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 3/40, conc. range: <LOQ, sample year: 2005/2006, country: Tunisia⁸⁴⁶

AFLATOXIN M₁

incidence: 5/54, conc. range: 0.9–51.8 µg/kg, Ø conc.: 21.68 µg/kg, sample year: 1977–1982, country: Japan⁵⁰² (5 sa co-contaminated with AFB₁, AFB₂, AFL, and AFM₁)

AFLATOXIN

incidence: 46/46, conc. range: 6–97 µg/kg, Ø conc.: 24 µg/kg, sample year: unknown, country: USA⁵², sa from Iran

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 17/175, conc. range: 5.0–9.9 µg/kg (4 sa), 10.0–14.9 µg/kg (3 sa), 15.0–19.9 µg/kg (1 sa), 20.0–24.9 µg/kg (2 sa), >25.0 µg/kg (7 sa), sample year: 1970–1975, country: Canada⁵⁹

incidence: 8/24*, conc. range: 1.0–3.9 µg/kg (1 sa), 4.0–10.0 µg/kg (1 sa), 10.1–20.0 µg/kg (1 sa), 20.1–50.0 µg/kg (2 sa), >50 µg/kg (3 sa, maximum: 175 µg/kg), sample year: unknown, country: UK⁷³⁹, sa imported, *port sa

incidence: 3/6, conc. range: 0.23–81.64 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸

incidence: 2/10*, conc. range: 1.2–3.0 µg/kg, Ø conc.: 2.10 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *pistachios with shell

incidence: 5/10*, conc. range: 2.0–14.0 µg/kg, Ø conc.: 6.34 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *pistachios without shell

incidence: 7/21, conc. range: 0.01–4 µg/kg (5 sa), >4 µg/kg (2 sa, maximum: 2,200 µg/kg), sample year: 1996–1998, country: Sweden¹⁵⁶⁵

AFLATOXINS (TOTAL)

incidence: 5/23* **, conc. range: 0.1–20 µg/kg (3 sa), >20 µg/kg (2 sa, maximum: 23.0 µg/kg), sample year: 1997, country: Qatar², sa imported, *ncac, **pistachio with shell

incidence: 8/24* **, conc. range: 0.1–20 µg/kg (4 sa), >20 µg/kg (4 sa, maximum: 75.0 µg/kg), sample year: 1998, country: Qatar², sa imported, *ncac, **pistachio with shell

incidence: 16/28* **, conc. range: 0.1–20 µg/kg (13 sa), >20 µg/kg (3 sa, maximum: 55.3 µg/kg), sample year: 1999, country: Qatar², sa imported, *ncac, **pistachio with shell

incidence: 10/18* **, conc. range: 0.1–20 µg/kg (7 sa), >20 µg/kg (3 sa, maximum: 50.4 µg/kg), sample year: 2000, country: Qatar², sa imported, *ncac, **pistachio with shell

incidence: 10/13* **, conc. range: 0.1–20 µg/kg (7 sa), >20 µg/kg (3 sa, maximum: 90.6 µg/kg), sample year: 1999, country: Qatar², sa imported, *ncac, **pistachio without shell

incidence: 5/9* **, conc. range: 0.1–20 µg/kg (2 sa), >20 µg/kg (3 sa, maximum: 117 µg/kg), sample year: 2000, country:

Qatar², sa imported, *ncac, **pistachio without shell

incidence: 1/4, conc.: 3.87 µg/kg, sample year: unknown, country: Poland¹¹⁰, sa imported

incidence: 5/23, conc. range: LOQ–4 µg/kg (2 sa), >4–10 µg/kg (1 sa), >10–47.5 µg/kg (2 sa), sample year: 2000/2001, country: UK⁸³⁴

incidence: 3/29, conc. range: >4–10 µg/kg (1 sa), >10–106.9 µg/kg (2 sa), sample year: 2000/2001, country: UK⁸³⁴

incidence: 9/20, conc. range: ≤1,450 µg/kg, Ø conc.: 163 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco

incidence: 14/70, conc. range: ≤108.3 µg/kg, Ø conc.: 8.9 µg/kg, sample year: 2008/2009, country: Spain¹⁵³⁶

incidence: 16/28*, conc. range: 2.31–63.11 µg/kg, sample year: 2007, country: Turkey¹⁵⁵¹, *destined for export (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFB₁)

AFLATOXINS

incidence: 5/23*, conc. range: 0.53–23 µg/kg, sample year: 1997, country: Qatar¹, most sa from Iran, Syria, Turkey, USA, *pistachios with shell

incidence: 8/24*, conc. range: 1.2–75 µg/kg, sample year: 1998, country: Qatar¹, most sa from Iran, Syria, Turkey, USA, *pistachios with shell

incidence: 12/23*, conc. range: 7.3–289 µg/kg, sample year: 1997, country: Qatar¹, most sa from Iran, Syria, Turkey, USA, *pistachios without shell

incidence: 40/77*, conc. range: 8.3–275 µg/kg, sample year: 1998, country: Qatar¹, most sa from Iran, Syria, Turkey, USA, *pistachios without shell

incidence: 7/22, conc. range: ≤252 µg/kg, Ø conc.: 58 µg/kg, sample year: 1986, country: USA¹⁹⁷

incidence: 10/21*, conc. range: ≤133 µg/kg, Ø conc.: 41 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported, *shelled pistachio nuts

incidence: 2/31, conc. range: 0.4–0.7 µg/kg, Ø conc.: 0.55 µg/kg, sample year: 2008, country: Spain¹⁰⁸⁷, sa from Algeria

STERIGMATOCYSTIN

incidence: 2/6, conc. range: 70–100 µg/kg, Ø conc.: 85 µg/kg, sample year: 1983–1985, country: India⁸⁰²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/23, conc. range: 0.9–46.5 µg/kg, Ø conc.: 23.7 µg/kg, sample year: 2000/2001, country: UK⁸³⁴

incidence: 1/31, conc.: 170 µg/kg, sample year: 2008, country: Spain¹⁰⁸⁷, sa from Algeria

incidence: 2/70, conc. range: 0.134–0.321 µg/kg, Ø conc.: 0.228 µg/kg, sample year: 2008, country: Spain¹⁵⁴²

incidence: 6/24, conc. range: 11–203 µg/kg, Ø conc.: 89 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹

Nut (shea-nuts) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/18*, conc. range: 6–10 µg/kg (1 sa), 16–20 µg/kg (2 sa), sample year: 1980/1981, country: England¹¹⁹⁹, sa from Ghana, Ivory Coast, Mali, and Upper Volta, *providing cocoa-butter substitutes

AFLATOXIN B₂

incidence: 1/18*, conc.: pr, sample year: 1980/1981, country: England¹¹⁹⁹, sa from Ghana, Ivory Coast, Mali, and Upper Volta, *providing cocoa-butter substitutes

Nut (tiger-nuts) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 27/77, conc. range: 10–120 µg/kg, sample year: 1993, country: Nigeria²⁹⁵

incidence: 3/37, conc. range: 0.7–4.5 µg/kg, Ø conc.: 2.4 µg/kg, sample year: unknown, country: Spain¹³⁹⁵ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 14/48, conc. range: 1.2–2 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴

AFLATOXIN B₂

incidence: 3/37, conc. range: 2.2–3.5 µg/kg, Ø conc.: 3 µg/kg, sample year: unknown, country: Spain¹³⁹⁵ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 3/48, conc. range: 1.5–1.8 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴

AFLATOXIN G₁

incidence: 1/37, conc.: 3.8 µg/kg, sample year: unknown, country: Spain¹³⁹⁵ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 3/37, conc. range: 1.6–2.7 µg/kg, Ø conc.: 2.1 µg/kg, sample year: unknown, country: Spain¹³⁹⁵ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 8/48, conc. range: 1.3–3.8 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/48, conc. range: 3.5–11 µg/kg, sample year: 2009/2010, country: Spain¹⁵⁷⁴

Fusarium Toxins

BEAUVERICIN

incidence: 5/47, conc. range: 51,600–228,500 µg/kg, sample year: unknown, country: Spain¹⁵⁶⁹ (5 sa co-contaminated with BEA and ENB₁; no further information available)

ENNIATIN A

incidence: 1/47, conc.: 676,500 µg/kg, sample year: unknown, country: Spain¹⁵⁶⁹

ENNIATIN A₁

incidence: 8/47, conc. range: 32,200–4,440,00 µg/kg, sample year: unknown, country: Spain¹⁵⁶⁹

ENNIATIN B

incidence: 1/47, conc.: 44,800 µg/kg, sample year: unknown, country: Spain¹⁵⁶⁹

ENNIATIN B₁

incidence: 5/47, conc. range: 21,600–346,000 µg/kg, sample year: unknown, country: Spain¹⁵⁶⁹ (5 sa co-contaminated with BEA and ENB₁; no further information available)

Nut (walnuts) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence 2/12, conc. range: 5 µg/kg, sample year: 1982–1984, country: UK²⁴, sa from India

incidence 3*/12, conc. range: 5–500,000 µg/kg, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 6?/560, conc. range: <0.4–0.2 µg/kg?, Ø conc.: 0.3 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 1/14, conc.: 8 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 3/9, conc. range: 15–110 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 6/20, conc. range: ≤2,500 µg/kg, Ø conc.: 360 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco

incidence: 21/48, conc. range: 0.14–0.32 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 1/3, conc.: 13.5 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 6/24, conc. range: 3–28 µg/kg, Ø conc.: 22.1 µg/kg, sample year: 2001/2002, country: Turkey¹⁵⁷⁵

incidence: 7/40, conc. range: tr–1.3 µg/kg, sample year: 1972, country: USA¹⁵⁷⁹ (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 6?/560, conc. range: <0.3 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 1/14, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 2/9, conc. range: 12–85 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 12/48, conc. range: 0.02–0.70 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 1/3, conc.: 3.63 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 14/40, conc. range: <LOQ–10 µg/kg, sample year: 1972, country: USA¹⁵⁷⁹ (6 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂, 7 sa contaminated solely with AFB₂)

AFLATOXIN G₁

incidence: 6?/560, conc. range: <0.4 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

incidence: 1/14, conc.: 4 µg/kg, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 2/9, conc. range: 10–75 µg/kg, Ø conc.: 42.55 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 8/48, conc. range: 0.36–0.83 µg/kg, sample year: unknown, country: China⁹⁷²

AFLATOXIN G₂

incidence: 1/14, conc.: tr, sample year: 1973, country: Norway¹⁹⁸, sa imported (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/9, conc.: 65 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 10/48, conc. range: 0.07–0.12 µg/kg, sample year: unknown, country: China⁹⁷²

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 10/156, conc. range: 5.0–9.9 µg/kg (7 sa), 10.0–14.9 µg/kg (1 sa), 20.0–24.9 µg/kg (1 sa), >25.0 µg/kg (1 sa), sample year: 1970–1975, country: Canada⁵⁹

incidence: 15/20, conc. range: 15–25 µg/kg, sample year: 1991, country: Egypt⁴⁹⁰

incidence: 4/10*, conc. range: 1.5–13.5 µg/kg, Ø conc.: 6.45 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *walnuts with shell

incidence: 7/10*, conc. range: 0.8–10.8 µg/kg, Ø conc.: 3.43 µg/kg, sample year: 2009, country: Pakistan¹⁵³², *walnuts without shell

AFLATOXINS (TOTAL)

incidence: 1/2, conc.: 5.34, sample year: unknown, country: Poland¹¹⁰, sa imported?

incidence: 6/20, conc. range: $\leq 4,320$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 730 $\mu\text{g}/\text{kg}$, sample year: 2006,
 country: Spain/Morocco⁹⁴¹, sa from
 Morocco

AFLATOXINS

incidence: 2/27, conc. range: 29–41 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 35 $\mu\text{g}/\text{kg}$, sample year: 1986,
 country: USA¹⁹⁷

incidence: 2/4, conc. range: ≤ 8 $\mu\text{g}/\text{kg}$, \emptyset
 conc.: 4 $\mu\text{g}/\text{kg}$, sample year: 1986, country:
 USA¹⁹⁷, sa imported

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 7/20, conc. range: 0.04–0.23 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 0.11 $\mu\text{g}/\text{kg}$, sample year: 2005,
 country: Morocco⁸⁵⁹

Fusarium Toxins

ZEARALENONE

incidence: 1/20, conc.: 125 $\mu\text{g}/\text{kg}$, sample
 year: 1991, country: Egypt⁴⁹⁰

Penicillium Toxins

RUBRATOXIN

incidence: 1/9, conc.: 210 $\mu\text{g}/\text{kg}$, sample
 year: 1983–1985, country: India⁸⁰²

Nut butter see Butter

Nut cereals may contain the following
 mycotoxins:

Aspergillus Toxins

AFLATOXINS (TOTAL)

incidence: 1/1, conc.: 2.29 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: Poland¹¹⁰, sa
 imported

Nut cocktail may contain the
 following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1*, conc.: 0.29 $\mu\text{g}/\text{kg}$, sample
 year: 2002, country: Spain²⁶¹,
 sa imported? (1 sa co-contaminated
 with AFB₁ and AFG₁)

AFLATOXIN G₁

incidence: 1/1*, conc.: 0.47 $\mu\text{g}/\text{kg}$, sample
 year: 2002, country: Spain²⁶¹,
 sa imported? (1 sa co-contaminated
 with AFB₁ and AFG₁)

Nut product see Product (nut products)

Nuts and seeds may contain the
 following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 14/17, conc. range: 4–74 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 24 $\mu\text{g}/\text{kg}$, sample year: unknown,
 country: USA/Egypt¹⁶², sa from Egypt
 incidence: 87/617*, conc. range: >0.2 –
 2.0 $\mu\text{g}/\text{kg}$ (38 sa), >2.0 –10.0 $\mu\text{g}/\text{kg}$ (26 sa),
 >10.0 –20.0 $\mu\text{g}/\text{kg}$ (8 sa), >20.0 –50.0 $\mu\text{g}/\text{kg}$
 (6 sa), >50.0 $\mu\text{g}/\text{kg}$ (8 sa), sample year:
 2007, country: Turkey¹⁵⁶⁰, *commercial
 Turkish foods

incidence: 139/573*, conc. range: >0.2 –
 2.0 $\mu\text{g}/\text{kg}$ (71 sa), >2.0 –10.0 $\mu\text{g}/\text{kg}$ (30 sa),
 >10.0 –20.0 $\mu\text{g}/\text{kg}$ (6 sa), >20.0 –50.0 $\mu\text{g}/\text{kg}$
 (18 sa), >50.0 $\mu\text{g}/\text{kg}$ (14 sa), sample year:
 2008, country: Turkey¹⁵⁶⁰, *commercial
 Turkish foods

incidence: 26/122*, conc. range: >0.2 –
 2.0 $\mu\text{g}/\text{kg}$ (11 sa), >2.0 –10.0 $\mu\text{g}/\text{kg}$ (6 sa),
 >10.0 –20.0 $\mu\text{g}/\text{kg}$ (1 sa), >20.0 –50.0 $\mu\text{g}/\text{kg}$
 (5 sa), >50.0 $\mu\text{g}/\text{kg}$ (3 sa), sample year:
 2009, country: Turkey¹⁵⁶⁰, *commercial
 Turkish foods

AFLATOXIN

incidence: 1/23, conc.: 64 $\mu\text{g}/\text{kg}$, sample
 year: 1967–1969, country: USA³²,
 sa from Philippines

Oat may contain the following
 mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/30, conc. range: 1–10 $\mu\text{g}/\text{kg}$
 (2 sa), >10 –20 $\mu\text{g}/\text{kg}$ (1 sa), sample
 year: during the 1990s, country:
 Cuba⁴⁷

incidence: 3/31, conc. range: ≤ 2.5 $\mu\text{g}/\text{kg}$, sample year: 1985–1987, country: USSR¹⁹¹, sa imported

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/4, conc. range: 0.21–0.29 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.25 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹¹⁵

incidence: 4/10, conc. range: 0.12–1.94 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

STERIGMATOCYSTIN

incidence: 6/25, conc. range: 0.5–25 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Latvia⁸¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/4, conc.: 0.07 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹¹⁵

incidence: 21/50*, conc. range: 0.05–4.9 $\mu\text{g}/\text{kg}$ (20 sa), 5.6 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1986–1992, country: Denmark⁶²⁵, *conventional

incidence: 6/17*, conc. range: 0.05–4.9 $\mu\text{g}/\text{kg}$ (maximum: 4.2 $\mu\text{g}/\text{kg}$), sample year: 1986–1992, country: Denmark⁶²⁵, *organic

incidence: 13/25*, conc. range: 0.05–4.9 $\mu\text{g}/\text{kg}$ (maximum: 4.6 $\mu\text{g}/\text{kg}$), sample year: 1986–1992, country: Denmark⁶²⁵, sa imported, *conventional

incidence: 0/0*, no sa investigated, sample year: 1986–1992, country: Denmark⁶²⁵, *organic

incidence: 16/56, conc. range: 1–5 $\mu\text{g}/\text{kg}$ (16 sa, maximum: 3.8 $\mu\text{g}/\text{kg}$), sample year: 1990, country: UK⁶³⁶, sa from UK and different countries?

incidence: 2/34*, conc. range: 1.4–56.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 29 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy⁶⁶⁵, *ncac

incidence: 24/30, conc. range: ≤ 0.140 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰

incidence: 1/46*, conc.: 80 $\mu\text{g}/\text{kg}$, year: unknown, country: UK⁷⁶¹, *ncac

incidence: 11/40, conc. range: LOD/LOQ–4.9 $\mu\text{g}/\text{kg}$ (10 sa), 5.8 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1990, country: EU¹⁰³⁴, sa from Norway

incidence: 2/3, conc. range: LOD/LOQ–4.9 $\mu\text{g}/\text{kg}$ (maximum: 0.3 $\mu\text{g}/\text{kg}$), sample year: 1993, country: EU¹⁰³⁴, sa from Norway

incidence: 2/3, conc. range: LOD/LOQ–4.9 $\mu\text{g}/\text{kg}$ (1 sa), 10.3 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1994, country: EU¹⁰³⁴, sa from Norway

incidence: 84/84, conc. range: 2.0–72 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Poland¹¹⁵⁶

incidence: 1/6, conc.: 2.50 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Portugal/Spain¹¹⁸¹, sa from Portugal

incidence: 3/6*, conc. range: 0.53–1.95 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.3 $\mu\text{g}/\text{kg}$, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (3 sa co-contaminated with DON, NIV, and OTA)

incidence: 2/10, conc. range: 0.05–0.09 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.07 $\mu\text{g}/\text{kg}$, sample year: unknown, country: China¹⁵⁵⁴

incidence: 7/23, conc. range: 0.1–5 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Sweden¹⁵⁶⁵

incidence: 3/10, conc. range: 0.1–0.2 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

Fusarium Toxins

BEAUVERICIN

incidence: 1/1*, conc.: 18 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

DEOXYNIVALENOL

incidence: 7/7, conc. range: 5–100 $\mu\text{g}/\text{kg}$ (6 sa), 500–1,000 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA,

2 sa co-contaminated with DON and 3-AcDON, 2 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with DON and NIV, 1 sa co-contaminated with DON and ZEA)

incidence: 2/5, conc. range: 1,300–2,600 µg/kg, Ø conc.: 1,900 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 21/21, conc. range: 7–861 µg/kg, Ø conc.: 168 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 106/134*, conc. range: 30–62,050 µg/kg, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac

incidence: 4/4*, conc. range: 270–4,200 µg/kg, Ø conc.: 1,892.5 µg/kg, sample year: October/November 1993, country: Norway/Germany⁴⁶⁵, sa from Norway, *ncac

incidence: 1/5*, conc.: 30 µg/kg, sample year: spring 1994, country: Norway/Germany⁴⁶⁵, sa from Norway, *ncac

incidence: 102/178*, conc. range: >20–849 µg/kg, Ø conc.: 104 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 6/6*, conc. range: 28–11,000 µg/kg, Ø conc.: 2,260 µg/kg, sample year: 1993–1994, country: Finland⁴⁶⁷, *ncac (1 sa co-contaminated with DON, 3-AcDON, NIV, and T-2, 5 sa co-contaminated solely with DON)

incidence: 3/3* **, conc. range: 4–141 µg/kg, Ø conc.: 72.3 µg/kg, sample year: 1993–1994, country: Finland⁴⁶⁷, *ncac, **oat/barley mixture

incidence: 2/3, conc. range: 18–25 µg/kg, Ø conc.: 22 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 5/23*, Ø conc.: 115 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 3/3*, conc. range: 56–147 µg/kg, Ø conc.: 110 µg/kg, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (3 sa co-contaminated with DON, NIV, and ZEA)

incidence: 4/10* **, Ø conc.: 136 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa *from Germany, **ncac

incidence: 4/4, conc. range: 5–50 µg/kg (3 sa), 50–100 µg/kg (1 sa), sample year: 1998?, country: Finland⁷⁶⁵

incidence: ?/14, conc. range: ≤2,380 µg/kg, Ø conc.: 250 µg/kg*, sample year: unknown, country: Germany⁹⁴⁵, *of pos sa?

incidence: 2/5*, conc. range: ≤40 µg/kg, Ø conc.: 20 µg/kg, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac

incidence: 16/19, conc. range: ≤30 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 35/51*, conc. range: ≤706 µg/kg, sample year: 1997, country: Finland¹¹⁴⁶, *for food and feed

incidence: 17/52*, conc. range: ≤896 µg/kg, sample year: 1998, country: Finland¹¹⁴⁶, *for food and feed

incidence: 37/59*, conc. range: ≤660 µg/kg, sample year: 1999, country: Finland¹¹⁴⁶, *for food and feed

incidence: 6/6*, conc. range: 1–48 µg/kg, Ø conc.: 28 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (3 sa co-contaminated with DON, NIV, and OTA, 3 sa co-contaminated with DON and NIV)

incidence: 5/5*, conc. range: 122–204 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 8/9*, conc. range: tr–131 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 9/13* **, conc. range: 23–299 µg/kg, Ø conc.: 143.6 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (5 sa co-contaminated with DON, NIV and ZEA, 4 sa co-contaminated with DON and NIV)

incidence: 3/5*, conc. range: 15–298 µg/kg, Ø conc.: 111 µg/kg, sample year: 2004, country: UK¹³⁹⁴, sa from England, Ireland,

Scotland, and Sweden, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and T-2TRI)

incidence: 5/7*, conc. range: 20–1,230 µg/kg, Ø conc.: 452 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, HT-2, NIV, and T-2)

incidence: 1/4*, conc.: 64 µg/kg, sample year: unknown, country: Austria¹⁴⁰⁴, *ncac

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring oat, **conventional

incidence: 5/5* **, conc. range: 103.10–111.70 µg/kg, sample year: 2005, Ø conc.: 108.54 µg/kg, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring oat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring oat, **conventional

incidence: 5/5* **, conc. range: 210.90–314.60 µg/kg, sample year: 2006, Ø conc.: 270.20 µg/kg, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring oat, **organic

incidence: 1/6*, conc.: 46 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and α-ZEL)

incidence: 6/10, conc. range: 22–71 µg/kg, Ø conc.: 42.5 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (3 sa co-contaminated with DON, HT-2, and T-2, 3 sa co-contaminated with DON and HT-2)

incidence: 1/2*, conc.: 24 µg/kg, sample year: unknown, country: China/Belgium¹⁵⁴⁴, *ncac

incidence: 3/10, conc. range: 22.7–100.2 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

3-ACETYLDEOXYNIVALENOL

incidence: 2/7, conc. range: 5–100 µg/kg, sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA, 2? sa co-contaminated with DON and 3-AcDON)

incidence: 12/21, conc. range: 6–219 µg/kg, Ø conc.: 67 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 1/6*, conc.: 700 µg/kg, sample year: 1993–1994, country: Finland⁴⁶⁷, *ncac (1 sa co-contaminated with DON, 3-AcDON, NIV, and T-2)

incidence: 3/19, conc. range: ≤1.9 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 3/51*, conc. range: ≤219 µg/kg, sample year: 1997, country: Finland¹¹⁴⁶, *for food and feed

incidence: 5/52*, conc. range: ≤310 µg/kg, sample year: 1998, country: Finland¹¹⁴⁶, *for food and feed

incidence: 1/5*, conc.: 40 µg/kg, sample year: 2004, country: UK¹³⁹⁴, sa from England, Ireland, Scotland, and Sweden, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA)

incidence: 3/7*, conc. range: 16–60 µg/kg, Ø conc.: 42.7 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland, *for food and feed (1 sa co-contaminated with DON,

3-AcDON, HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, T-2TRI, and ZEA)

incidence: 6/6*, conc. range: ≤ 116 $\mu\text{g}/\text{kg}$, \emptyset conc.: 50.6 $\mu\text{g}/\text{kg}$, sample year:

2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, ZEA4S, α -ZEL, β -ZEL, and β -ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α -ZEL, and β -ZEL,

1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and α -ZEL, 1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α -ZEL, and β -ZEL, 2 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, and T-2)

15-ACETYLDEOXYNIVALENOL

incidence: 8/19, conc. range: ≤ 0.75 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

incidence: 6/6*, conc. range: ≤ 27 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, ZEA4S, α -ZEL, β -ZEL, and β -ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α -ZEL, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and α -ZEL, 1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α -ZEL, and β -ZEL, 2 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, and T-2)

DEOXYNIVALENOL-3-D-GLUCOSIDE

incidence: 4/6*, conc. range: 28–97 $\mu\text{g}/\text{kg}$, \emptyset conc.: 41 $\mu\text{g}/\text{kg}$, sample year: 2010/2011,

country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α -ZEL, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and α -ZEL, 2 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, and T-2)

ENNIATIN A₁

incidence: 1/1*, conc.: tr, sample year: 2002, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

ENNIATIN B

incidence: 1/1*, conc.: 23 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

ENNIATIN B₁

incidence: 1/1*, conc.: tr, sample year: 2002, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

FUMONISIN B₁

incidence: 3/10, conc. range: 49.5–177.3 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₂

incidence: 1/10, conc.: 57.3 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 14/982*, conc. range: ≤ 700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 300 $\mu\text{g}/\text{kg}$, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac
incidence: 1/19, conc.: 0.18 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

HT-2 TOXIN

incidence: 4/7, conc. range: 10–100 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA, 3 sa co-contaminated with DON and HT-2)

incidence: 2/21, conc. range: 33–44 µg/kg, Ø conc.: 39 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 125/178*, conc. range: >20–880 µg/kg, Ø conc.: 115 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 24/99*, conc. range: 10–47 µg/kg, Ø conc.: 21 µg/kg, sample year: 1997, country: Poland⁵¹⁰, *ncac (5 sa co-contaminated with DAS, HT-2, and T-2, 2 sa co-contaminated with DAS and HT-2, 3 sa co-contaminated with HT-2 and T-2, 14 sa contaminated solely with HT-2)

incidence: 3/3, conc. range: 5–23 µg/kg, Ø conc.: 13 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

incidence: 5/5*, conc. range: 30–146 µg/kg, Ø conc.: 66 µg/kg, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac

incidence: 19/19, conc. range: ≤34 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 2/51*, conc. range: ≤507 µg/kg, sample year: 1997, country: Finland¹¹⁴⁶, *for food and feed

incidence: 1/52*, conc.: 116 µg/kg, sample year: 1998, country: Finland¹¹⁴⁶, *for food and feed

incidence: 4/59*, conc. range: ≤240 µg/kg, sample year: 1999, country: Finland¹¹⁴⁶, *for food and feed

incidence: 5/5*, conc. range: 193–504 µg/kg, Ø conc.: 307.2 µg/kg, sample year: 2004, country: UK¹³⁹⁴, **sa from England, Ireland, Scotland, and Sweden, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and ZEA)

incidence: 7/7*, conc. range: 115–2,570 µg/kg, Ø conc.: 932.6 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with HT-2, NEO, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NIV, T-2, and T-2TRI)

incidence: 6/6*, conc. range: ≤118 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL, 2 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, and T-2)

incidence: 10/10, conc. range: 11–52 µg/kg, Ø conc.: 25.9 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (3 sa co-contaminated with DON, HT-2, and T-2, 3 sa co-contaminated with DON and HT-2, 2 sa co-contaminated with HT-2 and T-2, 2 sa contaminated solely with HT-2)

incidence: 1/10, conc.: 25.2 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

MONILIFORMIN

incidence: 1/1*, conc.: 84 µg/kg, sample year: 2002, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

incidence: 3/3* **, conc. range: 15,700–38,300 µg/kg, Ø conc.: 24,060 µg/kg, sample year: probably 1985–1989, country: UK/Poland⁵²⁴, sa from Poland, *ncac, ***Fusarium* damaged kernels

incidence: 1/21*, conc.: 70 µg/kg, sample year: 2000, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 3/26*, conc. range: tr–88 µg/kg, sample year: 2001, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 19/26*, conc. range: tr–210 µg/kg, sample year: 2002, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 2/3, conc. range: 5.4–8.7 µg/kg, Ø conc.: 7.05 µg/kg, sample year: unknown, country: Germany¹⁴⁶¹

NEOSOLANIOL

incidence: 15/19, conc. range: ≤0.9 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 3/5*, conc. range: 13–17 µg/kg, Ø conc.: 15 µg/kg, sample year: 2004, country: UK¹³⁹⁴, sa from England, Ireland, Scotland, and Sweden, *for food and feed (1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and ZEA)

incidence: 4/7*, conc. range: 19–48 µg/kg, Ø conc.: 28.3 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, T-2, and T-2TRI)

NIVALENOL

incidence: 2/7, conc. range: 15–100 µg/kg, sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA, 1 sa co-contaminated with DON and NIV)

incidence: 3/21, conc. range: 48–83 µg/kg, Ø conc.: 70 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 81/982*, conc. range: ≤667 µg/kg, Ø conc.: 130 µg/kg, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac

incidence: 18/178*, conc. range: >20–211 µg/kg, Ø conc.: 56 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 1/6*, conc.: 28 µg/kg, sample year: 1993–1994, country: Finland⁴⁶⁷, *ncac (1 sa co-contaminated with DON, 3-AcDON, NIV, and T-2)

incidence: 6/23*, Ø conc.: 438 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 3/3*, conc. range: 17–39 µg/kg, Ø conc.: 27 µg/kg, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (3 sa co-contaminated with DON, NIV, and ZEA)

incidence: 1/10*, conc.: 1,464 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 4/7*, Ø conc.: 16 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 5/5*, conc. range: ≤191 µg/kg, Ø conc.: 112 µg/kg, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac

incidence: 5/19, conc. range: ≤8.7 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 7/51*, conc. range: ≤575 µg/kg, sample year: 1997, country: Finland¹¹⁴⁶, *for food and feed

incidence: 5/52*, conc. range: ≤530 µg/kg, sample year: 1998, country: Finland¹¹⁴⁶, *for food and feed

incidence: 37/59*, conc. range: ≤423 µg/kg, sample year: 1999, country: Finland¹¹⁴⁶, *for food and feed

incidence: 6/6*, conc. range: 12–502 µg/kg, Ø conc.: 130.7 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac

(3 sa co-contaminated with DON, NIV, and OTA, 3 sa co-contaminated with DON and NIV)

incidence: 13/13* **, conc. range:

16–400 µg/kg, Ø conc.: 164.8 µg/kg,

sample year: unknown, country: Croatia/

Japan¹³²³, sa from Croatia, *ncac, **sa

from EN regions (5 sa co-contaminated

with DON, NIV and ZEA, 4 sa

co-contaminated with DON and NIV, 2 sa

co-contaminated with NIV and ZEA, 2 sa

contaminated solely with NIV)

incidence: 5/5*, conc. range: 23–142 µg/kg,

Ø conc.: 86 µg/kg, sample year: 2004,

country: UK¹³⁹⁴, sa from England, Ireland,

Scotland, and Sweden, *for food and feed

(1 sa co-contaminated with DON,

3-AcDON, HT-2, NIV, T-2, and ZEA, 1 sa

co-contaminated with DON, HT-2, NEO,

NIV, T-2, and ZEA, 1 sa co-contaminated

with DON, HT-2, NIV, T-2, and T-2TRI, 1

sa co-contaminated with HT-2, NEO, NIV,

T-2, and T-2TRI, 1 sa co-contaminated

with HT-2, NEO, NIV, T-2, and ZEA)

incidence: 6/7*, conc. range: 36–159 µg/kg,

Ø conc.: 88.7 µg/kg, sample year: 2005,

country: UK¹³⁹⁴, sa from England, Finland,

and Scotland, *for food and feed (1 sa

co-contaminated with DON, 3-AcDON,

HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1

sa co-contaminated with DON, 3-AcDON,

HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa

co-contaminated with DON, 3-AcDON,

HT-2, NIV, T-2, T-2TRI, and ZEA, 1 sa

co-contaminated with DON, HT-2, NEO,

NIV, T-2, and T-2TRI, 1 sa

co-contaminated with DON, HT-2, NIV,

and T-2, 1 sa co-contaminated with HT-2,

NIV, T-2, and T-2TRI)

MONOACETOXYSCIRPENOL

incidence: 17/19, conc. range: ≤0.27 µg/

kg, sample year: 2005/2006, country:

Germany¹¹²²

DIACETOXYSCIRPENOL

incidence: 12/99*, conc. range: 10–118 µg/

kg, Ø conc.: 23 µg/kg, sample year:

1997, country: Poland⁵¹⁰, *ncac (5 sa

co-contaminated with DAS, HT-2, and T-2,

2 sa co-contaminated with DAS and HT-2,

2 sa co-contaminated with DAS and T-2, 3

sa contaminated solely with DAS)

incidence: 9/19, conc. range: ≤0.25 µg/kg,

sample year: 2005/2006, country:

Germany¹¹²²

SCIRPENTRIOL

incidence: 8/99, conc. range: 10–43 µg/kg,

Ø conc.: 21 µg/kg, sample year: 1996/1997,

country: Poland¹¹⁸⁷

incidence: 12/12*, conc. range: 30–760 µg/

kg, Ø conc.: 255 µg/kg, sample year:

1996/1997, country: Poland¹¹⁸⁷,

*scabby oats

T-2 TOXIN

incidence: 1/7, conc.: 23 µg/kg, sample

year: 1998, country: Finland²¹⁹

(1 sa co-contaminated with DON,

3-AcDON, HT-2, NIV, T-2, and ZEA)

incidence: 2/21, conc. range: 45–73 µg/kg,

Ø conc.: 59 µg/kg, sample year: 1987/1988,

country: Finland⁴⁵⁵

incidence: 53/178*, conc. range: >20–

380 µg/kg, Ø conc.: 60 µg/kg, sample year:

1996–1998, country: Norway⁴⁶⁶, *for food

and feed

incidence: 1/6*, conc.: 18 µg/kg, sample

year: 1993–1994, country: Finland⁴⁶⁷,

*ncac (1 sa co-contaminated with DON,

3-AcDON, NIV, and T-2)

incidence: 15/99*, conc. range: 10–703 µg/

kg, Ø conc.: 60 µg/kg, sample year: 1997,

country: Poland⁵¹⁰, *ncac (5 sa

co-contaminated with DAS, HT-2,

and T-2, 2 sa co-contaminated with DAS

and T-2, 3 sa co-contaminated with

HT-2 and T-2, 5 sa contaminated solely

with T-2)

incidence: 2/3, conc. range: 6–11 µg/kg,

Ø conc.: 8 µg/kg, sample year: 2000/2001,

country: Germany⁵²⁰

incidence: ?/14, conc. range: ≤266.0 µg/kg,

Ø conc.: 34 µg/kg*, sample year:

unknown, country: Germany⁹⁴⁵,

*of pos sa?

incidence: 23/42, conc. range: 1.0–500.0 µg/kg, sample year: 1980–1985, country: Japan⁹⁸³, sa from Finland, Germany, Italy, Nepal, and Portugal; for detailed information please see the article

incidence: 3/5*, conc. range: ≤1,454 µg/kg, Ø conc.: 526 µg/kg, sample year: 1999, country: Lithuania¹⁰⁹⁶, *nca

incidence: 19/19, conc. range: ≤12 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 2/51*, conc. range: ≤349 µg/kg, sample year: 1997, country: Finland¹¹⁴⁶, *for food and feed

incidence: 5/5*, conc. range: 17.2–121.5 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 5/5*, conc. range: 10.8–41.8 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 5/5*, conc. range: 50–154 µg/kg, Ø conc.: 80.2 µg/kg, sample year: 2004, country: UK¹³⁹⁴, sa from England, Ireland, Scotland, and Sweden, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and ZEA)

incidence: 7/7*, conc. range: 28–958 µg/kg, Ø conc.: 301.4 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, HT-2, NEO,

NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with HT-2, NEO, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NIV, T-2, and T-2TRI)

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring oat, **conventional

incidence: 5/5* **, conc. range: 17.20–45.90 µg/kg, Ø conc.: 30.76 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring oat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring oat, **conventional

incidence: 5/5* **, conc. range: 21.50–50.20 µg/kg, Ø conc.: 33.24 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring oat, **organic

incidence: 6/6*, conc. range: ≤34 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL, 2 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, and T-2)

incidence: 5/10, conc. range: <LOQ–13 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (3 sa co-contaminated with DON, HT-2, and T-2, 2 sa co-contaminated with HT-2 and T-2)

incidence: 1/10, conc.: 39.5 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

T-2 TOXIN + HT-2 TOXIN

incidence: 62/62*, conc. range: 2–1,416 µg/kg, Ø conc.: 443.1 µg/kg, sample year: 2005–2008, country: Sweden⁸⁶⁰, *ncac

T-2 TETRAOL

incidence: 18/19, conc. range: ≤24 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TRIOL

incidence: 10/19, conc. range: ≤1.5 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 2/5*, conc. range: 13–18 µg/kg, Ø conc.: 15.5 µg/kg, sample year: 2004, country: UK¹³⁹⁴, sa from England, Ireland, Scotland, and Sweden, *for food and feed (1 sa co-contaminated with DON, HT-2, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and T-2TRI)

incidence: 6/7*, conc. range: 10–122 µg/kg, Ø conc.: 35.5 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NEO, T-2, and T-2TRI, 1 sa co-contaminated with HT-2, NIV, T-2, and T-2TRI)

α-ZEARALENOL

incidence: 4/6*, conc. range: ≤68 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA,

and α-ZEL, 1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL)

β-ZEARALENOL

incidence: 3/6*, conc. range: ≤46 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL, 1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL)

β-ZEARALENOL-4-GLUCOSIDE

incidence: 1/6*, conc.: 20 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contamination with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZELG)

ZEARALENONE

incidence: 1/4, conc.: 2.8 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

incidence: 1/7, conc.: 2–8 µg/kg, sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA)

incidence: 3/5, conc. range: 9–22 µg/kg, Ø conc.: 16 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 3/21, conc. range: 30–86 µg/kg, Ø conc.: 63 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 10/29*, conc. range: ≤90 µg/kg, sample year: 1986–1989, country: New Zealand¹⁴⁶⁸, *ncac

incidence: 10/23*, Ø conc.: 22 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 3/3*, conc. range: 16–29 µg/kg, Ø conc.: 22 µg/kg, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶,

sa from Netherlands, *ncac (3 sa co-contaminated with DON, NIV, and ZEA)

incidence: 4/10*, Ø conc.: 47 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 1/5*, conc.: 2 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Italy, *ncac

incidence: 5/7*, Ø conc.: 6 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 1/5, conc.: 1.18 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸

incidence: 3/5*, conc. range: tr–16.3 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 1/2*, conc.: 11 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 7/13* **, conc. range: 10–543 µg/kg, Ø conc.: 139.3 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (5 sa co-contaminated with DON, NIV and ZEA, 2 sa co-contaminated with NIV and ZEA)

incidence: 3/5*, conc. range: 4–22 µg/kg, Ø conc.: 10.7 µg/kg, sample year: 2004, country: UK¹³⁹⁴, sa from England, Ireland, Scotland, and Sweden, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, NEO, NIV, T-2, and ZEA, 1 sa co-contaminated with HT-2, NEO, NIV, T-2, and ZEA)

incidence: 2/7*, conc. range: 3–5 µg/kg, Ø conc.: 4 µg/kg, sample year: 2005, country: UK¹³⁹⁴, sa from England, Finland, and Scotland, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, NEO, NIV, T-2, T-2TRI, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, HT-2, NIV, T-2, T-2TRI, and ZEA)

incidence: 1/2* **, conc.: 18.4 µg/kg, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring oat, **conventional

incidence: 5/5* **, conc. range: 11.70–21.80 µg/kg, Ø conc.:

19.46 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring oat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring oat, **conventional

incidence: 5/5* **, conc. range: 23.80–50.40 µg/kg, Ø conc.: 30.08 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring oat, **organic

incidence: 4/6*, conc. range: 13–85 µg/kg, Ø conc.: 50 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, ZEA4S, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL)

ZEARALENONE-4-GLUCOSIDE

incidence: 3/6*, conc. range: <LOQ, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, β-ZEL, and β-ZEL4G, 1 sa co-contaminated with 3-AcDON, 15-AcDON, DON3G, HT-2, T-2, ZEA, ZEA4G, α-ZEL, and β-ZEL, 1 sa

co-contaminated with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, α -ZEL, and β -ZEL)

ZEARALENONE-4-SULFATE

incidence: 1/6*, conc.: 12 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contamination with 3-AcDON, 15-AcDON, HT-2, T-2, ZEA, ZEA4G, ZEA4S, α -ZEL, β -ZEL, and β -ZEL4G)

Oat bran see Bran (oat bran)

Oat flakes see Flakes (oat flakes)

Oat flour see Flour (oat flour)

Oat groats see Groats (oat groats)

Oat meal see Meal (oat meal)

Oat products see Product (oat products)

Ochra may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN G₂

incidence: 1/1*, conc.: 12,675 $\mu\text{g}/\text{kg}$, sample year: 1981, country: UK/Sudan¹¹³³, sa from Sudan, *dried ochra

Ogbono may contain the following mycotoxins:

AFLATOXIN B

incidence: 1/1, conc.: 168 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria⁴

Ground ogbono seeds served as a thickener giving the prepared soup a black coloration

Ogili-ugba may contain the following mycotoxins:

AFLATOXIN B

incidence: 1/1, conc.: 211 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria⁴

Ogili-ugba is a traditional Nigerian foodstuff made from fermented castor- and oil-bean

Ogoro may contain the following mycotoxins:

AFLATOXIN B

incidence: 2/2, conc. range: 116–118 $\mu\text{g}/\text{kg}$, \emptyset conc.: 117 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Nigeria⁴

Ogoro is the sap (fermentable) from the stalk of the male inflorescence or the immature shoot of the oil palm

Oil may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8*/56, conc. range: 0.2–0.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sudan¹¹⁵⁷, *7 unrefined sesame oils and 1 unrefined groundnut oil contaminated incidence: 1*/16, conc.: 3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/France¹³²⁰, sa from India, *coconut oil

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/4*, conc.: 0.1 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁷³², *sa of chilli and almond oil

Fusarium Toxins

ZEARALENONE

incidence: 1/4*, conc.: 5.4 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁷³², *sa of chilli and almond oil

Oil (coconut oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 7/10*, conc. range: <50 $\mu\text{g}/\text{kg}$ (1 sa), 50–250 $\mu\text{g}/\text{kg}$ (3 sa), 250–1,000 $\mu\text{g}/\text{kg}$ (1 sa), >1,000 $\mu\text{g}/\text{kg}$ (2 sa), sample year: unknown, country: Ceylon⁹, *crude oil

incidence: 10/10, conc. range: 8.33–33.33 µg/kg, sample year: 1982, country: India¹²⁰⁸

incidence: 95?/95, conc. range: 0 to <50 µg/kg (52 sa), 50–250 µg/kg (41 sa), 250–1,000 µg/kg (2 sa), sample year: unknown, country: Sri Lanka¹³⁸⁷

AFLATOXIN B₂

incidence: 2/10, conc. range: 16.66 µg/kg, sample year: 1982, country: India¹²⁰⁸

AFLATOXIN G₁

incidence: 2/10, conc. range: 8.3 µg/kg, sample year: 1982, country: India¹²⁰⁸

Oil (mustard oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 33/100, conc. range: 55–87 µg/kg, sample year: 1984/1985, country: India¹⁵⁴

Oil (olive oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 36/50, conc. range: 0.0028–0.0047 µg/kg (11 sa), 0.0052–0.0094 µg/kg (20 sa), 0.0137–0.0157 µg/kg (4 sa), 0.0463 µg/kg (1 sa), sample year: 1995–1998, country: Greece⁴⁰

incidence: 14/16*, conc. range: 1–7.5 µg/l, Ø conc.: 3.6 µg/l, sample year: unknown, country: France¹⁸⁷, *sa from Greece (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 5 sa co-contaminated with AFB₁ and AFB₂, 4 sa contaminated solely with AFB₁)

incidence: 3/30*, conc. range: 0.5–2.4 µg/kg, Ø conc.: 1.3 µg/kg, sample year: unknown, country: Italy⁸⁶², sa from Italy and Morocco, *virgin oil (3 sa co-contaminated with AFB₁ and OTA)

incidence: 9/50*, conc. range: tr–0.06 µg/kg, sample year: 2001, country: Greece⁸⁶⁴, *virgin oil

AFLATOXIN B₂

incidence: 10/16*, conc. range: 1–5.5 µg/kg, Ø conc.: 1.8 µg/kg, sample year: unknown, country: France¹⁸⁷, *sa from Greece (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 5 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 5/16*, conc. range: 1–2.5 µg/kg, Ø conc.: 1.6 µg/kg, sample year: unknown, country: France¹⁸⁷, *sa from Greece (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 5/16*, conc. range: 1–5 µg/kg, Ø conc.: 2.2 µg/kg, sample year: unknown, country: France¹⁸⁷, *sa from Greece (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 24/30*, conc. range: 0.1–17.0 µg/kg, Ø conc.: 2.09 µg/kg, sample year: unknown, country: Italy⁸⁶², sa from Italy and Morocco, *virgin oil (3 sa co-contamination with AFB₁ and OTA)

incidence: 44/50*, conc. range: DL–0.100 µg/kg (9 sa), 0.100–0.200 µg/kg (15 sa), 0.200–0.500 µg/kg (10 sa), >0.500 µg/kg (10 sa, maximum: 1.03 µg/kg), country: Greece⁸⁶⁴, *virgin oil

Oil (palm oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: ?/8*, conc. range: 324–347 µg/kg, sample year: 1977, country: Nigeria¹⁷⁷, *unrefined palm oil

Oil (peanut oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/16*, conc. range: 8–16 µg/l, sample year: unknown, country: Malaya³⁷, *9 refined and 7 unrefined oils (5 of them contaminated)

incidence: 3/19, conc. range: 6–25 µg/kg, Ø conc.: 16 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 4?/6, conc. range: 0.7 µg/l, sample year: unknown, country: Japan¹⁸⁴

incidence: 8/17, conc. range: 10–70 µg/kg, Ø conc.: 31.3 µg/kg, sample year: unknown, country: Taiwan¹⁹⁰

incidence: 20/30, conc. range: 0.1–52.5 µg/kg, Ø conc.: 7.8 µg/kg, sample year: unknown, country: USA/China²⁰⁷, sa from China

incidence: 20/30*, conc. range: 4.43–2,660 µg/l, sample year: unknown, country: India⁶⁶⁷, *crude peanut oil

incidence: 11/21, conc. range: 2.9–36.1 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

incidence: 15/69, conc. range: 3–175 µg/kg, sample year: unknown, country: UK/France¹³²⁰, sa from India (7 sa co-contaminated with AFB₁ and AFB₂, 8 sa contaminated solely with AFB₁)

AFLATOXIN B₂

incidence: 2?/19, conc.: 6 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 4?/6, conc. range: 0.1 µg/l, sample year: unknown, country: Japan¹⁸⁴

incidence: 14/21, conc. range: 0.02–3.6 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

incidence: 7/69, conc. range: pr, sample year: unknown, country: UK/France¹³²⁰, sa from India (7 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 5/16, conc. range: ~8–16 µg/l, sample year: unknown, country: Malaya³⁷, *9 refined and 7 unrefined oils (5 of them contaminated)

incidence: 2/19, conc. range: 11–19 µg/kg, Ø conc.: 15 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 4?/6, conc. range: 0.1 µg/l, sample year: unknown, country: Japan¹⁸⁴

incidence: 20/21, conc. range: 3.1–64.1 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN G₂

incidence: 1/19, conc.: 11 µg/kg, sample year: 1977/1978, country: Taiwan¹¹⁴

incidence: 19/21, conc. range: 0.5–60.7 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN

incidence: 543/1,209, conc. range: <100 µg/l (232 sa), >100 µg/l (311 sa), maximum: 5,000 µg/l, sample year: 1974–1975, country: India⁶³

incidence: 48/50*, conc. range: ≤1,009 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from high incidence area of liver cancer

incidence: 51/51*, conc. range: ≤102 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from low incidence area of liver cancer

AFLATOXINS

incidence: 5/8*, conc. range: ≤310 µg/l, Ø conc.: 246 µg/l, sample year: 1986, country: USA¹⁹⁷, *crude peanut oil

Oil (plant oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 39/39, conc. range: 0.2–114.4 µg/kg, sample year: unknown, country: China¹⁴³⁷

Oil (rapeseed oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/20*, conc.: 0.25 µg/kg, sample year: unknown, country: Spain⁸²⁷, *ncac

incidence: 16/70, conc. range: 0.3–3.75 µg/kg, Ø conc.: 1.53 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

Oil (sesame oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 13/14, conc. range: 1.9–109.2 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN B₂

incidence: 10/14, conc. range: 0.2–0.5 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN G₁

incidence: 13/14, conc. range: 10.6–100.3 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN G₂

incidence: 14/14, conc. range: 1.8–265.2 µg/kg, Ø conc.: 102.7 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/3, conc.: 0.4 µg/kg, sample year: unknown, country: UK⁷³²

Oil (soybean oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 22/73, conc. range: 0.25–4.62 µg/kg, Ø conc.: 1.10 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/3* **, conc.: 30 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (1 sa co-contaminated with DON, T-2TET, and ZEA)

T-2 TETRAOL (PRIMARILY HT-2)

incidence: 3/3* **, conc. range: 90–1,050 µg/kg, Ø conc.: 646.7 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (1 sa co-contaminated with DON, T-2TET, and ZEA, 1 sa co-contaminated with T-2TET and ZEA, 1 sa contaminated solely with T-2TET)

ZEARALENONE

incidence: 2/3* **, conc. range: 180–760 µg/kg, Ø conc.: 380 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (1 sa co-contaminated with DON, T-2TET, and ZEA, 1 sa co-contaminated with T-2TET and ZEA)

Oil (sunflower oil) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 11/19, conc. range: 5.4–71.1 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN B₂

incidence: 9/19, conc. range: 0.02–1.5 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN G₁

incidence: 18/19, conc. range: 0.2–173.4 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

AFLATOXIN G₂

incidence: 19/19, conc. range: 0.4–66.8 µg/kg, Ø conc.: 14.8 µg/kg, sample year: 2009, country: Sudan¹⁰⁷⁵

Oil seed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/20* **, conc.: 0.25 µg/kg, sample year: unknown, country: Spain⁸²⁷, *ncac, **rapeseed

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 9/80*, conc. range: 2–20 µg/kg (7 sa), >20 µg/kg (2 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac

incidence: 19/21, conc. range: 0.01–4 µg/kg (2 sa, maximum: 1.2 µg/kg), sample year: 1996–1998, country: Sweden¹⁵⁶⁵

STERIGMATOCYSTIN

incidence: 1/1* **, conc.: 40 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy rapeseed

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/1* **, conc.: 4,100 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy rapeseed

VIOMELLEIN

incidence: 1/1*, conc.: pr, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy rapeseed

VIOXANTHIN

incidence: 1/1* **, conc.: 40 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy rapeseed

XANTHOMEGNIN

incidence: 1/1* **, conc.: pr, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy rapeseed

Fusarium Toxins

ZEARELENONE

incidence: 5/64*, conc. range: 100–200 µg/kg (2 sa), >200 µg/kg (3 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac

Olive may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 1/4, conc.: 1,400 µg/kg, sample year: unknown, country: Italy³⁴⁰ (1 sa co-contaminated with ALT, AME, AOH, and TA)

ALTERNARIOL

incidence: 4/4, conc. range: 109–2,320 µg/kg, Ø conc.: 1,120 µg/kg, sample year: unknown, country: Italy³⁴⁰ (1 sa co-contaminated with ALT, AME, AOH, and TA, 1 sa co-contaminated with AME, AOH, and TA, 2 sa co-contaminated with AME and TA)

ALTERNARIOL METHYL ETHER

incidence: 4/4, conc. range: 30–2,870 µg/kg, Ø conc.: 818 µg/kg, sample year: unknown, country: Italy³⁴⁰ (1 sa co-contaminated with ALT, AME, AOH, and TA, 1 sa co-contaminated with AME, AOH, and TA, 2 sa co-contaminated with AME and TA)

TENUAZONIC ACID

incidence: 2/4, conc.: 109–262 µg/kg, Ø conc. 186.5 µg/kg, sample year: unknown, country: Italy³⁴⁰ (1 sa co-contaminated with ALT, AME, AOH, and TA, 1 sa co-contaminated with AME, AOH, and TA)

Aspergillus Toxins

AFLATOXIN B₁

incidence: 12/103*, conc. range: 5–37 µg/kg, sample year: unknown, country: Morocco¹⁸⁵, **“Greek-style” black olives

incidence: 3/6* **, conc. range: 0.6–5 µg/kg, Ø conc. 2.43 µg/kg, sample year: unknown, country: Morocco/France²⁶⁶, sa from Morocco, **“Greek-style” black olives, **sa from retailer (3 sa co-contaminated with AFB₁, CIT, and OTA)

incidence: 1/4* **, conc.: 2.4 µg/kg, sample year: unknown, country: Morocco/France²⁶⁶, sa from Morocco, **“Greek-style” black olives, **sa from

supermarket (1 sa co-contaminated with AFB₁, CIT, and OTA)

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 6/6* **, conc. range: <LOQ–0.45 µg/kg, sample year: unknown, country: Morocco/France²⁶⁶, sa from Morocco, **“Greek-style”* black olives, **sa from retailer (3 sa co-contaminated with AFB₁, CIT, and OTA, 3 sa co-contaminated with CIT and OTA)

incidence: 2/4* **, conc. range: <LOQ–0.52 µg/kg, sample year: unknown, country: Morocco/France²⁶⁶, sa from Morocco, **“Greek-style”* black olives, **sa from supermarket (1 sa co-contaminated with AFB₁, CIT, and OTA, 1 sa co-contaminated with CIT and OTA)

OCHRATOXIN A

incidence: 5/103*, conc. range: 40–80 µg/kg, sample year: unknown, country: Morocco¹⁸⁵, **“Greek-style”* black olives

incidence: 6/6* **, conc. range: <LOQ–1.02 µg/kg, sample year: unknown, country: Morocco/France²⁶⁶, sa from Morocco, **“Greek-style”* black olives, **sa from retailer (3 sa co-contaminated with AFB₁, CIT, and OTA, 3 sa co-contaminated with CIT and OTA)

incidence: 4/4* **, conc. range: <LOQ–0.68 µg/kg, sample year: unknown, country: Morocco/France²⁶⁶, sa from Morocco, **“Greek-style”* black olives, **sa from supermarket (1 sa co-contaminated with AFB₁, CIT, and OTA, 1 sa co-contaminated with CIT and OTA, 2 sa co-contaminated solely with OTA)

incidence: 4/7, conc. range: 0.3–46,830 µg/kg, sample year: unknown, country: Tunisia/France⁶³⁴, sa from Tunisia

incidence: 9/25*, conc. range: 0.62–4.8 µg/kg, Ø conc.: 1.44 µg/kg, sample year: unknown, country: Morocco/France⁹⁴², sa from Morocco, *black olives

Olive oil see Oil (olive oil)

Orange juice see Juice (orange juice)

Palm oil see Oil (palm oil)

Pancake may contain the following mycotoxins:

Claviceps Toxins

ERGOCORNINE

incidence: 2/2*, conc. range: 7.0–7.2 µg/kg, Ø conc.: 7.1 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *dried pancake (2 sa co-contaminated with ERC, ERRCR, ERM, ERS, ERT, and α-ERC)

ERGOCRISTINE

incidence: 2/2*, conc. range: 26–37 µg/kg, Ø conc.: 31.5 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *dried pancake (2 sa co-contaminated with ERC, ERRCR, ERM, ERS, ERT, and α-ERC)

ERGOMETRINE

incidence: 2/2*, conc. range: 4.7–10 µg/kg, Ø conc.: 7.35 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *dried pancake (2 sa co-contaminated with ERC, ERRCR, ERM, ERS, ERT, and α-ERC)

ERGOSINE

incidence: 2/2*, conc. range: 5.65–10 µg/kg, Ø conc.: 7.78 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *dried pancake (2 sa co-contaminated with ERC, ERRCR, ERM, ERS, ERT, and α-ERC)

ERGOTAMINE

incidence: 2/2*, conc. range: 19.5–22 µg/kg, Ø conc.: 20.8 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *dried pancake (2 sa co-contaminated with ERC, ERRCR, ERM, ERS, ERT, and α-ERC)

α-ERGOCRYPTINE

incidence: 2/2*, conc. range: 8.25–9.4 µg/kg, Ø conc.: 8.83 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *dried

pancake (2 sa co-contaminated with ERC, ERCR, ERM, ERS, ERT, and α -ERC)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 4/16*, conc. range: 700–1,500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,100 $\mu\text{g}/\text{kg}$, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *cooked pancake

FUMONISIN B₁

incidence: 6/16*, conc. range: 500–2,200 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,067 $\mu\text{g}/\text{kg}$, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *cooked pancake

FUMONISIN B₂

incidence: 2/16*, conc. range: 700–1,100 $\mu\text{g}/\text{kg}$, \emptyset conc.: 900 $\mu\text{g}/\text{kg}$, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *cooked pancake

FUMONISIN B₃

incidence: 2/16*, conc. range: 600–700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 650 $\mu\text{g}/\text{kg}$, sample year: 1996, country: China/USA⁴⁷⁸, sa from China, *cooked pancake

Paprika see Spice (paprika)

Paprika powder see Spice (paprika)

Paranuts see Nut (Brazil nuts, paranuts)

Parma ham see Products (meat)

Parmesan cheese see Cheese (Parmesan cheese)

Pasta may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 29/50*, conc. range: ≤ 1.75 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *pasta without egg

incidence: 27/84*, conc. range: ≤ 0.95 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *pasta with egg

incidence: 10/27*, conc. range: ≤ 29.770 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *whole meal pasta

incidence: 12/30*, conc. range: ≤ 0.860 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Germany⁶⁹⁰, *tortellini

incidence: 8/13*, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$ (3 sa), 0.6–1.0 $\mu\text{g}/\text{kg}$ (3 sa), 1.1–4.0 $\mu\text{g}/\text{kg}$ (2 sa, maximum: 1.6 $\mu\text{g}/\text{kg}$), sample year: unknown, country: UK⁷⁴⁰, *raw materials

incidence: 56/80, conc. range: ≤ 1.66 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.47 $\mu\text{g}/\text{kg}$, sample year: 2005–2007, country: Japan⁹⁰⁰

incidence: 51/84*, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$ (31 sa), >0.5 –1.8 $\mu\text{g}/\text{kg}$ (20 sa), sample year: 2004–2005, country: Canada¹²⁹⁵, *regular pasta

incidence: 20/21*, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$ (18 sa), >0.5 –1.0 $\mu\text{g}/\text{kg}$ (2 sa), sample year: 2004–2005, country: Canada¹²⁹⁵, *whole wheat pasta

incidence: 1/5*, conc.: 0.61 $\mu\text{g}/\text{kg}$, sample year: 2004–2005, country: Canada¹²⁹⁵, *organic pasta

incidence: 33/56*, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$ (20 sa), >0.5 $\mu\text{g}/\text{kg}$ (13 sa, maximum: 1.4 $\mu\text{g}/\text{kg}$), sample year: 2005–2006, country: Canada¹²⁹⁵, *regular pasta

incidence: 12/15*, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$ (12 sa, maximum: 0.48 $\mu\text{g}/\text{kg}$), sample year: 2005–2006, country: Canada¹²⁹⁵, *whole wheat pasta

incidence: 68/70*, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$ (23 sa), >0.5 $\mu\text{g}/\text{kg}$ (45 sa, maximum: 3.32 $\mu\text{g}/\text{kg}$), sample year: 2006–2007, country: Canada¹²⁹⁵, *regular pasta, **in a sa of spaghetti

incidence: 17/17*, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$ (3 sa), >0.5 $\mu\text{g}/\text{kg}$ (14 sa, maximum: 2.4 $\mu\text{g}/\text{kg}$), sample year: 2006–2007, country: Canada¹²⁹⁵, *whole wheat pasta

incidence: 26/27*, conc. range: 0.09–0.52 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.21 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy/Spain¹³⁴⁵, sa from Italy, *dry pasta sa for young

children (22 sa co-contaminated with DON and OTA, 4 sa contaminated solely with OTA)

Fusarium Toxins

BEAUVERICIN

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *whole-grain dry pasta, **conventional

incidence: 5/18* **, conc. range: 0.10–10.14 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *whole-grain dry pasta, **organic

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *white dry pasta, **conventional

incidence: 5/22* **, conc. range: 0.10–7.69 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *white dry pasta, **organic

incidence: 6/54* **, conc. range: 0.62–20.96 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, Portugal, and Spain, *dry pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *dry pasta, **organic

incidence: 4/20* **, conc. range: 0.10–0.12 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Italy and Spain, *fresh pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *fresh pasta, **organic

DEOXYNIVALENOL

incidence: ?/33, conc. range: ≤740 µg/kg, Ø conc.: 80 µg/kg*, sample year: unknown, country: Germany⁹⁴⁵, *of pos sa?

incidence: 16/29, conc. range: <200 µg/kg (8 sa), 200–500 µg/kg (5 sa), 670–840 µg/kg (3 sa), sample year: 2001, country: Germany⁹⁴⁸

incidence: 52/70, conc. range: ≤946 µg/kg, Ø conc.: 226 µg/kg, sample year: 2008, country: Spain⁹⁷⁷

incidence: 22/27*, conc. range: 35.10–450.00 µg/kg, Ø conc.: 162.14 µg/kg, sample year: unknown, country: Italy/Spain¹³⁴⁵, sa from Italy, *dry pasta sa for young children (22 sa co-contaminated with DON and OTA)

incidence: 15/22*, conc. range: 10.9–67.5 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *elongated pasta

incidence: 5/8*, conc. range: 51.0–623.3 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *whole-wheat long pasta

incidence: 5/10*, conc. range: 13.4–233.5 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *elongated pasta with vegetables

incidence: 18/26*, conc. range: 18.0–201.5 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *short pasta

incidence: 4/9*, conc. range: 17.0–95.4 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *short pasta with vegetables

incidence: 2/5*, conc. range: 472–525 µg/kg, Ø conc.: 498.5 µg/kg, sample year: unknown, country: Austria¹⁵⁴⁶, *conventional

incidence: 0/7*, conc. range: no contamination, sample year: unknown, country: Austria¹⁵⁴⁶, *organic

ENNIATIN A

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *whole-grain dry pasta, **conventional

incidence: 18/18* **, conc. range: 0.50–22.04 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *whole-grain dry pasta, **organic

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *white dry pasta, **conventional

incidence: 20/22* **, conc. range: 0.50–42.04 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *white dry pasta, **organic

incidence: 39/54* **, conc. range: 0.50–24.79 µg/kg, sample year: 2011, country:

Spain¹⁵⁶⁷, sa from Germany, Italy, Portugal, and Spain, *dry pasta, **conventional
incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *dry pasta, **organic

incidence: 11/20* **, conc. range: 0.50–5.09 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Italy and Spain, *fresh pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *fresh pasta, **organic

ENNIATIN A₁

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *whole-grain dry pasta, **conventional

incidence: 13/18* **, conc. range: 0.25–11.64 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *whole-grain dry pasta, **organic

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *white dry pasta, **conventional

incidence: 18/22* **, conc. range: 0.25–14.92 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *white dry pasta, **organic

incidence: 44/54* **, conc. range: 0.25–21.89 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, Portugal, and Spain, *dry pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *dry pasta, **organic

incidence: 12/20* **, conc. range: 0.25–6.98 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Italy and Spain, *fresh pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *fresh pasta, **organic

ENNIATIN B

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *whole-grain dry pasta, **conventional

incidence: 16/18* **, conc. range: 0.66–22.10 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *whole-grain dry pasta, **organic

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *white dry pasta, **conventional

incidence: 17/22* **, conc. range: 0.50–12.61 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *white dry pasta, **organic

incidence: 41/54* **, conc. range: 0.50–122.13 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, Portugal, and Spain, *dry pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *dry pasta, **organic

incidence: 17/20* **, conc. range: 0.50–33.13 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Italy and Spain, *fresh pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *fresh pasta, **organic

ENNIATIN B₁

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *whole-grain dry pasta, **conventional

incidence: 13/18* **, conc. range: 0.50–24.32 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *whole-grain dry pasta, **organic

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *white dry pasta, **conventional

incidence: 18/22* **, conc. range: 0.50–9.34 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *white dry pasta, **organic

incidence: 35/54* **, conc. range: 0.50–979.56 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, Portugal, and Spain, *dry pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *dry pasta, **organic

incidence: 15/20* **, conc. range: 0.50–13.41 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Italy and Spain, *fresh pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *fresh pasta, **organic

FUMONISINS (B₁, B₂)

incidence: 5/5*, conc. range: 126–522 µg/kg, sample year: unknown, country: Italy¹²¹⁴, *short-cut maize-based pasta

FUMONISINS

incidence: 27/29*, conc. range: 27–335 µg/kg, sample year: unknown, country: Italy¹⁴⁶⁵, *gluten-free pasta

FUSAPROLIFERIN

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *whole-grain dry pasta, **conventional

incidence: 4/18* **, conc. range: 0.05–0.30 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *whole-grain dry pasta, **organic

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *white dry pasta, **conventional

incidence: 2/22* **, conc. range: 0.49–8.02 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, and Spain, *white dry pasta, **organic

incidence: 6/54* **, conc. range: 0.05–0.36 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Germany, Italy, Portugal, and Spain, *dry pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *dry pasta, **organic

incidence: 2/20* **, conc. range: 0.50–0.23 µg/kg, sample year: 2011, country: Spain¹⁵⁶⁷, sa from Italy and Spain, *fresh pasta, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2011, country: Spain¹⁵⁶⁷, *fresh pasta, **organic

HT-2 TOXIN

incidence: 7/70, conc. range: ≤80 µg/kg, Ø conc.: 51 µg/kg, sample year: 2008, country: Spain⁹⁷⁷

T-2 TOXIN

incidence: ?/33, conc. range: ≤0.8 µg/kg, Ø conc.: 0.25 µg/kg*, sample year: unknown, country: Germany⁹⁴⁵, *of pos sa?

incidence: 4/22*, conc. range: 70.5–259.6 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *elongated pasta

incidence: 1/8*, conc.: 37.4 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *whole-wheat long pasta

incidence: 2/26*, conc. range: 28.7–115.9 µg/kg, sample year: unknown, country: Spain¹³⁷⁸, *short pasta

ZEARALENONE

incidence: 10/70, conc. range: ≤5.9 µg/kg, Ø conc.: 3.8 µg/kg*, sample year: 2008, country: Spain¹⁵³⁵, *of pos sa?

Pasta, bread, flour may contain the following mycotoxins:

Fusarium Toxins

FUMONISINS (B₁, B₂, B₃)

incidence: 15/17*, conc. range: ≤513 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *pasta and breads all gluten-free, **free fumonisins

HYDROLIZED FUMONISINS (HFB₁, HFB₂, HFB₃)

incidence: 15/17*, conc. range: ≤127 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *pasta and breads all gluten-free, **free fumonisins

FUMONISINS

incidence: 11/11*, conc. range: ≤1,530 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *all gluten-free, **bound fumonisins

Paste (bean paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/10*, conc. range: 0.2–2.8 µg/kg, Ø conc.: 1.26 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China, *fermented bean paste

Paste (curry paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/4, conc.: 1.2 µg/kg, sample year: unknown, country: UK⁷³²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: ?/4, conc. range: 0.6–15.5 µg/kg, sample year: unknown, country: UK⁷³²

Fusarium Toxins

FUMONISINS (B₁, B₂)

incidence: 1/4, conc.: 56 µg/kg, sample year: unknown, country: UK⁷³², sa imported

NIVALENOL

incidence: ?/4, conc. range: 5–16 µg/kg, sample year: unknown, country: UK⁷³²

ZEARALENONE

incidence: ?/4, conc. range: 3.1–4.2 µg/kg, sample year: unknown, country: UK⁷³²

Paste (fig paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3?/5, conc. range: 0.5–2.8 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵

AFLATOXIN B₂

incidence: 3?/5, conc. range: 0.5–1.8 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵

AFLATOXIN G₁

incidence: 3?/5, conc. range: 0.8–3.2 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵

AFLATOXIN G₂

incidence: 3?/5, conc. range: 0.5–1.2 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 9/10*, conc. range: 1.0–3.9 µg/kg (3 sa), 4.0–10.0 µg/kg (5 sa), 76 µg/kg (1 sa), sample year: unknown, country: UK⁷³⁹, *port sa

AFLATOXINS (TOTAL)

incidence: 13/20, conc. range: 1.0–10.0 µg/kg (6 sa), >10.0 µg/kg (7 sa, maximum: 165 µg/kg), sample year: 1988, country: UK¹⁶⁴, sa from Turkey

incidence: 7/42, conc. range: 1.0–10.0 µg/kg (26 sa), >10.0 µg/kg (9 sa, maximum: 35 µg/kg), sample year: 1989, country: UK¹⁶⁴, sa from Turkey

incidence: 57/70, conc. range: 1.0–10.0 µg/kg (54 sa), >10.0 µg/kg (3 sa, maximum: 40 µg/kg), sample year: 1990, country: UK¹⁶⁴, sa from Turkey

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/5, conc.: 5.2 µg/kg, sample year: 1988, country: Turkey⁸⁴⁵

Paste (hazelnut paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/5, conc. range: 0.26–3.61 µg/kg*, Ø conc.: 1.09 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN B₂

incidence: 5/5, conc. range: <LOQ–0.55 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₁

incidence: 5/5, conc. range: 0.53–1.84 µg/kg*, Ø conc.: 0.92 µg/kg*, sample year:

2008/2009, country: Italy¹⁶⁰¹, sa from Turkey (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 5/5, conc. range: <LOQ–0.30 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Turkey (5 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

Paste (maize paste) may contain the following mycotoxins:

Fusarium Toxins

FUMONISINS

incidence: 6/11*, conc. range: <9–511 µg/kg, Ø conc.: 75 µg/kg, sample year: 1995/1996, country: Czech Republic⁶⁷⁰, *gluten-free corn pastes

Paste (peanut paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (TOTAL)

incidence: 2/2, conc. range: 10.80–29.30 µg/kg, Ø conc.: 20.05 µg/kg, sample year: unknown, country: USA¹⁵¹³

AFLATOXINS

incidence: 3/3, conc. range: 1.5–4.7 µg/kg, Ø conc.: 3 µg/kg, sample year: unknown, country: Sudan⁶⁵

incidence: 3/4, conc. range: ≤11 µg/kg, Ø conc.: 9 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported

Paste (pipian paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 3/3, conc. range: ≤78 µg/kg, Ø conc.: 53 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported

Paste (red pepper paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/15*, conc. range: 0.21–0.55 µg/kg, Ø conc.: 0.38 µg/kg, sample year: 2006, country: Korea¹³⁷⁷, *Gochujang

Paste (sesame paste) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 37/100, conc. range: 0.39–20.45 µg/kg, Ø conc.: 4.31 µg/kg, sample year: 2007, country: China¹²²⁹ (36 sa co-contaminated with AFB₁ and AFB₂, at least 2 sa co-contaminated with AFB₁ and AFG₁)

incidence: 8/26*, conc. range: 0.9–1.78 µg/kg, Ø conc.: 1.29 µg/kg, sample year: 2007, country: China¹²²⁹, *sa from restaurant (in bulk)

incidence: 7/15*, conc. range: 0.86–14.56 µg/kg, Ø conc.: 5.32 µg/kg, sample year: 2007, country: China¹²²⁹, *sa from free market (in bulk)

incidence: 22/59*, conc. range: 0.39–20.45 µg/kg, Ø conc.: 5.73 µg/kg, sample year: 2007, country: China¹²²⁹, *sa from supermarket (bottling)

AFLATOXIN B₂

incidence: 36/100, conc. range: 0.02–4.92 µg/kg, Ø conc.: 0.65 µg/kg, sample year: 2007, country: China¹²²⁹ (36 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 29/100, conc. range: 0.05–26.28 µg/kg, Ø conc.: 2.57 µg/kg, sample year: 2007, country: China¹²²⁹ (at least 2 sa co-contamination with AFB₁ and AFG₁)

AFLATOXIN G₂

incidence: 22/100, conc. range: ≤5.75 µg/kg, sample year: 2007, country: China¹²²⁹

AFLATOXINS

incidence: 8/26*, conc. range: 1–2.18 µg/kg, Ø conc.: 1.51 µg/kg, sample year: 2007, country: China¹²²⁹, *sa from restaurant (in bulk)

incidence: 7/15*, conc. range: 1.1–40.49 µg/kg, Ø conc.: 12.24 µg/kg, sample year: 2007, country: China¹²²⁹, *sa from free market (in bulk)

incidence: 22/59*, conc. range: 0.54–56.89 µg/kg, Ø conc.: 9.44 µg/kg, sample year: 2007, country: China¹²²⁹, *sa from supermarket (bottling)

Paste (soybean paste) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/80*, conc.: pr, sample year: 1975, country: Taiwan⁸²³, *fermented soybean paste

AFLATOXIN B₂

incidence: 4/80*, conc. range: pr, sample year: 1975, country: Taiwan⁸²³, *fermented soybean paste

AFLATOXIN G₁

incidence: 1/80*, conc.: pr, sample year: 1975, country: Taiwan⁸²³, *fermented soybean paste

AFLATOXIN G₂

incidence: 8/80*, conc. range: pr, sample year: 1975, country: Taiwan⁸²³, *fermented soybean paste

Paste (tomato paste) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 10/10, conc. range: 3.1–13 µg/kg, Ø conc.: 6.6 µg/kg, sample year: 2009/2010, country: Germany¹⁰³⁸

incidence: 1/1, conc.: 25 µg/kg, sample year: unknown, country: Germany¹²¹² (1 sa co-contaminated with AME and AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/1, conc.: 5.3 µg/kg, sample year: unknown, country: Germany¹²¹² (1 sa co-contaminated with AME and AOH)

Pastries may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 23/31*, conc. range: ≤0.920 µg/kg, sample year: unknown, country: Germany⁵⁹², *salt pastries
see also Bread

Pâté may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/10*, conc.: 0.2 µg/kg, sample year: 1996, country: UK⁷⁴², *pork pate
incidence: 2/28*, conc. range: ≤0.9 µg/kg, sample year: unknown, country: Spain¹¹⁷⁶, *commercial pig-derived liver pâtés
incidence: 1/10*, conc.: 1.77 µg/kg, sample year: unknown, country: Spain¹¹⁷⁶, *home-made pig-derived liver pâtés

Pea may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/35, conc.: 25 µg/kg, sample year: unknown, country: Tunisia/USA²⁰, sa from Tunisia

incidence: 1/32, conc.: 1–10 µg/kg, sample year: during the 1990s, country: Cuba⁴⁷

AFLATOXIN G₁

incidence: 1/35, conc.: 42 µg/kg, country: Tunisia/USA²⁰, sa from Tunisia

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 3*/19, conc. range: 1–100 µg/kg, sample year: 1966/1967, country:

Uganda/USA⁵, sa from Uganda, * 2 sa contained AFB₁, 1 sa contained AFB₂ and 1 sa contained AFG₁

incidence: 3/13*, conc. range: 18–30 µg/kg, Ø conc.: 24 µg/kg, sample year: 1993–1996, country: Sudan/Oman²⁵⁷, sa from Sudan, *ncac

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/27*, conc. range: 10 µg/kg, sample year: 1976, country: Sweden⁸⁸³, *yellow peas

incidence: 1/20*, conc. range: 0.1–5 µg/kg, sample year: 1996–1998, country: Sweden¹⁵⁶⁵, *yellow peas

PENICILLIC ACID

incidence: 1/18*, conc.: 24 µg/kg, sample year: 1976, country: Sweden⁸⁸³, *green peas

Fusarium Toxins

ZEARALENONE

incidence: 1/27*, conc.: 2 µg/kg, sample year: 1976, country: Sweden⁸⁸³, *yellow peas

Peaches see Fruits (peach)

Peanut brittle see Nut (peanut brittle)

Peanut butter see Butter (peanut butter)

Peanut cake see Cake (peanut cake)

Peanut candy see Candy (peanut candies)

Peanut meal see Meal (peanut meal)

Peanut oil see Oil (peanut oil)

Peanut paste see Paste (peanut paste)

Peanut products see Product (peanut products)

Peanuts see Nut (peanuts)

Pear juice see Juice (pear juice)

Pearl millet may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: ?/7, conc. range: 2.6–8.1 µg/kg, sample year: 2005, country: Nigeria/USA⁹²⁶, sa from Nigeria

Pears see Fruits (pear)

Peas, lentils, beans see Legume

Pecans see Nut (pecan nuts)

Pepper see Spices (pepper)

Pepper (cayenne) see Spices (cayenne pepper)

Pepper- and barbecue-sauce see Sauce

Phane may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 16?/28, conc. range: 0.1–0.5 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

AFLATOXIN B₂

incidence: 16?/28, conc. range: 0.1–2.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

AFLATOXIN G₁

incidence: 16?/28, conc. range: 0.5–3.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

AFLATOXIN G₂

incidence: 16?/28, conc. range: 0.2–1.0 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³

Mophane worms are an important protein source (food) in Botswana.

Pheasant liver see Liver (pheasant liver)

Pig see Pork

Pig blood see Blood (pig blood)

Pig kidney see Kidney (pig kidney)

Pig liver see Liver (pig liver)

Pig meat see Meat (pig meat) and Pork

Pig muscle see Muscle (pig muscle)

Pig serum see Serum (pig serum)

Pilsener see Beer

Pine nuts see Nut (pine nuts)

Pinhol may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN G₁

incidence: 1/2*, conc.: 0.5 µg/kg, sample year: 2002, country: Spain²⁶¹, sa from China and Spain

Pipian paste see Paste (pipian paste)

Pistachio candy see Candy (pistachio candies)

Pistachio meal see Meal (pistachio meal)

Pistachios see Nut (pistachio nuts)

Pito see Beer

Plant may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 4/19*, conc. range: 34–524 µg/kg, Ø conc.: 183 µg/kg, sample year: 2002, country: South Africa¹⁴⁰⁸, *dietary wild plants; for detailed information please see the article

Plant oil see Oil (plant oil)

Plasma see Serum (pig serum)

Plum pulp see Pulp (plum pulp)

Plums see Fruit (plum)

Polenta see Grit (maize grits)

Popcorn may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/24, conc. range: 8–59 µg/kg, Ø conc.: 33.5 µg/kg, sample year: 2002/2003, country: Brazil²³⁰

incidence: 1/30, conc.: 3.72 µg/kg, sample year: 2009, country: Spain⁴⁹⁹, sa from different countries

incidence: 5/15, conc. range: 20–47 µg/kg, Ø conc.: 35 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶ (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 4 sa contaminated solely with AFB₁)

AFLATOXIN B₂

incidence: 1/24, conc.: 2.4 µg/kg, sample year: 2002/2003, country: Brazil²³⁰

AFLATOXIN G₁

incidence: 1/15, conc.: 18 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶ (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 1/15, conc.: 8 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶ (1 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 4/8, conc. range: 2,800–4,500 µg/kg, Ø conc.: 3,900 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 7/7, conc. range: 12–250 µg/kg, Ø conc.: 84 µg/kg, sample year: 1982–1985, country: Japan⁵³¹, sa from USA

incidence: 9/18, conc. range: ≤ 180 $\mu\text{g}/\text{kg}$,
sample year: 1983/1984, country: USA⁵⁴⁵

incidence: 5/8, \emptyset conc.: 121 $\mu\text{g}/\text{kg}$, sample
year: 2005–2008, country: Korea¹³⁰³

incidence: 4/15, conc. range:

32–40 $\mu\text{g}/\text{kg}$, sample year: 1998/1999,
country: Brazil¹⁴⁰²

incidence: 6/12, conc. range: 6–442 $\mu\text{g}/\text{kg}$,
sample year: 2010/2011, country:
Belgium¹⁵⁹³

incidence: 7/7, conc. range: < 100 $\mu\text{g}/\text{kg}$
(2 sa), 100–200 $\mu\text{g}/\text{kg}$ (4 sa), 202.1 $\mu\text{g}/\text{kg}$
(1 sa), \emptyset conc.: 126.5 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: Indonesia/Austria¹⁶²⁶,
sa from Indonesia

3-ACETYLDEOXYNIVALENOL

incidence: 10/12, conc. range: ≤ 69 $\mu\text{g}/$
 kg , sample year: 2010/2011, country:
Belgium¹⁵⁹³

15-ACETYLDEOXYNIVALENOL

incidence: 10/12, conc. range: ≤ 55 $\mu\text{g}/$
 kg , sample year: 2010/2011, country:
Belgium¹⁵⁹³

3-ACETYLDEOXYNIVALENOL +

15-ACETYLDEOXYNIVALENOL

incidence: 10/12, conc. range: ≤ 124 $\mu\text{g}/$
 kg , sample year: 2010/2011, country:
Belgium¹⁵⁹³

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 8/12, conc. range: ≤ 96 $\mu\text{g}/$
 kg , sample year: 2010/2011, country:
Belgium¹⁵⁹³

FUMONISIN B₁

incidence: 4/9, conc. range: $\leq 1,720$ $\mu\text{g}/$
 kg , \emptyset conc.: 210 $\mu\text{g}/\text{kg}$, sample year: 1999,
country: Brazil²¹⁵

incidence: 1/18*, conc.: 69.40 $\mu\text{g}/\text{kg}$,
sample year: 1993, country: USA²³⁵,
*popcorn products

incidence: 4/6*, conc. range: 10–60 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 28.3 $\mu\text{g}/\text{kg}$, sample year:
1992/1993, country: Italy³⁶², *4 kernel and
2 product sa

incidence: 4/9, conc. range: 1–474 $\mu\text{g}/\text{kg}$,
sample year: 1996, country: Denmark³⁸⁵

incidence: 1/2, conc.: 199 $\mu\text{g}/\text{kg}$, sample
year: 1995/1996, country: Uruguay/
Canada/USA³⁹⁹, sa from Uruguay

incidence: ?/5, conc. range: < 100 –500 $\mu\text{g}/$
 kg , sample year: unknown, country:
USA⁴⁰³

incidence: 1/1, conc.: 60 $\mu\text{g}/\text{kg}$, sample
year: 1990, country: USA⁴¹⁰

incidence: 1/1, conc.: 10 $\mu\text{g}/\text{kg}$, sample
year: 1991, country: USA⁴¹⁰

incidence: 7/22, conc. range: $\leq 1,003$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 347.3 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: Taiwan⁴¹⁸

incidence: 4/6, conc. range: 12.3–114 $\mu\text{g}/$
 kg , \emptyset conc.: 69.3 $\mu\text{g}/\text{kg}$, sample year:
1992/1993, country: Germany⁴²⁰

incidence: 4/8, conc. range: 78–246 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 168 $\mu\text{g}/\text{kg}$, sample year: 1998,
country: Colombia⁶⁷² (3 sa
co-contaminated with FB₁ and FB₂, 1 sa
contaminated solely with FB₁)

incidence: 6/8, conc. range: 12–424 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 100 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: Sweden⁶⁸²

incidence: 22/24, conc. range:
tr–1,240 $\mu\text{g}/\text{kg}$, sample year: 2003–2005,
country: Brazil⁹⁵⁸

incidence: 11/12, conc. range: 102–
7,346 $\mu\text{g}/\text{kg}$, sample year: 2001,
country: Brazil⁹⁶⁰ (6 sa
co-contaminated with FB₁ and FB₂, 5 sa
co-contaminated with FB₁)

incidence: 3/4, conc. range: 42–79 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 64 $\mu\text{g}/\text{kg}$, sample year: unknown,
country: Italy¹⁰⁷⁶

FUMONISIN B₂

incidence: 4/9, conc. range: ≤ 300 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 180 $\mu\text{g}/\text{kg}$, sample year: 1999,
country: Brazil²¹⁵

incidence: 1/6*, conc.: 20 $\mu\text{g}/\text{kg}$, sample
year: 1992/1993, country: Italy³⁶², *4
kernel and 2 product sa

incidence: 1/9, conc.: 59 µg/kg, sample year: 1996, country: Denmark³⁸⁵

incidence: 7/22, conc. range: ≤273 µg/kg, Ø conc.: 115.7 µg/kg, sample year: unknown, country: Taiwan⁴¹⁸

incidence: 3/8, conc. range: 62–78 µg/kg, Ø conc.: 72 µg/kg, sample year: 1998, country: Colombia⁶⁷² (3 sa co-contaminated with FB₁ and FB₂)

incidence: 3/8*, conc. range: 8–38 µg/kg, Ø conc.: 18 µg/kg, sample year: unknown, country: Sweden⁶⁸²

incidence: 22?/24, conc. range: tr–858 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸

incidence: 6/12, conc. range: 317–2,427 µg/kg, sample year: 2001, country: Brazil⁹⁶⁰ (6 sa co-contaminated with FB₁ and FB₂)

incidence: 1/4, conc.: 13 µg/kg, sample year: unknown, country: Italy¹⁰⁷⁶

FUMONISIN B₃

incidence: 1/18*, conc.: 45.76 µg/kg, sample year: 1993, country: USA²³⁵, *popcorn products

FUMONISINS (B₁, B₂, B₃)

incidence: 6/13*, conc. range: 14–784 µg/kg, sample year: 1994/1995, country: UK³⁸³, *popping and microwaveable corn

FUMONISINS

incidence: 1/1*, conc.: 250 µg/kg, sample year: unknown, country: USA³⁵⁷

MONILIFORMIN

incidence: 6/22, conc. range: <15–91 µg/kg, sample year: unknown, country: UK⁷⁴³

NIVALENOL

incidence: 1/15*, conc.: 916 µg/kg, sample year: unknown, country: Portugal¹⁶¹², *popped popcorn (1 sa co-contaminated with NIV and ZEA)

α-ZEARALENOL

incidence: 2/12, conc. range: ≤32 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

β-ZEARALENOL

incidence: 2/12, conc. range: ≤47 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

β-ZEARALENOL-4-GLUCOSIDE

incidence: 1/12, conc.: 10 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

ZEARALENONE

incidence: 1/24, conc.: 448 µg/kg, sample year: 2002/2003, country: Brazil²³⁰

incidence: 1/8, conc.: 10 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 4/7, conc. range: 2.5–130 µg/kg, Ø conc.: 38 µg/kg, sample year: 1985, country: USA⁸³¹

incidence: 4/12, conc. range: ≤46 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

incidence: 1/15*, conc.: 124 µg/kg, sample year: unknown, country: Portugal¹⁶¹², *popped popcorn (1 sa co-contaminated with NIV and ZEA)

ZEARALENONE-4-SULFATE

incidence: 1/12, conc.: 12 µg/kg, sample year: 2010/2011, country: Belgium¹⁵⁹³

Poppadom may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: ?/4, conc. range: 0.6–2.0 µg/kg, sample year: unknown, country: UK⁷³²

Poppadom is a thin, crisp-disc shaped Indian foodstuff made from a seasonal dough

Porcine plasma powder see Pig serum

Pork may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 10/58, conc. range: ≤0.14 µg/kg, sample year: unknown, country: Germany⁵⁹⁸

incidence: 64/76*, conc. range: ≤ 1.3 $\mu\text{g}/\text{kg}$,
sample year: 1993/1994, country:
Denmark⁶²⁴, *conventional

incidence: 4/7*, conc. range: ≤ 0.12 $\mu\text{g}/\text{kg}$,
sample year: 1993/1994, country:
Denmark⁶²⁴, *organic

incidence: 228/300, conc. range: 0.03–
0.06 $\mu\text{g}/\text{kg}$ (134 sa), 0.06–0.09 $\mu\text{g}/\text{kg}$ (27 sa),
0.09–0.50 $\mu\text{g}/\text{kg}$ (55 sa), 0.50–1.00 $\mu\text{g}/\text{kg}$
(3 sa), > 1.00 $\mu\text{g}/\text{kg}$ (9 sa, maximum: 2.9 $\mu\text{g}/$
kg), sample year: 1999, country:
Denmark⁶²⁶

incidence: 1/12*, conc.: 5 $\mu\text{g}/\text{kg}$, sample year:
1971–1975, country: Denmark/Yugoslavia⁶²⁹,
sa from Yugoslavia, *EN area

incidence: 64/76, conc. range: LOD/LOQ–
4.9 $\mu\text{g}/\text{kg}$ (maximum: 1.31 $\mu\text{g}/\text{kg}$), sample
year: 1993/1994, country: EU¹⁰³⁴, sa from
Denmark

incidence: 5/20, conc. range: ≤ 0.578 $\mu\text{g}/\text{kg}$,
sample year: unknown, country:
Portugal¹⁵⁹¹

Pork pâté see Pâté

Porridge may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₂
incidence: 1*/?, conc.: tr, sample year:
1979, country: Kenya⁷⁴⁶, *rolled porridge
oats

Fusarium Toxins

FUMONISIN B₁
incidence: 41/47, conc. range: 0.2–20 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 6 $\mu\text{g}/\text{kg}$, sample year: unknown,
country: South Africa¹⁴⁸³

FUMONISINS
incidence: 18/19*, conc. range: < 9 –788 $\mu\text{g}/$
kg, \emptyset conc.: 124 $\mu\text{g}/\text{kg}$, sample year:
1995/1996, country: Czech Republic⁶⁷⁰, *corn
instant porridge, gluten-free

Port wine see Wine

Posho meal see Meal (posho meal)

Potato may contain the following
mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1/11*, conc.: 4.26 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Germany²⁸⁹,
*moldy

Potato flour see Flour (potato flour)

Potato product see Product (potato
products)

Poultry kidney see Kidney (poultry
kidney)

Poultry meat see Meat (poultry meat)

Powder (cocoa powder) may
contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 10/12, conc. range: 0.2–0.6 $\mu\text{g}/$
kg, sample year: unknown, country:
Japan¹⁰²⁵ (5 sa co-contamination with
AFB₁ and OTA, 2 sa co-contamination
with AFB₁ and OTB; no further
information available)

incidence: 12/16*, conc. range: ≤ 1.04 $\mu\text{g}/$
kg, sample year: unknown, country:
Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil,
*natural cocoa powder

incidence: 18/28*, conc. range: ≤ 0.92 $\mu\text{g}/$
kg, sample year: unknown, country:
Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil,
*alkalised cocoa powder

AFLATOXIN B₂
incidence: 1/12, conc.: 0.1 $\mu\text{g}/\text{kg}$, sample
year: unknown, country: Japan¹⁰²⁵

incidence: 9/16*, conc. range: ≤ 0.51 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil, *natural cocoa powder

incidence: 14/28*, conc. range: ≤ 0.43 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil, *alkalised cocoa powder

AFLATOXIN G₁

incidence: 1/12, conc.: 0.2 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan¹⁰²⁵

incidence: 4/16*, conc. range: ≤ 0.91 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁵⁴¹, sa from Africa, Asia, and Brazil, *natural cocoa powder

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 29/31, conc. range: 0.1–4.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.41 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain²⁴³, sa from Cameroon, Guinea, Ivory Coast, and Nigeria

incidence: 40/40, conc. range: 0.09–1.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹²

incidence: 20/20, conc. range: 0.2–4.0 $\mu\text{g}/\text{kg}$ (20 sa, maximum: 2.4 $\mu\text{g}/\text{kg}$), country: UK⁶³⁸, sa from different countries

incidence: 25/26, conc. range: 0.053–0.932 $\mu\text{g}/\text{kg}$, sample year: 2001–2003, country: Spain⁶⁷⁸, sa from Spain and different countries

incidence: 9/18, conc. range: 0.22–0.77 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.43 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy⁶⁸⁰, sa from Italy and different countries

incidence: 19/20, conc. range: 0.3–1.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.71 $\mu\text{g}/\text{kg}$, sample year: 1996, country: UK⁷⁴²

incidence: 16/16*, conc. range: 0.57–7.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.0 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁹⁶, sa available in Canada, *alkalized cocoa powder

incidence: 16/16*, conc. range: 0.25–2.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.89 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Canada⁸⁹⁶, sa available in Canada, *natural cocoa powder

incidence: 2/12, conc. range: 0.25–0.67 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.46 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan¹⁰²⁵ (5 sa co-contamination with AFB₁ and OTA, 2 sa co-contamination with OTA and OTB; no further information available)

incidence: 40/40, conc. range: 0.18–1.82 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.55 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy¹⁵⁶⁴

incidence: 16/16, conc. range: 0.05–5.13 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.42 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁶⁴⁴

incidence: 28/28*, conc. range: 0.14–3.59 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.90 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Brazil¹⁶⁴⁴, *alkalized cocoa powder

OCHRATOXIN B

incidence: 10/12, conc. range: 0.10–0.17 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan¹⁰²⁵ (2 sa co-contamination with AFB₁ and OTB, 2 sa co-contamination with OTA and OTB; no further information available)

Powder (copra powder) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 65/65, conc. range: 0 to <50 $\mu\text{g}/\text{kg}$ (31 sa), 50–250 $\mu\text{g}/\text{kg}$ (28 sa), 250–1,000 $\mu\text{g}/\text{kg}$ (6 sa), sample year: unknown, country: Sri Lanka¹³⁸⁷

Powder (custard powder) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/6, conc. range: 0.17–1.20 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.685 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Qatar⁸⁷⁸

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/6, conc.: 86.43 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸

Powder (instant-drink powder) may contain the following mycotoxins:

Fusarium Toxins

ENNIATIN B

incidence: 1/1*, conc.: <3.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *conventional (1 sa co-contaminated with ENB, ENB₁, HT-2, and NIV)

incidence: 1/1*, conc.: <3.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic (1 sa co-contaminated with ENB and ENB₁)

ENNIATIN B₁

incidence: 1/1*, conc.: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *conventional (1 sa co-contaminated with ENB, ENB₁, HT-2, and NIV)

incidence: 1/1*, conc.: <10.8 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic (1 sa co-contaminated with ENB and ENB₁)

HT-2 TOXIN

incidence: 1/1*, conc.: 23 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *conventional (1 sa co-contaminated with ENB, ENB₁, HT-2, and NIV)

incidence: 0/1*, conc.: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic

NIVALENOL

incidence: 1/1*, conc.: 79 µg/kg, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *conventional (1 sa co-contaminated with ENB, ENB₁, HT-2, and NIV)

incidence: 0/1*, conc.: no contamination, sample year: 2002, country: Finland/Italy¹¹⁶³, sa from Italy, *organic

Powder (milk powder) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 5/168*, conc. range: tr–3 µg/kg, sample year: unknown, country: France¹³³⁰, *reconstituted infant milk powders

incidence: 1/7*, conc.: 0.003 µg/kg, sample year: 2007, country: Portugal¹⁵⁵², *baby foods (1 sa co-contaminated with AFB₁ and OTA); for detailed information please see the article

AFLATOXIN M₁

incidence: 30/41, conc. range: 0.2–2.0 µg/kg, Ø conc.: 0.5 µg/kg, sample year: 1972–1974, country: Germany⁶

incidence: 1/15, conc.: 15 µg/kg, sample year: unknown, country: Egypt⁴³, sa from Denmark

incidence: 3/18, conc. range: 0.040–0.095 µg/kg, Ø conc.: 0.066 µg/kg, sample year: unknown, country: Italy⁴⁹

incidence: 81/97, conc. range: ≤0.10125 µg/kg, Ø conc.: 0.02177 µg/kg, sample year: 1995, country: Italy⁵⁸

incidence: 35/277, conc. range: <0.03 µg/kg (24 sa), 0.01–0.02 µg/kg (6 sa), 0.02–0.04 µg/kg (5 sa), sample year: 1981–1983, country: UK⁶¹

incidence: 9/9, conc. range: 0.01–0.28 µg/kg, sample year: unknown, country: Italy⁷⁷

incidence: 47/95, conc. range: 0.1–2.55 µg/kg, sample year: unknown, country: Germany⁸⁰

incidence: 5/10, conc. range: tr–0.243 µg/kg, sample year: 1992/1993, country: Japan/Italy⁹³, sa from USA

incidence: 3/12, conc. range: tr, sample year: 1992/1993, country: Japan/Italy⁹³, *sa from Italy

- incidence: 3/3, conc. range: tr–0.085 µg/kg, sample year: 1992/1993, country: Japan/Italy⁹³, sa from Poland
- incidence: 21/27, conc. range: tr–0.464 µg/kg, sample year: 1992/1993, country: Japan/Italy⁹³, sa from China
- incidence: 17/24, conc. range: 0.083–0.342 µg/kg, Ø conc.: 0.221 µg/kg, sample year: 1997, country: Korea⁹⁶
- incidence: 469/837, conc. range: 0.04–0.10 µg/kg (351 sa), 0.11–0.20 µg/kg (105 sa), >0.20 µg/kg (13 sa, maximum: 0.69 µg/kg), sample year: 1978/1979, country: Austria¹⁰³
- incidence: 4/4, conc. range: 0.00928–0.08160 µg/kg, Ø conc.: 0.04224 µg/kg, sample year: unknown, country: USA¹²⁰
- incidence: 8/166, conc. range: 0.67–2.0 µg/kg, sample year: unknown, country: Germany¹³³, *different kinds of dried milk products
- incidence: 33/300*, conc. range: 0.10–0.20 µg/kg (17 sa), 0.20–0.30 µg/kg (10 sa), >0.50 µg/kg (6 sa, maximum: 1.00 µg/kg), Ø conc.: 0.27 µg/kg, sample year: 1992/1993, country: Brazil¹³⁶, *sa collected in nurseries
- incidence: 2/13, conc. range: >0–0.05 µg/l (1 sa), >0.05–0.125 µg/l (1 sa), sample year: 1995/1996, country: Thailand¹⁵⁵
- incidence: ?/5, conc. range: 4.45–5.30 µg/kg, Ø conc.: 4.85 µg/kg, sample year: unknown, country: USA¹⁸⁰
- incidence: 5/10, conc. range: 0.6–15 µg/kg, sample year: unknown, country: India/UK¹⁹⁵, sa from India
- incidence: 1/10, conc.: 5 µg/l, sample year: 1999/2000, country: Egypt²²¹
- incidence: 1/16, conc.: 1 µg/l, sample year: 1974/1975, country: India³²¹
- incidence: 4/5, conc. range: 0.010–0.014 µg/l, Ø conc.: 0.0125 µg/l, sample year: 1999, country: Argentina⁶⁰⁵
- incidence: 50/92* **, conc. range: 0.001–0.010 µg/l (9 sa), >0.010–0.050 µg/l (37 sa), >0.050 µg/l (4 sa, maximum: 0.0796 µg/l), Ø conc.: 0.0322 µg/l, sample year: 1996, country: Italy⁶¹³, sa from Italy, Denmark, France, Germany, and Switzerland, *infant formula, **dry milk
- incidence: 1/1*, conc.: 0.06 µg/kg, sample year: unknown, country: UK⁸⁴⁷, *roller-dried milk
- incidence: 1/1*, conc.: 0.26 µg/kg, sample year: unknown, country: UK⁸⁴⁷, *spray-dried milk
- incidence: 15/15, conc. range: 0.16–0.32 µg/l (10 sa), 0.32–0.5 µg/l (5 sa), sample year: 2008, country: China/Russia/Korea¹⁰⁴⁰, sa from China (calculated as of dry milk/ml of solution)
- incidence: 1/1, conc.: 0.12 µg/l, sample year: unknown, country: France/UK¹⁰⁶⁴
- incidence: 1/1, conc.: 1.2 µg/kg, sample year: unknown, country: France¹⁰⁹²
- incidence: ?/27*, conc. range: 0.00204–0.00413 µg/kg, sample year: 2005–2007, country: Kuwait¹¹⁰⁹, *baby formula
- incidence: 1/8, conc.: 0.012 µg/kg, sample year: 2005/2006, country: Syria¹¹¹²
- incidence: 8/12*, conc. range: 0.010–0.050 µg/l (4 sa), 0.051–0.100 µg/l (4 sa), Ø conc.: 0.056 µg/l, sample year: 2004/2005, country: Brazil¹³⁰⁷, *goat milk powder
- incidence: 6/170, conc. range: tr, sample year: unknown, country: France¹³³⁰
- incidence: 7/168*, conc. range: tr–2 µg/kg, sample year: unknown, country: France¹³³⁰, *reconstituted infant milk powders
- incidence: 4/21, conc. range: 0.107–0.216 µg/kg, Ø conc.: 0.163 µg/kg, sample year: 1990–1992, country: Japan¹³³⁶, sa from France (4 sa, 2 contaminated), Indonesia (2 sa), Japan (4 sa), Thailand (1 sa, 1 contaminated), and USA (10 sa, 1 contaminated)
- incidence: 4/15, conc. range: 0.1–0.35 µg/kg, Ø conc.: 0.20 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

incidence: 62/65*, conc. range: 0.010–0.020 µg/kg (8 sa), 0.020–0.050 µg/kg (27 sa), 0.050–0.500 µg/kg (27 sa), sample year: 2006, country: Brazil¹⁴¹⁷, *sa taken from municipal day-care centers and elementary schools

incidence: 10/10*, conc. range: 0.010–0.020 µg/kg (1 sa), 0.020–0.050 µg/kg (4 sa), 0.050–0.500 µg/kg (5 sa), sample year: 2006, country: Brazil¹⁴¹⁷, *sa purchased from supermarkets

incidence: 6/7*, conc. range: 0.005–0.041 µg/kg, Ø conc.: 0.014 µg/kg, sample year: 2007, country: Portugal¹⁵⁵², *baby foods (2 sa co-contaminated with AFM₁ and OTA, 4 sa contaminated solely with AFM₁); for detailed information please see the article

incidence: 50/80, conc. range: 0.001–0.500 µg/kg (14 sa), 0.501–0.600 µg/kg (19 sa), >0.601 µg/kg (17 sa), sample year: unknown, country: Turkey¹⁵⁵³

incidence: 54/125*, conc. range: <0.005 µg/l (19 sa), 0.005–0.025 µg/l (35 sa, maximum: 0.0218 µg/l), sample year: 2010, country: Egypt¹⁶⁰⁶, *infant formula milk powder (cans containing imported cows' milk-based formula)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 3/7*, conc. range: 0.011–0.136 µg/kg, Ø conc.: 0.094 µg/kg, sample year: 2007, country: Portugal¹⁵⁵², *baby foods (1 sa co-contaminated with AFB₁ and OTA, 2 sa co-contaminated with AFM₁ and OTA); for detailed information please see the article

Fusarium Toxins

ZEARALENONE
incidence: 6/20, conc. range: 3.1–12.5 µg/kg, Ø conc.: 6.4 µg/kg, sample year: unknown, country: Egypt⁴⁴³

Pozol may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN
incidence: 2/37*, conc. range: 2–7 µg/kg**, Ø conc.: 4.5 µg/kg**, sample year: 2002/2003, country: Mexico¹²⁶⁷, *white-pozol, **predominantly AFB₂
incidence: 17/41*, conc. range: 0.5–10 µg/kg (14 sa)**, 11–20 µg/kg (2 sa)**, 21 µg/kg (1 sa)**, Ø conc.: 8.2 µg/kg**, sample year: 2002/2003, country: Mexico¹²⁶⁷, *cacao-pozol, **predominantly AFB₂

Pozol is a nixtamalized maize-based food.

Product may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 2/4*, conc. range: 2.0–4.0 µg/kg (1 sa), 6.0 µg/kg (1 sa), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *fermented products

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 3/21*, conc. range: ≤0.04 µg/kg, sample year: unknown, country: Germany⁵⁹⁸, *cooked products
incidence: 12/30*, conc. range: ≤0.86 µg/kg, Ø conc.: 0.205 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *mixed products (Tortellini)

Fusarium Toxins

FUMONISINS (B₁, B₂, B₃)
incidence: 4/7*, conc. range: ≤2,250 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *extruded gluten-free products, **free fumonisins

FUMONISINS
incidence: 26/26*, conc. range: 14–1,178 µg/kg, Ø conc.: 301 µg/kg,

sample year: 1995/1996, country: Czech Republic⁶⁷⁰, *corn-extruded, gluten-free products

incidence: 16/19*, conc. range: 39–2,253 µg/kg, sample year: unknown, country: Italy¹⁴⁶⁵, *extruded, gluten-free products

HYDROLIZED FUMONISINS (HFB₁, HFB₂, HFB₃)
incidence: 4/7*, conc. range: ≤458 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *extruded gluten-free products, **free fumonisins

Product (apple products) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 2/6*, conc. range: 10 µg/kg, Ø conc.: 10 µg/kg, sample year: 1996–1998, country: South Africa²²², *apple fruit products

incidence: 4/77*, conc. range: 6.25–10 µg/kg (1 sa), 10–25 µg/kg (3 sa, maximum: 17.6 µg/kg), sample year: 2008, country: Spain⁹⁶⁶, *solid apple-based products

incidence: 14/53*, conc. range: 1.5–50.9 µg/kg or l, sample year: unknown, country: Spain¹¹¹⁹, for detailed information please see the article

incidence: 11/40, conc. range: 1.4–74.2 µg/kg, Ø conc.: 26.7 µg/kg, sample year: unknown, country: Italy¹³⁶², for detailed information please see the article

Product (bakery products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/4*, conc.: 24 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *barley-based products

incidence: 1/31*, conc.: 15.7 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *included bar, biscuit, cracker, roll, and

wafer (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 1/31*, conc.: 8.25 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *included bar, biscuit, cracker, roll, and wafer (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/8*, conc. range: ≤14 µg/kg, sample year: unknown, country: UK¹⁰⁴⁸, *mold damaged

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/2*, conc.: tr (<100 µg/kg), sample year: unknown, country: UK¹⁰⁴⁸, *mold damaged

OCHRATOXIN A

incidence: 3/8*, conc. range: ≤80 µg/kg, sample year: unknown, country: UK¹⁰⁴⁸, *mold damaged

Fusarium Toxins

BEAUVERICIN

incidence: 2/4*, conc. range: 5.6–82 µg/kg, Ø conc.: 43.8 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *barley-based products

DEOXYNIVALENOL

incidence: 7/7*, conc. range: 90–358 µg/kg, Ø conc.: 226.3 µg/kg, sample year: unknown, country: Italy¹⁵⁵⁷, *bread, cracker, biscuit, and minicake commodities

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 7/7*, conc. range: ≤30 µg/kg, sample year: unknown, country: Italy¹⁵⁵⁷, *bread, cracker, biscuit, and minicake commodities

NIVALENOL

incidence: 4/4*, conc. range: 451–813 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *barley-based products

Product (cereal products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/26, conc. range: 0.06–0.40 µg/kg, Ø conc.: 0.28 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 18/125* **, conc. range: >0.2–2.0 µg/kg (18 sa), sample year: 2007, country: Turkey¹⁵⁶⁰, *commercial Turkish foods, **processed cereal products

incidence: 2/122* **, conc. range: >0.2–2.0 µg/kg (2 sa), sample year: 2008, country: Turkey¹⁵⁶⁰, *commercial Turkish foods, **processed cereal products

incidence: 1/1, conc.: 0.33 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Sri Lanka (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 3/21, conc. range: 0.02 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

incidence: 5/27, conc. range: 0.04–1.35 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

AFLATOXIN B₂

incidence: 1/26, conc.: 0.10 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 1/1, conc.: <LOQ*, sample year: 2008/2009, country: Italy¹⁶⁰¹, sa from Sri Lanka (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/21, conc. range: 0.02–0.03 µg/kg, Ø conc.: 0.025 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

incidence: 1/27, conc.: 0.04 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

AFLATOXIN G₁

incidence: 1/21, conc.: 0.03 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

incidence: 7/27, conc. range: 0.03–1.72 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

AFLATOXIN G₂

incidence: 2/21, conc. range: 0.03 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 16/66*, conc. range: 0.01–4 µg/kg (16 sa, maximum: 0.7 µg/kg), sample year: 1996–1998, country: Sweden¹⁵⁶⁵, *buckwheat and maize products

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 27/37, conc. range: 0.02–1.71 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

incidence: 40/54, conc. range: 0.02–8.26 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/23*, conc. range: ≤56 µg/kg, year: 2004, country: Germany²⁴⁴, *processed cereal products

FUMONISIN B₃

incidence: 3/16*, conc. range: 50.46–105.95 µg/kg, Ø conc.: 80.7 µg/kg, sample year: 1993, country: USA²³⁵, *corn-based cereal products

Product (cocoa products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 10/37*, conc. range: >0.2–2.0 µg/kg (9 sa), >2.0–10.0 µg/kg (1 sa), sample year: 2007, country: Turkey¹⁵⁶⁰, *commercial Turkish foods

incidence: 5/20*, conc. range: >0.2–2.0 µg/kg (5 sa), sample year: 2008, country: Turkey¹⁵⁶⁰, *commercial Turkish foods

incidence: 2/9*, conc. range: >0.2–2.0 µg/kg (2 sa), sample year: 2009, country: Turkey¹⁵⁶⁰, *commercial Turkish foods

Product (coconut products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 7/25, conc. range: 0.05–0.1 µg/kg, Ø conc.: 0.07 µg/kg, sample year: 1989/1990, country: France³⁹⁷

AFLATOXIN
incidence: 57/229, Ø conc.: 2.8 µg/kg*, sample year: unknown, country: Philippines⁹⁵⁶, *of pos sa?

Aspergillus and *Penicillium* Toxins

CITRININ
incidence: 3/384* **, conc. range: 30–60 µg/kg, Ø conc.: 36.7 µg/kg, sample year: 1982/1983, country: India⁷⁹⁴, *dry copra and copra meal, **sa collected during early rainy season and late summer

OCHRATOXIN A
incidence: 1/384* **, conc.: 50 µg/kg, sample year: 1982/1983, country: India⁷⁹⁴, *dry copra and copra meal, **sa collected during early rainy season and late summer

Product (dairy products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/22, conc.: 6.4 µg/kg, sample year: unknown, country: GDR¹⁷⁸

Product (fish products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN
incidence: 73/107, Ø conc.: 3.8 µg/kg*, sample year: unknown, country: Philippines⁹⁵⁶, *of pos sa?

Product (food products) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 95/140, conc. range: 0.01–1.7 µg/kg or µg/l, sample year: 2008/2009, country: Canada¹⁵⁴⁰, for detailed information please see the article

Product (fruit products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1*/32**, conc.: 4,600 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *moldy, **included fruits and fruit products

AFLATOXIN G₁
incidence: 1*/32**, conc.: 21.5 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *moldy, **included fruits and fruit products

AFLATOXIN G₂
incidence: 1*/32**, conc.: 1,200 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *moldy, **included fruits and fruit products

Aspergillus and *Penicillium* Toxins

PATULIN
incidence: 3/71, conc. range: 35.5–89.3 µg/l, sample year: unknown, country: Italy¹⁰¹⁴

Product (maize products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 15/50*, conc. range: ≤3 µg/kg, sample year: 1977, country: Switzerland¹¹³,

*maize grits, polenta and other maize products

incidence: 8/8, conc. range: 1–117 µg/kg, Ø conc.: 40 µg/kg, sample year: 1996, country: Japan³⁰⁰, sa from Philippines

incidence: 5/74, conc. range: ≤20 µg/kg, sample year: 1999–2001, country: Brazil⁹⁵⁹

incidence: 1/17, conc.: 0.50 µg/kg*, sample year: unknown, country: Italy¹⁵⁹⁷, *polenta

incidence: 2/11, conc. range: 5–8 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia

incidence: 2/3, conc. range: 2.0–4.0 µg/kg (1 sa), 5.6 µg/kg (1 sa), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia

AFLATOXIN B₂

incidence: 6/8, conc. range: 2–10 µg/kg, Ø conc.: 5 µg/kg, sample year: 1996, country: Japan³⁰⁰, sa from Philippines

AFLATOXIN G₁

incidence: 1/8, conc.: 4 µg/kg, sample year: 1996, country: Japan³⁰⁰, sa from Philippines

AFLATOXIN

incidence: 1/14, conc.: 39 µg/kg, sample year: 1967/1968, country: USA³², sa from Philippines

incidence: 14/27, conc.: >30 to ≤400 µg/kg, sample year: 1969, country: USA³², sa from Philippines

incidence: 182/342, conc. range: >20–99 µg/kg (66 sa), 100–1,000 µg/kg (92 sa), >1,000 (24 sa, maximum: 46,400 µg/kg), sample year: 2004, country: USA/Kenya¹²²⁵, sa from Kenya

incidence: 362/362*, conc. range: 0–20 µg/kg (168 sa), 21–50 µg/kg (38 sa), 51–100 µg/kg (41 sa), 101–500 µg/kg (71 sa), 501–1,000 µg/kg (19 sa), >1,000–46,400 µg/kg (25 sa), sample year: 2004, country: Kenya¹²⁹², *maize grains, maize flour, and dehulled dry maize (muthokoi)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: ?/74, conc. range: ≤23.3 µg/kg, sample year: 1999–2001, country: Brazil⁹⁵⁹

AFLATOXINS (TOTAL)

incidence: 2/11, conc. range: 6–12 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia

AFLATOXINS

incidence: 19/139*, conc. range: ≤53 µg/kg, Ø conc.: 19.6 µg/kg, sample year: 1986, country: USA¹⁹⁷, *milled corn products

incidence: 4/11, conc. range: 0.1–5 µg/kg (1 sa), 11–20 µg/kg (1 sa), 21–35 µg/kg (1 sa), >50 µg/kg (1 sa), sample year: 1995–1999, country: Malaysia³⁹¹

Fusarium Toxins

BEAUVERICIN

incidence: 1/22*, conc.: 5.1 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, *maize-based products

DEOXYNIVALENOL

incidence: 371/384*, conc. range: 0.3–2,803 µg/kg, Ø conc.: 249 µg/kg, sample year: 2009, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 141/155*, conc. range: 0.3–1,828 µg/kg, Ø conc.: 170 µg/kg, sample year: 2010, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 134/141*, conc. range: 1–360 µg/kg, Ø conc.: 56 µg/kg, sample year: 2011, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

3-ACETYLDEOXYNIVALENOL

incidence: 281/384*, conc. range: 0.3–45 µg/kg, Ø conc.: 3 µg/kg, sample year: 2009, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 99/155*, conc. range: 0.3–105 µg/kg, Ø conc.: 7 µg/kg, sample year: 2010, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 31/141*, conc. range: 0.3–16 µg/kg, Ø conc.: 2 µg/kg, sample year: 2011, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

15-ACETYLDEOXYNIVALENOL

incidence: 353/384*, conc. range: 0.3–831 µg/kg, Ø conc.: 68 µg/kg, sample year: 2009, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 137/155*, conc. range: 0.3–1,519 µg/kg, Ø conc.: 50 µg/kg, sample year: 2010, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 74/141*, conc. range: 1–158 µg/kg, Ø conc.: 24 µg/kg, sample year: 2011, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 332/384*, conc. range: 3–844 µg/kg, Ø conc.: 76 µg/kg, sample year: 2009, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 99/155*, conc. range: 3–128 µg/kg, Ø conc.: 26 µg/kg, sample year: 2010, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

incidence: 77/141*, conc. range: 3–39 µg/kg, Ø conc.: 11 µg/kg, sample year: 2011, country: China¹⁵⁹², *included corn flakes, corn flour, and corn grit

FUMONISIN B₁

incidence: 13/25*, conc. range: 50.38–349.28 µg/kg, Ø conc.: 157.61 µg/kg, sample year: 1993, country: USA²³⁵, *corn flour products (1 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁ and FB₃, 11 sa contaminated solely with FB₁)

incidence: 2/5, conc. range: 18.2–24 µg/kg, Ø conc.: 21.1 µg/kg, sample year: 1996, country: Korea³⁷⁵

incidence: 2/6* **, conc. range: ≤73 µg/kg, Ø conc.: 57.2 µg/kg, sample year: unknown, country: Taiwan⁴¹⁸, *corn-based miscellaneous foodstuff

incidence: 70/74, conc. range: 20–8,600 µg/kg, sample year: 1999–2001, country: Brazil⁹⁵⁹

incidence: 37/37*, conc. range: 0.8–728.8 µg/kg (dry weight), Ø conc.: 84 µg/kg, sample year: unknown, country: USA¹⁰⁶⁶, sa from Mexico and USA, *nixtamalized corn products

incidence: 15?/93*, conc. range: 2–91 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Spain, *included baby food, cookies, corn flour, cornflakes, and others (all conventional origin); for detailed information please see the article

incidence: 8?/11*, conc. range: 2–449 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Spain, *included baby food, cookies, cornflakes, and others (all organic origin); for detailed information please see the article

incidence: 12?/73*, conc. range: 2–235 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Italy, *included baby food, cookies, corn flour, pasta, and others (all conventional origin); for detailed information please see the article

incidence: 7?/9*, conc. range: 4–80 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Italy, *included cornflour and others (all organic origin); for detailed information please see the article

incidence: 1/3, conc.: 71 µg/kg, sample year: 2006, country: Portugal/Spain¹²⁵², sa from Spain

HYDROLYZED FUMONISIN B₁

incidence: 23/37*, conc. range: 0.8–12.5 µg/kg (dry weight), Ø conc.: 3.8 µg/kg, sample year: unknown, country: USA¹⁰⁶⁶, sa from Mexico and USA, *nixtamalized corn products

FUMONISIN B₂

incidence: 1/25*, conc.: 123.85 µg/kg, sample year: 1993, country: USA²³⁵, *corn flour products (1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 31/37*, conc. range: 0.7–228.2 µg/kg (dry weight), Ø conc.: 57.3 µg/kg, sample year: unknown, country: USA¹⁰⁶⁶, sa from Mexico and USA, *nixtamalized corn products

incidence: 152/93*, conc. range: 2–29 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Spain, *included baby food, cookies, corn flour, cornflakes, and others (all conventional origin); for detailed information please see the article

incidence: 72/11*, conc. range: 2–229 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Spain, *included baby food, cookies, and others (all organic origin); for detailed information please see the article

incidence: 122/73*, conc. range: 3–187 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Italy, *included cookies, corn flour, pasta, and others (all conventional origin); for detailed information please see the article

incidence: 72/9*, conc. range: 3–53 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Italy, *included cornflour and others (all organic origin); for detailed information please see the article

incidence: 1/3*, conc.: 42 µg/kg, sample year: 2006, country: Portugal/Spain¹²⁵², sa from Spain

FUMONISIN B₃

incidence: 2/25*, conc. range: 41.78–42.81 µg/kg, Ø conc.: 42.3 µg/kg, sample year: 1993, country: USA²³⁵, *corn flour products (1 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁ and FB₃)

incidence: 28/37*, conc. range: 0.6–159.6 µg/kg (dry weight), Ø conc.: 47.2 µg/kg, sample year: unknown, country: USA¹⁰⁶⁶, sa from Mexico and USA, *nixtamalized corn products

incidence: 122/93*, conc. range: 4–16 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Spain, *included cookies, corn flour, cornflakes, and others

(all conventional origin); for detailed information please see the article

incidence: 42/11*, conc. range: 6–105 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Spain, *included baby food and cornflakes (all organic origin); for detailed information please see the article

incidence: 122/73*, conc. range: 4–70 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Italy, *included baby food, cookies, corn flour, pasta, and others (all conventional origin); for detailed information please see the article

incidence: 72/9*, conc. range: 7–28 µg/kg, sample year: 2007, country: Italy/Spain¹²²⁷, sa from Italy, *included cornflour and others (all organic origin); for detailed information please see the article

FUMONISINS

incidence: 4/7*, conc. range: <9–115 µg/kg, sample year: 1995/1996, country: Czech Republic⁶⁷⁰, *gluten-free maize products

NIVALENOL

incidence: 9/22*, conc. range: 116–422 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *maize-based products

ZEARALENONE

incidence: 14/24*, conc. range: 2–5 µg/kg (8 sa), 5–10 µg/kg (3 sa), 10–20 µg/kg (3 sa), sample year: 1999–2001, country: Switzerland¹³⁶⁰, *maize products and corn flakes

Product (meat products) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 20/98, Ø conc.: 1.0 µg/kg*, sample year: unknown, country: Philippines⁹⁵⁶, *of pos sa?

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/19*, conc. range: tr (<1 µg/kg), sample year: unknown, country: UK¹⁰⁴⁸, *mold damaged

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 7/33*, conc. range: tr (<100 µg/kg), sample year: unknown, country: UK¹⁰⁴⁸, *mold damaged

OCHRATOXIN A

incidence: 7/33*, conc. range: ≤4 µg/kg, sample year: unknown, country: UK¹⁰⁴⁸, *mold damaged

incidence: 1/22*, conc.: 56 µg/kg, sample year: unknown, country: Denmark¹⁴²⁶, *Parma ham

PATULIN

incidence: 7/24*, conc. range: ≤200 µg/kg, sample year: unknown, country: UK¹⁰⁴⁸, *mold damaged

Product (melon seed products) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 10/40*, conc. range: 2–13 µg/kg, sample year: 2005, country: Nigeria¹⁶¹⁰, *"ogiri" (fermented "egusi" seed condiment)

incidence: 13/40*, conc. range: 3–15 µg/kg, sample year: 2005, country: Nigeria¹⁶¹⁰, *"robo" (melon ball snacks)

incidence: 7/40*, conc. range: 3–10 µg/kg, sample year: 2005, country: Nigeria¹⁶¹⁰, *soup from "egusi" melon seed

incidence: 9/36*, conc. range: 4.1–14.3 µg/kg, sample year: 2006, country: Nigeria¹⁶¹⁰, *"ogiri" (fermented "egusi" seed condiment)

incidence: 14/45*, conc. range: 2.5–11.7 µg/kg, sample year: 2006, country: Nigeria¹⁶¹⁰, *"robo" (melon ball snacks)

incidence: 7/32*, conc. range: 4.3–10.7 µg/kg, sample year: 2006, country: Nigeria¹⁶¹⁰, *soup from "egusi" melon seed

Product (milk products) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/22, conc.: 6.4 µg/kg, sample year: unknown, country: GDR¹⁷⁸

incidence: 2/23*, conc. range: 10.0–20.0 µg/kg, Ø conc.: 15.0 µg/kg, sample year: 1974/1975, country: India³²¹, *indigenous Indian milk products: barfi, khoa, paneer

AFLATOXIN M₁

incidence: 3/10, conc. range: 0.6–15 µg/kg, sample year: unknown, country: India/UK¹⁹⁵, sa from India

incidence: 66/104*, conc. range: >0–0.16 µg/l (18 sa), 0.16–0.32 µg/l (6 sa), 0.32–0.5 µg/l (42 sa), sample year: 2008, country: China/Russia/Republic of Korea¹⁰⁴⁰, sa from China, *included madzoon, pure milk, and milk beverage

Product (nut products) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 13/20*, conc. range: 15–138 µg/kg, Ø conc.: 64.9 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *peanut products

incidence: 14/22*, conc. range: 1–244 µg/kg, Ø conc.: 52 µg/kg, sample year: 1996/1997, country: Japan³⁰⁰, sa from Malaysia and Philippines, *peanut products

incidence: 1/13, conc.: 0.07 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹

incidence: 42/20*, conc. range: 97.8–453 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *coated nut products

AFLATOXIN B₂

incidence: 2/20*, conc. range: 3–24 µg/kg, Ø conc.: 13.5 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *peanut products

incidence: 12/22*, conc. range: 3–125 µg/kg, Ø conc.: 22 µg/kg, sample year: 1996/1997, country: Japan³⁰⁰, sa from Malaysia and Philippines, *peanut products

incidence: 4/20*, conc. range: 15.3–61.7 µg/kg, sample year: unknown, country: Malaysia¹⁵³¹, *coated nut products

AFLATOXIN G₁

incidence: 8/20*, conc. range: 9–44 µg/kg, Ø conc.: 28 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *peanut products

incidence: 2/22*, conc. range: 6–68 µg/kg, Ø conc.: 37 µg/kg, sample year: 1996/1997, country: Japan³⁰⁰, sa from Malaysia and Philippines, *peanut products

AFLATOXIN G₂

incidence: 2/20*, conc. range: 4–18 µg/kg, Ø conc.: 11 µg/kg, sample year: unknown, country: GDR¹⁷⁸, *peanut products

incidence: 1/22*, conc.: 33 µg/kg, sample year: 1996/1997, country: Japan³⁰⁰, sa from Malaysia and Philippines, *peanut products

AFLATOXIN

incidence: 11/32*, conc. range: >30 to ≤220 µg/kg, sample year: 1967–1969, country: USA³², sa from Philippines, *peanut products

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 30/45*, conc. range: >20 to ≤1,789 µg/kg, Ø conc.: 384 µg/kg, country: Brazil²⁷⁷, *peanut products

incidence: 22/74*, conc. range: 0.01–4 µg/kg (19 sa), >4 µg/kg (3 sa, maximum: 19 µg/kg), sample year: 1996–1998, country: Sweden¹⁵⁶⁵, *peanut products

incidence: 8/295*, conc. range: 15.0–340.0 µg/kg, Ø conc.: 101.5 µg/kg, sample year: 2002–2011, country: Brazil¹⁵⁹⁰, *peanut products (peanut butter and peanut candies)

AFLATOXINS

incidence: 1/6*, conc.: 2 µg/kg, sample year: 1986, country: USA¹⁹⁷, *peanut products

incidence: 49/100*, conc. range: 0.1–5 µg/kg (14 sa), 6–10 µg/kg (10 sa), 11–20 µg/kg (3 sa), 21–35 µg/kg (17 sa), >50 µg/kg (5 sa), sample year: 1995–1999, country: Malaysia³⁹¹, *peanut products

Product (oat products) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 87/335*, conc. range: 10–404 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON, HT-2, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 15-AcDON, HT-2, and NIV, 1 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with DON, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 15-AcDON, and NIV, 3 sa co-contaminated with DON, HT-2, and NIV, 6 sa co-contaminated with DON, HT-2, and T-2, 1 sa co-contaminated with DON and 3-AcDON, 2 sa co-contaminated with DON and 15-AcDON, 9 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with DON and NEO, 11 sa co-contaminated with DON and NIV, 4 sa co-contaminated with DON and T-2, 45 sa contaminated solely with DON)

3-ACETYLDEOXYNIVALENOL

incidence: 1/335*, conc.: 38 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON and 3-AcDON)

15-ACETYLDEOXYNIVALENOL

incidence: 4/335*, conc. range: 16–41 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON, 15-AcDON, HT-2, and NIV, 1 sa co-contaminated with DON, 15-AcDON, and NIV, 2 sa co-contaminated with DON and 15-AcDON)

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 2/335*, conc. range: 17–18 µg/kg, Ø conc.: 17.5 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with FUS-X and HT-2, 1 sa contaminated solely with FUS-X)

HT-2 TOXIN

incidence: 103/335*, conc. range: 10–72 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON, HT-2, NIV, T-2 and T-2TRI, 1 sa co-contaminated with DON, 15-AcDON, HT-2, and NIV, 1 sa co-contaminated with DON, HT-2, NIV, and T-2, 3 sa co-contaminated with DON, HT-2, and NIV, 6 sa co-contaminated with DON, HT-2, and T-2, 2 sa co-contaminated with HT-2, NIV, and T-2, 9 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with FUS-X and HT-2, 2 sa co-contaminated with HT-2 and NIV, 41 sa co-contaminated with HT-2 and T-2, 36 sa contaminated solely with HT-2)

NEOSOLANIOL

incidence: 1/335*, conc.: 17 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON and NEO)

NIVALENOL

incidence: 30/335*, conc. range: 10–33 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON, HT-2, NIV, T-2 and T-2TRI, 1 sa co-contaminated with DON, 15-AcDON, HT-2, and NIV, 1 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with DON, NIV, T-2, and T-2TRI, 1 sa co-contaminated with DON, 15-AcDON, and NIV, 3 sa co-contaminated with DON, HT-2, and NIV, 2 sa co-contaminated with HT-2, NIV, and

T-2, 11 sa co-contaminated with DON and NIV, 2 sa co-contaminated with HT-2 and NIV, 1 sa co-contaminated with NIV and T-2, 6 sa contaminated solely with NIV) incidence: 1/6*, conc.: 472 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *oat-based products

T-2 TOXIN

incidence: 59/335*, conc. range: 11–61 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON, HT-2, NIV, T-2 and T-2TRI, 1 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with DON, NIV, T-2, and T-2TRI, 6 sa co-contaminated with DON, HT-2, and T-2, 2 sa co-contaminated with HT-2, NIV, and T-2, 4 sa co-contaminated with DON and T-2, 41 sa co-contaminated with HT-2 and T-2, 1 sa co-contaminated with NIV and T-2, 2 sa contaminated solely with T-2)

T-2 TRIOL

incidence: 2/335*, conc. range: 18–23 µg/kg, sample year: 2003, country: UK⁸⁴¹, *products such as porridge oats, biscuits, cereals and baby food (1 sa co-contaminated with DON, HT-2, NIV, T-2 and T-2TRI, 1 sa co-contaminated with DON, NIV, T-2, and T-2TRI)

Product (potato products) may contain the following mycotoxins:

Fusarium* Toxins*HT-2 TOXIN**

incidence: 1/21, conc.: 5 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

SCIRPENOL

incidence: 2/21, conc.: 23–35 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

MONOACETOXYSCIRPENOL

incidence: 3/21, conc.: 5–26 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

DIACETOXYSCIRPENOL

incidence: 1/21, conc.: 21 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

ZEARALENONE

incidence: 1/21, conc.: 2 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰

Product (rice products) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 4/93*, conc. range: ≤14.25 µg/kg, Ø conc.: 10.03 µg/kg, sample year: 1977, country: Taiwan¹⁴⁴⁶, *included Chinese dry rice-noodles, cooked and canned rice and various other kinds of rice products

incidence: 2/2, conc. range: 2.0–4.0 µg/kg (1 sa), 7.0 µg/kg (1 sa), sample year: 1998–1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia

Fusarium Toxins

NIVALENOL

incidence: 6/21*, conc. range: 100–356 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *rice-based products

Product (rye products) may contain the following mycotoxins:

Aspergillus and Penicillium Toxins

OCHRATOXIN A

incidence: 3/3, conc. range: 0.07–0.10 µg/kg, sample year: unknown, country: China¹⁰³¹

Fusarium Toxins

NIVALENOL

incidence: 2/3*, conc. range: 129–482 µg/kg, Ø conc.: 305.5 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *rye-based products

Product (sesame products) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 5/130, conc. range: 1 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

Product (snack products) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 37/44, conc. range: 10–25 µg/kg (12 sa), 25.1–50 µg/kg (5 sa), 50.1–75 µg/kg (1 sa), 75.1–100 µg/kg (1 sa), 100.1–250 µg/kg (17 sa), 275 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (6 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 7 sa co-contaminated with DON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, 15-AcDON, and NIV, 1 sa co-contaminated with DON and 15-AcDON, 2 sa co-contaminated with DON and NIV, 20 sa contaminated solely with DON)

15-ACETYLDEOXYNIVALENOL

incidence: 15/44, conc. range: 10–25 µg/kg (2 sa), 25.1–50 µg/kg (11 sa), 50.1–75 µg/kg (2 sa, maximum: 59 µg/kg), sample year: 2000/2001, country: UK⁸³⁶ (6 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 7 sa co-contaminated with DON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, 15-AcDON, and NIV, 1 sa co-contaminated with DON and 15-AcDON)

NIVALENOL

incidence: 9/44, conc. range: 10–25 µg/kg (9 sa), 58 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (6 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 1 sa co-contaminated with DON, 15-AcDON, and NIV, 2 sa co-contaminated with DON and NIV)

ZEARALENONE

incidence: 13/44, conc. range: 10–25 µg/kg (11 sa), 25.1–50 µg/kg (1 sa), 55.8 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶ (6 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 7 sa co-contaminated with DON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON, 15-AcDON, and NIV)

Product (sorghum products) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 1/4*, conc.: 6.4 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *sorghum-based products

AFLATOXIN G₁

incidence: 1/4*, conc.: 62.2 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *sorghum-based products

Fusarium Toxins**BEAUVERICIN**

incidence: 1/4*, conc.: 4.4 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *sorghum-based products

NIVALENOL

incidence: 4/4*, conc. range: 418–667 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *sorghum-based products

Product (spelt products) may contain the following mycotoxins:

Fusarium Toxins**NIVALENOL**

incidence: 2/10*, conc. range: 105–286 µg/kg, Ø conc.: 195.5 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *spelt-based products

Product (wheat products) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 10/65, conc. range: 5.5–66.7 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

AFLATOXIN B₂

incidence: 2/65, conc. range: 5.6–7.6 µg/kg, Ø conc.: 6.6 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

AFLATOXIN G₂

incidence: 6/65, conc. range: 4.2–18.7 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

AFLATOXIN

incidence: 7/20, Ø conc.: 1.1 µg/kg*, sample year: unknown, country: Philippines⁹⁵⁶, *of pos sa?

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 4/4*, conc. range: 0.8–2.7 µg/kg, Ø conc.: 1.7 µg/kg, sample year: unknown, country: Switzerland⁵⁷⁸, *durum wheat grits

incidence: 10/10*, conc. range: 0.2–3.5 µg/kg, Ø conc.: 1.4 µg/kg, sample year:

unknown, country: Switzerland⁵⁷⁸, *pasta

incidence: 2/65*, conc. range: 99.6–112 µg/kg, Ø conc.: 105.8 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area, *wheat-based products

incidence: 29/48, conc. range: ≤0.25 µg/kg, sample year: unknown, country: China¹⁰³¹

Fusarium Toxins**BEAUVERICIN**

incidence: 12/65, conc. range: 6.2–844 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

DEOXYNIVALENOL

incidence: 4/65, conc. range: 63.2–296 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 10/37, conc. range: 190–1,200 µg/kg, sample year: 1994, country: USA¹⁴⁵⁵

FUMONISIN B₁

incidence: 2/65, conc. range: <LOQ–184 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

FUMONISIN B₂

incidence: 1/13*, conc.: 6.4 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia, *included pasta and semolina

HT-2 TOXIN

incidence: 3/65, conc. range: <LOQ–83.0 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

NIVALENOL

incidence: 40/65, conc. range: 117–961 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

DIACETOXYSCIRPENOL

incidence: 2/65, conc. range: 65.0–84.0 µg/kg, Ø conc.: 74.5 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

T-2 TOXIN

incidence: 1/65, conc.: 33.8 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

Prune see Fruit (prune)

Pudding, creme may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 27/32*, conc. range: ≤0.080 µg/kg, sample year: unknown, country: Germany⁵⁹², *choco crèmes

incidence: 7/32*, conc. range: ≤0.090 µg/kg, sample year: unknown, country: Germany⁵⁹², *different puddings and crèmes

Pulp (apple pulp) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/1, conc.: pr, sample year: unknown, country: Denmark⁸⁹³

Pulp (grape pulp) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 14/16*, conc. range: 0.0212–0.0354 µg/l, Ø conc.: 0.0283 µg/l, sample year: unknown, country: Brazil/Argentina²⁶⁰, sa from Brazil, *frozen grape pulp

Pulp (plum pulp) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/1*, conc.: 0.8 µg/kg, country: sample year: 1996/1997, Germany⁷⁰⁵, *commercial product

Pulp (tomato pulp) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 7/12, conc. range: 39–111 µg/kg, Ø conc.: 73.6 µg/kg, sample year: 1994/1995, country: Brazil³³²

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 6/12, conc. range: 64–178 µg/kg, Ø conc.: 109.2 µg/kg, sample year: 1994/1995, country: Brazil³³²

Pulses may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/103*, conc.: 0.840 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *peas, lentils, beans
incidence: 2/64, conc. range: 13.7–15.4 µg/kg, Ø conc.: 14.55 µg/kg, sample year: 1996, country: UK⁷⁴²

Pumpernickel see Bread

Puree may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 5/80*, conc. range: 187–8,756 µg/kg, Ø conc.: 2,219.4 µg/kg, sample year: 2006, country: Argentina⁹⁸⁷, *tomato puree (2 sa co-contaminated with AOH and TA, 2 sa co-contaminated with AOH and AME, 1 sa contaminated solely with AOH)

incidence: 2/3, conc. range: 3.8–5.9 µg/kg, Ø conc.: 4.85 µg/kg, sample year: unknown, country: Germany¹²¹² (2 sa co-contaminated with AME and AOH)

incidence: 11/17*, conc. range: 4–33 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomatoe puree, tomato concentrates

ALTERNARIOL METHYL ETHER

incidence: 21/80*, conc. range: 84–1,734 µg/kg, Ø conc.: 593.4 µg/kg, sample year: 2006, country: Argentina⁹⁸⁷, *tomato puree (6 sa co-contamination with AME and TA, 2 sa co-contamination with AME and AOH, 13 sa contamination solely with AME)

incidence: 2/3, conc. range: 0.2–0.5 µg/kg, Ø conc.: 0.35 µg/kg, sample year: unknown, country: Germany¹²¹² (2 sa co-contaminated with AME and AOH)

incidence: 12/17*, conc. range: 1–9 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomatoe puree, tomato concentrates

TENTOXIN

incidence: 6/17*, conc. range: 1–3 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomatoe puree, tomato concentrates

TENUAZONIC ACID

incidence: 4/4*, conc. range: 29–76 µg/kg, Ø conc.: 53 µg/kg, sample year: 1994/1995, country: Brazil³³², *tomato puree

incidence: 23/80*, conc. range: 39–4,021 µg/kg, Ø conc.: 774.9 µg/kg, sample year: 2006, country: Argentina⁹⁸⁷, *tomato puree (6 sa co-contamination with AME and TA, 2 sa co-contamination with AOH and TA, 15 sa contamination solely with TA)

incidence: 17/17*, conc. range: 2–790 µg/kg, Ø conc.: 165 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomatoe puree, tomato concentrates

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 2/4*, conc. range: 36–117 µg/kg, Ø conc.: 76.5 µg/kg, sample year: 1994/1995, country: Brazil³³², *tomato puree

OCHRATOXIN A

incidence: 5/5*, conc. range: 2.3–13.9 µg/kg, Ø conc.: 9.08 µg/kg, sample year: unknown, country: Italy¹⁵⁰³, *red grape berries puree

PATULIN

incidence: 4/8*, conc. range: 22–221 µg/kg, Ø conc.: 123.0 µg/kg, sample year: unknown, country: Argentina¹⁰⁹⁴, *apple puree

incidence: 1/15* **, conc.: 0.7 µg/kg, sample year: 2003/2004, country: Italy¹³²⁷, *fruit puree, **conventional

incidence: 9/25* **, conc. range: >LOQ to <10 µg/kg (8 sa), 13.0 µg/kg (1 sa), sample year: 2003/2004, country: Italy¹³²⁷, *fruit puree, **organic

incidence: 5/76*, conc. range: LOD–LOQ (3 sa), LOQ–10 µg/kg (2 sa, maximum: 5.7 µg/kg), sample year: 2007–2009, country: Portugal¹⁶⁴³, *apple puree

Quince see Fruit (quince)

Ragi see Millet

Raisin may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/52, conc.: 0.06 µg/kg, sample year: 1989/1990, country: France³⁹⁷

incidence: 3/8, conc. range: 15–180 µg/kg, sample year: 1983–1985, country: India⁸⁰²

incidence: 4/20*, conc. range: ≤13.9 µg/kg, Ø conc.: 10.7 µg/kg, sample year: 2006, country: Spain/Morocco⁹⁴¹, sa from Morocco, *dried raisins

incidence: 6/20*, conc. range: 130–350 µg/kg, sample year: 2002/2003, country: Yemen¹⁵²⁴, *dried raisins

AFLATOXIN B₂

incidence: 2/8, conc. range: 16–150 µg/kg, Ø conc.: 83 µg/kg, sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN G₁

incidence: 2/8, conc. range: 15–80 µg/kg, Ø conc.: 47.5 µg/kg, sample year: 1983–1985, country: India⁸⁰²

AFLATOXIN G₂

incidence: 1/8, conc.: 15 µg/kg, sample year: 1983–1985, country: India⁸⁰²

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/10, conc. range: 2.6–7.5 µg/kg, Ø conc.: 5.05 µg/kg, sample year: 2009, country: Pakistan¹⁵³²

AFLATOXINS (TOTAL)

incidence: 4/20*, conc. range: ≤13.9 µg/kg, Ø conc.: 10.7 µg/kg, sample year:

2006, country: Spain/Morocco⁹⁴¹, sa from Morocco, *dried raisins

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 96/118*, conc. range: ≤34.6 µg/kg, sample year: 1999–2002, country: Sweden²⁵³, *raisins and currants

incidence: 101/106*, conc. range: ≤21.40 µg/kg, sample year: unknown, country: Germany⁵⁹², *raisins and currants

incidence: 4/20, conc. range: 4.6–9.9 µg/kg, Ø conc.: 6.95 µg/kg, sample year: unknown, country: UK⁶³⁵, sa from different countries

incidence: 98/101, conc. range: 0.1 µg/kg (5 sa), 0.2–4.0 µg/kg (73 sa), 4.1–10 µg/kg (13 sa), 10.1–20 µg/kg (6 sa), 29.8 µg/kg (1 sa), sample year: 1998, country: UK⁶³⁸, sa from different countries

incidence: 1/8, conc.: pr, sample year: 1983–1985, country: India⁸⁰²

incidence: 6/20*, conc. range: 0.05–4.95 µg/kg, Ø conc.: 0.96 µg/kg, sample year: 2005, country: Morocco⁸⁵⁹, *dried raisins

incidence: 2/7*, conc. range: 0.93–1.20 µg/kg, Ø conc.: 1.07 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *grape raisins

incidence: 31/52, conc. range: ≤12.5 µg/kg, Ø conc.: 0.93 µg/kg, sample year: 2004–2007, country: Japan⁹⁰⁰

incidence: 10/11*, conc. range: 0.02–0.25 µg/kg, Ø conc.: 0.069 µg/kg, sample year: unknown, country: Morocco/France⁹⁴², sa from Morocco, *dried raisins

incidence: 6/13, conc. range: 0.14–0.70 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

incidence: 10/11, conc. range: 0.02–12.5 µg/kg, Ø conc.: 1.73 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵

incidence: 67/85, conc. range: ≤26.6 µg/kg, Ø conc.: 2.29 µg/kg, sample year: 1998–2000, country: Canada¹²³⁸, sa from different countries

incidence: 1/1*, conc.: 4.2 µg/kg, sample year: unknown, country: Taiwan/Russia¹⁵⁰², sa from Taiwan, *black raisin
 incidence: 4/4, conc. range: 0.02–5.7 µg/kg, Ø conc.: 1.56 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴

Fusarium Toxins

FUMONISIN B₁

incidence: 7/7, conc. range: 243.42–17,321.51 µg/kg, Ø conc.: 2,923.83 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅, 1 sa co-contaminated with FB₁, FB₂, FB₃, 3-epi-FB₃, FB₄, and 3-epi-FB₄, 3 sa co-contaminated with FB₁, FB₂, FB₃, FB₄, and 3-epi-FB₄, 1 sa co-contaminated with FB₁, FB₂, FB₃, and FB₄, 1 sa co-contaminated with FB₁, FB₂, and FB₃)

ISO-FUMONISIN B₁

incidence: 1/7, conc.: 68.08 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅)

FUMONISIN B₂

incidence: 7/7, conc. range: 157.14–11,515.78 µg/kg, Ø conc.: 2,279.09 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅, 1 sa co-contaminated with FB₁, FB₂, FB₃, 3-epi-FB₃, FB₄, and 3-epi-FB₄, 3 sa co-contaminated with FB₁, FB₂, FB₃, FB₄, and 3-epi-FB₄, 1 sa co-contaminated with FB₁, FB₂, FB₃, and FB₄, 1 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 10/21, conc. range: <LOQ–7.5 µg/kg, sample year: unknown, country: Denmark⁹⁵⁰, sa from Chile (5 sa,

2 sa contaminated), China (1 sa), Greece (1 sa), South Africa (2 sa thereof 1 organic), Turkey (3 sa thereof 2 organic, 1 sa conventional contaminated), and USA (9 sa thereof 4 organic, 7 sa contaminated thereof 3 organic) (9 sa co-contaminated with FB₂ and FB₄, 1 sa contaminated solely with FB₂)

ISO-FUMONISIN B_{2,3}

incidence: 1/7, conc.: 163.40 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅)

FUMONISIN B₃

incidence: 7/7, conc. range: 50.27–3,716.03 µg/kg, Ø conc.: 683.67 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅, 1 sa co-contaminated with FB₁, FB₂, FB₃, 3-epi-FB₃, FB₄, and 3-epi-FB₄, 3 sa co-contaminated with FB₁, FB₂, FB₃, FB₄, and 3-epi-FB₄, 1 sa co-contaminated with FB₁, FB₂, FB₃, and FB₄, 1 sa co-contaminated with FB₁, FB₂, and FB₃)

3-epi-FUMONISIN B₃

incidence: 2/7, conc.: 62.38–489.93 µg/kg, Ø conc.: 276.15 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅, 1 sa co-contaminated with FB₁, FB₂, FB₃, 3-epi-FB₃, FB₄, and 3-epi-FB₄)

FUMONISIN B₄

incidence: 6/7, conc. range: 59.58–1,483.92 µg/kg, Ø conc.: 397.33 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown

origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅, 1 sa co-contaminated with FB₁, FB₂, FB₃, 3-epi-FB₃, FB₄, and 3-epi-FB₄, 3 sa co-contaminated with FB₁, FB₂, FB₃, FB₄, and 3-epi-FB₄, 1 sa co-contaminated with FB₁, FB₂, FB₃, and FB₄)

incidence: 9/21, conc. range: <LOQ–1.3 µg/kg, sample year: unknown, country: Denmark⁹⁵⁰, sa from Chile (5 sa, 1 sa contaminated), China (1 sa), Greece (1 sa), South Africa (2 sa thereof 1 organic), Turkey (3 sa thereof 2 organic, 1 sa conventional contaminated), and USA (9 sa thereof 4 organic, 7 sa contaminated thereof 3 organic) (9 sa co-contaminated with FB₂ and FB₄)

3-epi-FUMONISIN B₄

incidence: 5/7, conc. range: 30.19–673.10 µg/kg, Ø conc.: 205.81 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅, 1 sa co-contaminated with FB₁, FB₂, FB₃, 3-epi-FB₃, FB₄, and 3-epi-FB₄, 3 sa co-contaminated with FB₁, FB₂, FB₃, FB₄, and 3-epi-FB₄)

FUMONISIN B₅

incidence: 1/7, conc.: 43.80 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅)

ISO-FUMONISIN B₅

incidence: 1/7, conc.: 11.99 µg/kg, sample year: unknown, country: Hungary⁶⁴⁰, sa from China, India, Iran, South Africa, Turkey, USA, and unknown origin (1 sa co-contaminated with FB₁, iso-FB₁, FB₂, iso-FB_{2,3}, FB₃, 3-epi-FB₃, FB₄, 3-epi-FB₄, FB₅, and iso-FB₅)

see also Currant and Sultana

Rape see Oilseed

Raspberries see Berry (rasberries)

Ras cheese see Cheese (Ras cheese)

Red mold rice see Angkak (red mold rice)

Red pepper flour see Pepper

Red pepper paste see Pepper

Red wine see Wine, red

Retsina see Wine, white

Rice may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 2/10, Ø conc.: 100 µg/kg, sample year: unknown, country: Egypt²⁹¹

TENUAZONIC ACID

incidence: 2/10, Ø conc.: 172.8 µg/kg, sample year: unknown, country: Egypt²⁹¹

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/50, conc.: 28 µg/kg, sample year: unknown, country: Egypt⁴³, sa from Italy

incidence: 18/715, conc. range: 1–10 µg/kg (15 sa), >10–20 µg/kg (3 sa), sample year: during the 1990s, country: Cuba⁴⁷

incidence: 6/8*, conc. range: tr–15 µg/kg, sample year: unknown, country: USA⁹², sa from Nepal, *raw rice

incidence: 4/4*, conc. range: tr–12.5 µg/kg, sample year: unknown, country: USA⁹², sa from Nepal, *parboiled rice

incidence: 2/74, conc. range: 0.3–2.7 µg/kg, Ø conc.: 1.5 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 1/1, conc.: 8 µg/kg, sample year: unknown, country: Japan¹³⁵, sa from Egypt

incidence: 3/39*, conc. range: 285–498.9 µg/kg, Ø conc.: 381.3 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *paddy rice (1 sa co-contaminated with AFB₁ and AFG₁, 2 sa contaminated solely with AFB₁)

incidence: 2/13, conc. range: 1–50 µg/kg (2 sa, maximum: 50 µg/kg), Ø conc.: 35 µg/kg, sample year: 1970–1980, country: India¹⁷⁴

incidence: ?/8, conc. range: 81–150 µg/kg, sample year: 1977/1978, country: Nigeria¹⁷⁷

incidence: 2/8, conc. range: 182.4–225.9 µg/kg, Ø conc.: 204.2 µg/kg, sample year: unknown, country: Taiwan¹⁹⁰

incidence: 7/30, conc. range: 0.3–2.0 µg/kg, Ø conc.: 1.1 µg/kg, sample year: unknown, country: USA/China²⁰⁷, sa from China

incidence: 581/1,511*, conc. range: ≥5–361 µg/kg, sample year: unknown, country: India²⁸⁴, *parboiled rice

incidence: 4/40*, conc. range: 1.0–13.6 µg/kg, Ø conc.: 7.13 µg/kg, sample year: unknown, country: Colombia²⁹⁶, *rice and rice products

incidence: 160/250*, conc. range: 1–2 µg/kg (5 sa), 2.1–4 µg/kg (6 sa), 4.1–6 µg/kg (11 sa), 6.1–8 µg/kg (13 sa), 8.1–10 µg/kg (13 sa), 12.1–14 µg/kg (28 sa), 14.1–16 µg/kg (50 sa), 16.1–18 µg/kg (34 sa), sample year: 1992–1994, country: UAE/UK²⁹⁷, sa from UAE, *long grain rice

incidence: 81/250*, 1–2 µg/kg (2 sa), 2.1–4 µg/kg (5 sa), 4.1–6 µg/kg (8 sa), 6.1–8 µg/kg (5 sa), 8.1–10 µg/kg (6 sa), 12.1–14 µg/kg (20 sa), 14.1–16 µg/kg (9 sa), 16.1–18 µg/kg (26 sa), sample year: 1992–1994, country: UAE/UK²⁹⁷, sa from UAE, *short grain rice

incidence: 5/88, conc. range: 1.8–7.3 µg/kg, Ø conc.: 4.3 µg/kg, sample year: 2002, country: Korea²⁹⁹

incidence: 19/41*, conc. range: 21–100 µg/kg (4 sa), 101–500 µg/kg (11 sa), 501–1,000 µg/kg (3 sa), 1,134 µg/kg (1 sa), sample year: 1987, country: India³⁹⁸, paddy rice

incidence: 10/10, conc. range: <1.5–10 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (10 sa co-contaminated with AFB₁, OTA, and ZEA)

incidence: 1/?, conc.: tr, sample year: 1979, country: Kenya⁷⁴⁶

incidence: 9/32*, conc. range: 15–620 µg/kg, sample year: 1981, country: India⁷⁸⁹, *broken rice

incidence: 2/52*, conc. range: 26–38 µg/kg, Ø conc.: 32 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *polished rice (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa contaminated solely with AFB₁)

incidence: 2/25*, conc. range: 0.2 to <0.5 µg/kg (2 sa, maximum: 0.3 µg/kg), sample year: unknown, country: UK⁸³⁵, *long grain rice

incidence: 2/23*, conc. range: 0.2 to <0.5 µg/kg (2 sa, maximum: 0.3 µg/kg), sample year: unknown, country: UK⁸³⁵, *easy cook rice

incidence: 9/18*, conc. range: 0.2 to <0.5 µg/kg (6 sa), 0.5 to <1 µg/kg (1 sa), 1 to <2 µg/kg (2 sa, maximum: 1.7 µg/kg), sample year: unknown, country: UK⁸³⁵, *basmati rice (1 sa co-contaminated with AFB₁ and AFB₂, 8 sa contaminated solely with AFB₁)

incidence: 3/6*, conc. range: 0.2 to <0.5 µg/kg (2 sa), 1.6 µg/kg (1 sa), sample year: unknown, country: UK⁸³⁵, *brown rice (1 sa co-contaminated with AFB₁ and AFB₂, 2 sa co-contaminated solely with AFB₁)

incidence: 1/3*, conc.: 0.2 µg/kg, sample year: unknown, country: UK⁸³⁵, *ground rice

incidence: 56/99, conc. range: ≤7.14 µg/kg*, Ø conc.: 0.34 µg/kg, sample year:

2008, country: Canada⁸⁹⁷, sa from USA and Asian countries, *brown basmati rice from India

incidence: 43/100, conc. range: ≤ 3.48 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.39 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Canada⁸⁹⁷, sa from USA and Asian countries

incidence: 3/3*, conc. range: 2.86–7.42 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.97 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain⁹⁰⁶, *rice unfit for human consumption

incidence: 24*/81, conc. range: ≤ 9.86 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Austria/Germany⁹⁰⁷, sa from Egypt, India, and Pakistan, *22 basmati rice sa and 2 long grain rice sa (15 sa co-contaminated with AFB₁ and AFB₂, 9 sa contaminated solely with AFB₁)

incidence: 814/1,200*, conc. range: 0.1–308.0 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India⁹¹², *paddy (675 sa, 477 sa contaminated) and milled rice (525 sa, 337 sa contaminated)

incidence: 180/261, conc. range: 0.2–4.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.72 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Iran⁹⁶³

incidence: 16/84, conc. range: 0.15–3.22 $\mu\text{g}/\text{kg}$, sample year: unknown, country: China⁹⁷²

incidence: 2/100, conc. range: 26.0–33.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 29.5 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 10/10*, conc. range: 4.0–304.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 60.3 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 6/6*, conc. range: 5.6–17.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 12.2 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *stored sa

incidence: 5/5*, conc. range: 9.9–34.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 21.0 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *market sa

incidence: 72/597*, conc. range: ≤ 30 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sri Lanka¹⁰⁰⁶, *raw and parboiled rice

incidence: 1/25, conc.: 8.00 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8.00 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁰²³

incidence: 3/49*, conc. range: tr–40 $\mu\text{g}/\text{kg}$, sample year: 1982–1986, country: India¹⁰²⁴, *raw rice

incidence: 6/241*, conc. range: 30–35 $\mu\text{g}/\text{kg}$, sample year: 1982–1986, country: India¹⁰²⁴, *parboiled rice

incidence: 3/47*, conc. range: tr–20 $\mu\text{g}/\text{kg}$, sample year: 1982–1986, country: India¹⁰²⁴, *paddy grains

incidence: 58/100*, conc. range: 1.0–2.0 $\mu\text{g}/\text{kg}$ (44 sa), > 2.0 $\mu\text{g}/\text{kg}$ (14 sa, maximum: 17.2 $\mu\text{g}/\text{kg}$), sample year: 2006, country: Turkey¹⁰³⁷, *rice from open packages

incidence: 52/73*, conc. range: 0.1–9.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.2 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *basmati rice with the higher fibre content excluded

incidence: 54/76*, conc. range: 0.1–46.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.0 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *basmati rice with the higher fibre content included

incidence: 1/8*, conc.: 23.2 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *jasmin rice with the higher fibre content excluded

incidence: 2/10*, conc. range: 7.4–23.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 15.4 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *jasmin rice with the higher fibre content included

incidence: 3/12*, conc. range: 0.6–46.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18.1 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *high fiber content rice

incidence: 312/329*, conc. range: 0–50 $\mu\text{g}/\text{kg}$ (118 sa), 51–250 $\mu\text{g}/\text{kg}$ (180 sa), 251–1,000 $\mu\text{g}/\text{kg}$ (11 sa), $> 1,000$ $\mu\text{g}/\text{kg}$ (3 sa),

sample year: unknown, country: Sri Lanka/USA¹¹⁴², sa from Sri Lanka, *parboiled rice

incidence: 156/156*, conc. range: 0–50 µg/kg (143 sa), 51–250 µg/kg (10 sa), 251–1,000 µg/kg (3 sa), sample year: unknown, country: Sri Lanka/USA¹¹⁴², sa from Sri Lanka, *raw rice

incidence: 1/40*, conc.: 10 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *polished and glutinous rice as well as rice products (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 5/20*, conc. range: 0.1–0.3 µg/kg, sample year: 2002, country: Japan¹²⁴⁸, sa from Bangladesh (1 sa), Pakistan (2 sa, 2 sa contaminated), and Thailand (17 sa, 3 sa contaminated), *polished rice

incidence: 59/72, conc. range: ≤10 µg/kg, sample year: 2006/2007, country: Iran¹²⁶⁰, sa imported

incidence: 37/50*, conc. range: ≤29.82 µg/kg, Ø conc.: 4.13 µg/kg**, sample year: unknown, country: Vietnam/France¹²⁹⁶, sa from Vietnam, *rainy season, **average take into account only sa above LOQ

incidence: 13/50*, conc. range: ≤4.44 µg/kg, Ø conc.: 2.11 µg/kg**, sample year: unknown, country: Vietnam/France¹²⁹⁶, sa from Vietnam, *dry season, **average take into account only sa above LOQ

incidence: 18/60*, conc. range: 0.06–1.15 µg/kg, Ø conc.: 0.28 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China, *long rice

incidence: 9/60*, conc. range: 0.06–0.31 µg/kg, Ø conc.: 0.19 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China, *round rice

incidence: 29/29, conc. range: 0.1–1.4 µg/kg, sample year: unknown, country: China¹⁴³⁷ (26 sa co-contaminated with AFB₁ and FB₁, 3 sa contaminated solely with AFB₁)

incidence: 5/170*, conc. range: ≤3.20 µg/kg, Ø conc.: 3.20 µg/kg, sample year: 1976, country: Taiwan¹⁴⁴⁶, *ration rice for soldiers, government employees and teachers

incidence: 67/166, conc. range: ≥0.06 to ≤10.00 µg/kg (52 sa), >10.00 to ≤20.00 µg/kg (7 sa), >20.00 to ≤30.00 µg/kg (3 sa), >30.00 µg/kg (5 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰

incidence: 17/18*, conc. range: ≥0.06 to ≤10.00 µg/kg (13 sa), >10.00 to ≤20.00 µg/kg (4 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰, *broken rice

incidence: 26/63*, conc. range: tr–12.8 µg/kg, sample year: unknown, country: Belgium/Russia/Korea¹⁵¹¹, *ncac

AFLATOXIN B₂

incidence: 1/4*, conc.: 1.8 µg/kg, sample year: unknown, country: USA⁹², sa from Nepal, *parboiled rice

incidence: 2?/74, conc. range: <0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 1/1, conc.: 2 µg/kg, sample year: unknown, country: Japan¹³⁵, sa from Egypt

incidence: 6/32*, conc. range: 10–220 µg/kg, sample year: 1981, country: India⁷⁸⁹, *broken rice

incidence: 1/52*, conc.: 15 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *polished rice (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 1/18*, conc.: 0.2 µg/kg, sample year: unknown, country: UK⁸³⁵, *basmati rice (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/6*, conc.: 0.2 µg/kg, sample year: unknown, country: UK⁸³⁵, *brown rice (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 23/100, conc. range: 0.002–0.63 µg/kg, sample year: 2009, country: Canada⁸⁹⁷, sa from USA and Asian countries

incidence: 3/3*, conc. range: 0.51–0.97 µg/kg, Ø conc.: 0.68 µg/kg, sample year: unknown, country: Spain⁹⁰⁶, sa imported?, *rice unfit for human consumption

incidence: 15*/81, conc. range: ≤1.53 µg/kg, sample year: unknown, country: Austria/Germany⁹⁰⁷, sa from Egypt, India, and Pakistan, *in most cases basmati rice (13 sa) but also long grain rice (2 sa) (14 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₂ and AFG₂)

incidence: 26/261, conc. range: 0.1–1 µg/kg, Ø conc.: 0.2 µg/kg, sample year: unknown, country: Iran⁹⁶³

incidence: 3/84, conc. range: 0.06–0.24 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 1/100, conc.: 7.5 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 10/10*, conc. range: 1.3–22.8 µg/kg, Ø conc.: 10.0 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 6/6*, conc. range: 3.7–13.1 µg/kg, Ø conc.: 7.7 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *stored sa

incidence: 5/5*, conc. range: 2.5–11.2 µg/kg, Ø conc.: 5.4 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *market sa

incidence: ?/73*, conc. range: 0.1–1.1 µg/kg, Ø conc.: 0.3 µg/kg, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *basmati rice with the higher fibre content excluded

incidence: ?/76*, conc. range: 0.1–4.5 µg/kg, Ø conc.: 0.5 µg/kg, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *basmati rice with the higher fibre content included

incidence: 1/8*, conc.: 2.1 µg/kg, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *jasmin rice with the higher fibre content excluded

incidence: ?/10*, conc. range: 0.6–2.1 µg/kg, Ø conc.: 1.4 µg/kg, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *jasmin rice with the higher fibre content included

incidence: 3/12*, conc. range: 0.1–4.5 µg/kg, Ø conc.: 1.7 µg/kg, sample year: unknown, country: Sweden¹⁰⁹¹, sa imported, *high fibre content rice

incidence: 1/20*, conc.: 0.1 µg/kg, sample year: 2002, country: Japan¹²⁴⁸, sa from Bangladesh (1 sa), Pakistan (2 sa), and Thailand (17 sa, 1 sa contaminated), *polished rice

incidence: 5/72, conc. range: ≤8.41 µg/kg, sample year: 2006/2007, country: Iran¹²⁶⁰, sa imported

AFLATOXIN G₁

incidence: 2/84, conc. range: 73.1–77.5 µg/kg, Ø conc.: 75.3 µg/kg, sample year: unknown, country: Malaysia³

incidence: 2/74, conc. range: ≤0.9 µg/kg, Ø conc.: 0.5 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 1/39*, conc.: 32.5 µg/kg, sample year: 1978/1979, country: Egypt¹⁴⁴, *paddy rice (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 1/52*, conc.: 20 µg/kg, sample year: 1985/1986, country: Brazil⁸¹⁶, *polished rice (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 1/261, conc.: 0.2 µg/kg, sample year: unknown, country: Iran⁹⁶³

incidence: 7/84, conc. range: 0.36–1.59 µg/kg, sample year: unknown, country: China⁹⁷²

incidence: 2/100, conc. range: 35.4–46.5 µg/kg, Ø conc.: 40.95 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 10/10*, conc. range: 8.4–76.8 µg/kg, Ø conc.: 33.2 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 6/6*, conc. range: 7.7–17.4 µg/kg, Ø conc.: 13.9 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *stored sa

incidence: 5/5*, conc. range: 5.5–15.6 µg/kg, Ø conc.: 9.5 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *market sa

incidence: 4/40*, conc. range: 20–50 µg/kg, Ø conc.: 40 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *polished and glutinous rice as well as rice products (1 sa co-contaminated with AFB₁ and AFG₁, 3 sa contaminated solely with AFG₁)

incidence: 6/72, conc. range: ≤0.79 µg/kg, sample year: 2006/2007, country: Iran¹²⁶⁰, sa imported

AFLATOXIN G₂

incidence: 3/84, conc. range: 3.69–96.25 µg/kg, Ø conc.: 45.6 µg/kg, sample year: unknown, country: Malaysia³

incidence: 1*/81, conc.: <LOQ µg/kg, sample year: unknown, country: Austria/Germany⁹⁰⁷, sa from Egypt, India, and Pakistan, *basmati rice (1 sa co-contaminated with AFB₂ and AFG₂)

incidence: 4/100, conc. range: 4.4–18.2 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 10/10*, conc. range: 3.6–44.4 µg/kg, Ø conc.: 17.9 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 6/6*, conc. range: 4.4–36.5 µg/kg, Ø conc.: 16.5 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *stored sa

incidence: 5/5*, conc. range: 8.7–12.2 µg/kg, Ø conc.: 6.0 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *market sa

incidence: 6/72, conc. range: ≤0.19 µg/kg, sample year: 2006/2007, country: Iran¹²⁶⁰, sa imported

AFLATOXIN

incidence: 1/72*, conc.: 33 µg/kg, sample year: 1967–1969, country: USA³², sa from Philippines, *included rice and rice products

incidence: 29/433* **, conc. range: tr–1,130 µg/kg, sample year: 1975–1977, country: India³²⁰, *ncac, **rough rice

incidence: 4/238* **, conc. range: tr–120 µg/kg, sample year: 1974/1981/1983/1987, country: India³²⁰, *ncac, **raw rice

incidence: 25/142* **, conc. range: tr–130 µg/kg, sample year: 1974/1976/1981/1988, country: India³²⁰, *ncac, **parboiled rice

incidence: 71/186*, Ø conc.: 30.1 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *rice and rice products except boiled rice, **of pos sa?

incidence: 3/15*, Ø conc.: 0.6 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *boiled rice, **of pos sa?

incidence: 54/92*, conc. range: ≤6.06 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from high incidence area of liver cancer

incidence: 60/97*, conc. range: ≤5.07 µg/kg, sample year: unknown, country: China¹²³⁴, *sa from low incidence area of liver cancer

incidence: 1/60*, conc.: 1.2 µg/kg, sample year: unknown, country: Brazil¹⁶¹⁷, *included full, organic, parboiled, and polished rice

AFLATOXINS (B₁, B₂)

incidence: 1/4*, conc.: 30 µg/kg, sample year: 1976, country: Guatemala³⁴, *sa stored for 6 months during dry season

incidence: 4/242, conc. range: pr, sample year: 1990–1992, country: Egypt²⁸⁸

AFLATOXINS (B₁, B₂, G₁)

incidence: 9/18*, conc. range: 6–20 µg/kg (2 sa), 21–50 µg/kg (4 sa), ≤83 µg/kg (3 sa), sample year: 1975/1976–?, country: Guatemala³³, *rice with bran

incidence: 74/78*, conc. range: <0.025–8.7 µg/kg, Ø conc.: 1.5 µg/kg, sample year: 2002/2003, country: Japan¹³⁸⁶, sa from Philippines, Thailand and Vietnam, *brown and polished rice; for detailed information please see the article

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/6, conc. range: <5 µg/kg (1 sa), 8 µg/kg (1 sa), sample year: 1975/1976–?, country: Guatemala³³

incidence: 11/31, conc. range: 0.1–3.83 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

incidence: 7/364, conc. range: ≤98 µg/kg, Ø conc.: 20 µg/kg, sample year: 1967–1969, country: Thailand¹⁶³

incidence: 2/242, conc. range: pr, sample year: 1990–1992, country: Egypt²⁸⁸

incidence: ?/4*, conc. range: 0.1–2.4 µg/kg, sample year: unknown, country: UK⁷³², *basmati rice

incidence: 2/25*, conc. range: 0.2 to <0.5 µg/kg (2 sa, maximum: 0.3 µg/kg), sample year: unknown, country: UK⁸³⁵, *long grain rice

incidence: 2/23*, conc. range: 0.2 to <0.5 µg/kg (2 sa, maximum: 0.3 µg/kg), sample year: unknown, country: UK⁸³⁵, *easy cook rice

incidence: 9/18*, conc. range: 0.2 to <0.5 µg/kg (6 sa), 1 to <2 µg/kg (3 sa, maximum: 1.8 µg/kg), sample year: unknown, country: UK⁸³⁵, *basmati rice

incidence: 3/6*, conc. range: 0.2 to <0.5 µg/kg (2 sa), 1.8 µg/kg (1 sa), sample year: unknown, country: UK⁸³⁵, *brown rice

incidence: 1/3*, conc.: 0.2 µg/kg, sample year: unknown, country: UK⁸³⁵, *ground rice

incidence: 3/5*, conc. range: 0.14–0.24 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *basmati rice

incidence: 16/16*, Ø conc.: 3.87 µg/kg**, sample year: 2003, country: China⁹¹³, *whole grain rice, **of all sa?

incidence: 4/4* **, Ø conc.: 2.79 µg/kg, sample year: 2003, country: China⁹¹³, *whole grain rice, **stored for 1–2 years

incidence: 4/4* **, Ø conc.: 3.98 µg/kg, sample year: 2003, country: China⁹¹³, *whole grain rice, **stored for 5–6 years

incidence: 4/4* **, Ø conc.: 6.23 µg/kg, sample year: 2003, country: China⁹¹³, *whole grain rice, **stored for 7–8 years

incidence: 4/4* **, Ø conc.: 2.93 µg/kg, sample year: 2003, country: China⁹¹³, *whole grain rice, **stored for >10 years

incidence: 36/37*, Ø conc.: 0.88 µg/kg**, sample year: 2003, country: China⁹¹³, *brown rice (dehusked), **of all sa?

incidence: 20/21* **, Ø conc.: 0.89 µg/kg***, sample year: 2003, country: China⁹¹³, *brown rice, **stored for 1–2 years, ***of all sa?

incidence: 7/7* **, Ø conc.: 0.74 µg/kg, sample year: 2003, country: China⁹¹³, *brown rice, **stored for 5–6 years

incidence: 5/5* **, Ø conc.: 0.76 µg/kg, sample year: 2003, country: China⁹¹³, *brown rice, **stored for 7–8 years

incidence: 4/4* **, Ø conc.: 1.19 µg/kg, sample year: 2003, country: China⁹¹³, *brown rice, **stored for >10 years

incidence: 10/30, conc. range: 0.19–3.96 µg/kg, Ø conc.: 2.12 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

incidence: 75/166, conc. range: ≥0.11 to ≤10.00 µg/kg (56 sa), >10.00 to ≤20.00 µg/kg (10 sa), >20.00 to ≤30.00 µg/kg (4 sa), >30.00 µg/kg (5 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (4 sa co-contaminated with AFS and CTV, 40 sa co-contaminated with AFS and OTA, 28 sa co-contaminated with AFS and ZEA; no further information available)

incidence: 17/18*, conc. range: ≥ 0.11 to ≤ 10.00 $\mu\text{g}/\text{kg}$ (12 sa), > 10.00 to ≤ 20.00 $\mu\text{g}/\text{kg}$ (5 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰, *broken rice (7 sa co-contaminated with AFS and CTV, 8 sa co-contaminated with AFS and OTA, 8 sa co-contaminated with AFS and ZEA; no further information available)

incidence: 28/50, conc. range: 0.15–4.54 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

AFLATOXINS (TOTAL)

incidence: 9/99, conc. range: > 6.8 –10 $\mu\text{g}/\text{kg}$ (4 sa), -15 $\mu\text{g}/\text{kg}$ (3 sa), -35 $\mu\text{g}/\text{kg}$ (1 sa), -40 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1992–1994, country: Switzerland¹³¹, sa from Ecuador

incidence: 56/100*, conc. range: 0.05–4.0 $\mu\text{g}/\text{kg}$ (24 sa), > 4.0 $\mu\text{g}/\text{kg}$ (32 sa, maximum: 21.4 $\mu\text{g}/\text{kg}$), sample year: 2006, country: Turkey¹⁰³⁷, *rice from open packages

AFLATOXINS

incidence: 14/20, conc. range: 2–19 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7.9 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK/France/USA⁷², sa from Gambia

incidence: 13/30*, conc. range: 22–317 $\mu\text{g AFB}_1/\text{kg}$, 15–125 $\mu\text{g AFB}_2/\text{kg}$, 14–107 $\mu\text{g AFG}_1/\text{kg}$, 20–98 $\mu\text{g AFG}_2/\text{kg}$, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 10/100, conc. range: 20.2–28.6 $\mu\text{g}/\text{kg}$, sample year: 1995, country: USA⁸⁷⁵

STERIGMATOCYSTIN

incidence: 1/242, conc. range: pr, sample year: 1990–1992, country: Egypt²⁸⁸

incidence: 2/2*, conc. range: 50–450 $\mu\text{g}/\text{kg}$, \emptyset conc.: 250 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁷⁴⁷, *brown rice, damaged (2 sa co-contaminated with CIT, OTA, and STG)

incidence: 3/30*, conc. range: 108–157 $\mu\text{g}/\text{kg}$, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 12/37*, conc. range: $\leq 16,300$ $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁸⁵⁰, *ncac

Aspergillus and *Penicillium* Toxins

CITREOVIRIDIN

incidence: 5/420*, conc. range: 12–254 $\mu\text{g}/\text{kg}$, \emptyset conc.: 104.54 $\mu\text{g}/\text{kg}$, sample year: probably 2004–2007, country: Brazil/Argentina¹³⁷⁰, sa from Brazil, *rice and processed rice

incidence: 4/165, conc. range: ≥ 0.9 to ≤ 10.00 $\mu\text{g}/\text{kg}$ (3 sa), > 30.00 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (4 sa co-contaminated with AFS and CTV, 3 sa co-contaminated with CTV and OTA, 2 sa co-contaminated with CTV and ZEA; no further information available)

incidence: 7/17*, conc. range: ≥ 0.9 to ≤ 10.00 $\mu\text{g}/\text{kg}$ (6 sa), > 10.00 to ≤ 30.00 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰, *broken rice (7 sa co-contaminated with AFS and CTV, 4 sa co-contaminated with AFS and OTA, 4 sa co-contaminated with AFS and ZEA; no further information available)

CITRININ

incidence: 13/33, conc. range: 64.1–279 $\mu\text{g}/\text{kg}$, \emptyset conc.: 113.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁷²¹

incidence: 2/2*, conc. range: 700–1,130 $\mu\text{g}/\text{kg}$, \emptyset conc.: 915 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁷⁴⁷, *brown rice, damaged (2 sa co-contaminated with CIT, OTA, and STG)

incidence: 4/30*, conc. range: 49–92 $\mu\text{g}/\text{kg}$, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 6/18*, conc. range: 12–55 $\mu\text{g}/\text{kg}$, sample year: 1981, country: India⁷⁸⁹, *par-boiled rice

incidence: 9/50*, conc. range: ≤ 0.42 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.36 $\mu\text{g}/\text{kg}$ **, sample year: unknown, country: Vietnam/France¹²⁹⁶, sa from Vietnam, *rainy season, **average take into account only sa above LOQ

incidence: 1/30*, conc.: tr, sample year: unknown, country: Vietnam/France¹²⁹⁶, sa from Vietnam, *dry season

OCHRATOXIN A

incidence: 27/96, conc. range: 10–150 µg/kg, Ø conc.: 44 µg/kg, sample year: unknown, country: Tunisia¹⁰²

incidence: 6/31, conc. range: 0.05–5.32 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

incidence: 2/25*, conc. range: 21.3–26.2 µg/kg, Ø conc.: 23.75 µg/kg, sample year: 2000, country: Vietnam²⁵⁴, *for food and feed

incidence: 8/88*, conc. range: 2.1–6.0 µg/kg, Ø conc.: 3.9 µg/kg, sample year: 2002, country: Korea²⁶⁴, *polished rice

incidence: 10/10, conc. range: 0.16–0.92 µg/kg, Ø conc.: 0.51 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁵⁵⁷, sa from Côte d'Ivoire (10 sa co-contaminated with AFB₁, FB₁, OTA, and ZEA)

incidence: 5/60*, conc. range: 0.9–6 µg/kg, Ø conc.: 1 µg/kg, sample year: 2002/2003, country: Korea⁵⁹⁹, *polished rice

incidence: 10/10, conc. range: 9–92 µg/kg, Ø conc.: 44 µg/kg, sample year: 2002, country: France/Côte d'Ivoire⁶⁴², sa from Côte d'Ivoire

incidence: 6/42*, conc. range: 0.09–3.52 µg/kg, sample year: 2003, country: Portugal⁶⁵², *different kinds of rice

incidence: 4/22*, conc. range: ≤0.28 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *brown rice

incidence: 5/33, conc. range: 10.1–30.0 µg/kg, Ø conc.: 15.8 µg/kg, sample year: unknown, country: Egypt⁷²¹

incidence: 2/2*, conc. range: 230–430 µg/kg, Ø conc.: 330 µg/kg, sample year: unknown, country: Japan⁷⁴⁷, *brown rice, damaged (2 sa co-contaminated with CIT, OTA, and STG)

incidence: 2/30*, conc. range: pr, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 13/31, conc. range: ≤12.5 µg/kg, sample year: 2006, country: Chile⁷⁸⁶

incidence: 2/32*, conc. range: 8–25 µg/kg, Ø conc.: 16.5 µg/kg, sample year: 1981, country: India⁷⁸⁹, *broken rice

incidence: 18/20, conc. range: 0.02–32.4 µg/kg, Ø conc.: 4.15 µg/kg, sample year: 2005, country: Morocco⁸⁵⁹

incidence: 2/5*, conc. range: 1.65–1.95 µg/kg, Ø conc.: 1.8 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *basmati rice

incidence: 1/4, conc.: 1.23 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸

incidence: 43/100, Ø conc.: 0.11 µg/kg, sample year: 2007, country: Canada⁸⁹⁷, sa from USA and Asian countries

incidence: 1/99, conc.: 0.49 µg/kg*, sample year: 2008, country: Canada⁸⁹⁷, sa from USA and Asian countries, *black glutinous rice from Thailand

incidence: 1/23, conc.: 2.17 µg/kg, sample year: 2008/2009, country: Jordan⁹⁰⁸

incidence: 3/11, conc. range: 0.15–0.9 µg/kg, sample year: 2005/2006, country: Tunisia⁹³⁹

incidence: 1/100, conc.: 75.0 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 24/25*, conc. range: 0.01–2.18 µg/kg, Ø conc.: 0.358 µg/kg, sample year: 2003, country: Nigeria⁹⁸², *different kinds and sorts of rice

incidence: 7/10*, conc. range: 133.8–305.5 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 6/6*, conc. range: 207.7–341.3 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *stored sa

incidence: 1/5*, conc.: 188.2 µg/kg,
sample year: 2008, country:
Nigeria/South Africa⁹⁹⁹,
sa from Nigeria, *market sa

incidence: 72/100*, conc. range: 0.025–
3.0 µg/kg (42 sa), >3.0 µg/kg (30 sa,
maximum: 80.7 µg/kg), sample year: 2006,
country: Turkey¹⁰³⁷, *rice from open
packages

incidence: 1/2* **, conc.: 7.3 µg/kg,
sample year: unknown, country: Spain¹¹¹⁷,
*puffed rice, **conventional

incidence: 1/1* **, conc.: 2.8 µg/kg,
sample year: unknown, country:
Spain¹¹¹⁷, *puffed brown rice, **organic

incidence: 1/1*, conc.: 27.3 µg/kg, sample
year: unknown, country: Spain¹¹¹⁷,
*conventional

incidence: 0/0*, no sa investigated, sample
year: unknown, country: Spain¹¹¹⁷,
*organic

incidence: 1/31* **, conc.: 4.3 µg/kg,
sample year: unknown, country: Spain¹¹¹⁷,
*white rice, **conventional

incidence: 0/1* **, conc. range: no
contamination, country: Spain¹¹¹⁷, *white
rice, **organic

incidence: 1/1* **, conc.:
21.0 µg/kg, sample year: unknown,
country: Spain¹¹¹⁷, *wild rice,
**conventional

incidence: 0/0* **, no sa investigated,
sample year: unknown, country: Spain¹¹¹⁷,
*wild rice, **organic

incidence: 1/1* **, conc.: 7.3 µg/kg,
sample year: unknown, country: Spain¹¹¹⁷,
*wild rice product (wild rice + white
rice + vegetables), **conventional

incidence: 0/0* **, no sa investigated,
sample year: unknown, country: Spain¹¹¹⁷,
*wild rice product (wild rice + white
rice + vegetables), **organic

incidence: 0/6* **, conc. range: no
contamination, country: Spain¹¹¹⁷, *brown
rice, **conventional

incidence: 1/6* **, conc.: 1.0 µg/kg,
sample year: unknown, country: Spain¹¹¹⁷,
*brown rice, **organic

incidence: 2/9, conc. range: 5.90–7.52 µg/kg, Ø
conc.: 6.71 µg/kg, sample year: 2005, country:
Portugal/Spain¹¹⁸¹, sa from Spain

incidence: 2/12, conc. range: 2.10–7.60 µg/
kg, Ø conc.: 4.85 µg/kg, sample year:
2005, country: Portugal/Spain¹¹⁸¹, sa from
Portugal

incidence: 26/100, conc. range: 0.08–47 µg/
kg, sample year: 2006, country: Spain/
Morocco¹¹⁸³, sa from Morocco

incidence: 1/12*, conc.: 4.17 µg/kg, sample
year: unknown, country: Spain¹¹⁹⁰, *sa
from rice packers and supermarkets

incidence: 8/50*, conc. range: ≤0.35 µg/kg,
Ø conc.: 0.32 µg/kg**, sample year:
unknown, country: Vietnam/France¹²⁹⁶,
sa from Vietnam, *rainy season, **average
take into account only sa above LOQ

incidence: 25/50*, conc. range: ≤2.78 µg/
kg, Ø conc.: 0.79 µg/kg**, sample year:
unknown, country: Vietnam/France¹²⁹⁶,
sa from Vietnam, *dry season, **average
take into account only sa above LOQ

incidence: 3/30, conc. range: 0.49–5.96 µg/
kg, Ø conc.: 2.82 µg/kg, sample year: 2009,
country: Malaysia¹⁴²³

incidence: 47/165, conc. range: ≥0.20 to
≤10.00 µg/kg (45 sa), >10.00 µg/kg (2 sa),
sample year: 2007–2009, country: Brazil¹⁴⁶⁰
(40 sa co-contaminated with AFS and OTA,
3 sa co-contaminated with CTV and OTA;
no further information available)

incidence: 8/10*, conc. range: ≥0.20 to
≤10.00 µg/kg (8 sa), sample year: 2007–
2009, country: Brazil¹⁴⁶⁰, *broken rice (8 sa
co-contamination with AFS and OTA,
4 sa co-contaminated with CTV and OTA;
no further information available)

incidence: 7/7*, conc. range: 8.0–41.0 µg/kg,
Ø conc.: 24.5 µg/kg, sample year: unknown,
country: Taiwan/Russia¹⁵⁰², sa from Taiwan,
*included black, red, white, yellow rice, and
rice in husk

incidence: 21/50, conc. range: 0.2–4.34 µg/kg,
sample year: 2010, country: Malaysia¹⁶⁴⁸

Fusarium Toxins

BEAUVERICIN

incidence: 3/100, conc. range: 5.3–57.4 µg/
kg, sample year: 2010, country: Spain⁹⁷⁴, sa
from Mediterranean area

incidence: 1/1, conc.: 11,780 µg/kg, sample
year: unknown, country: Spain/
Morocco¹²⁶², sa from Spain

incidence: 53/70, conc. range: ≤26,300 µg/
kg, Ø conc.: 12,700 µg/kg, sample year:
unknown, country: Morocco/Spain¹⁴⁸⁷,
sa from Morocco

DEOXYNIVALENOL

incidence: 3/88*, conc. range: 105–159 µg/
kg, Ø conc.: 139 µg/kg, sample year: 2002,
country: Korea²⁶⁴, *polished rice

incidence: 3/4, conc. range: 3,900–
9,500 µg/kg, Ø conc.: 6,800 µg/kg, sample
year: 1989, country: USA⁴²⁴

incidence: 14/26, conc. range: 15–305 µg/
kg, Ø conc.: 107 µg/kg, sample year: 1998,
country: Germany⁵¹⁷

incidence: 1/1* **, conc.: 90 µg/kg, sample
year: 1991, country: Papua, New Guinea/
Japan⁵⁷⁴, sa from Australia, *ncac,
**brown trukai rice

incidence: ?/4*, conc. range: 4–6 µg/kg,
sample year: unknown, country: UK⁷³²,
*basmati rice

incidence: ?/4*, conc. range: 4–7 µg/kg,
sample year: unknown, country: UK⁷³²,
*Chinese rice

incidence: 1/23*, conc.: 12 µg/kg, sample
year: unknown, country: UK⁸³⁵, *easy
cook rice

incidence: 38/100, conc. range: 100–
400 µg/kg, sample year: 1995, country:
USA⁸⁷⁵

incidence: 1/5*, conc.: 142.31 µg/kg,
sample year: 2002, country: Qatar⁸⁷⁸,
*basmati rice

incidence: 2/43*, conc. range: 24.2–
37.4 µg/kg, Ø conc.: 30.8 µg/kg, sample
year: 2007/2008, country: Korea⁹³⁸,
*glutinous rice

incidence: 5/62, conc. range: 4.3–16.0 µg/
kg, Ø conc.: 9.7 µg/kg, sample year:
2007/2008, country: Korea⁹³⁸, *polished
rice

incidence: 6/44, conc. range: 4.1–127.9 µg/
kg, Ø conc.: 43.8 µg/kg, sample year:
2007/2008, country: Korea⁹³⁸, *unpolished
rice

incidence: ?/10, conc. range: ≤150 µg/kg, Ø
conc.: 17 µg/kg*, sample year: unknown,
country: Germany⁹⁴⁵, *of pos sa?

incidence: 3/100, conc. range: 71.2–176 µg/
kg, sample year: 2010, country: Spain⁹⁷⁴, sa
from Mediterranean area

incidence: 1/10*, conc.: 107.9 µg/kg,
sample year: 2008, country: Nigeria/South
Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 4/6*, conc. range: 11.2–
112.2 µg/kg, sample year: 2008, country:
Nigeria/South Africa⁹⁹⁹, sa from Nigeria,
*stored sa

incidence: 2/51*, conc. range: 54–161 µg/kg,
Ø conc.: 108 µg/kg, sample year: 2007/2008,
country: Korea¹²²², *brown rice

incidence: 2/49*, conc. range: 86–630 µg/kg,
Ø conc.: 358 µg/kg, sample year: 2007/2008,
country: Korea¹²²², *blue-tinged rice

incidence: 34/50*, conc. range:
59–1,355 µg/kg, Ø conc.: 263 µg/kg,
sample year: 2007/2008, country:
Korea¹²²², *discolored rice

incidence: 2/43*, Ø conc.: 31 µg/kg,
sample year 2005–2008, country: Korea¹³⁰³,
*glutinous rice

incidence: 11/25*, Ø conc.: 17 µg/kg,
sample year 2005–2008, country: Korea¹³⁰³,
*unpolished, glutinous rice

incidence: 11/76*, Ø conc.: 20 µg/kg,
sample year 2005–2008, country: Korea¹³⁰³,
*polished rice

incidence: 8/51*, Ø conc.: 35 µg/kg,
sample year 2005–2008, country: Korea¹³⁰³,
*unpolished rice

incidence: 3/30, conc. range: 43.16–
68.97 µg/kg, Ø conc.: 55.97 µg/kg, sample
year: 2009, country: Malaysia¹⁴²³

incidence: 2/2* **, conc. range: 120–
2,900 µg/kg, Ø conc.: 1,510 µg/kg, sample
year: 1998, country: Japan¹⁴⁴⁴, *ncac,
**lodged, water-damaged, brown-colored,
unpolished, domestic rice harvested after
a typhoon

incidence: 15/165, conc. range: ≥30.00 µg/
kg (2 sa), sample year: 2007–2009,
country: Brazil¹⁴⁶⁰

incidence: 5/14*, conc. range: 7–96 µg/kg, Ø
conc.: 32.8 µg/kg, sample year: unknown,
country: China/Belgium¹⁵⁴⁴, *ncac

incidence: 13/50, conc. range: 12.5–
81.2 µg/kg, sample year: 2010, country:
Malaysia¹⁶⁴⁸

3-ACETYLDEOXYNIVALENOL

incidence: 2/26, conc. range: 11–20 µg/
kg, Ø conc.: 15 µg/kg, sample year: 1998,
country: Germany⁵¹⁷

ENNIATIN A

incidence: 16/70, conc. range: ≤119,500 µg/
kg, sample year: unknown, country:
Morocco/Spain¹⁴⁸⁷, sa from Morocco

ENNIATIN A₁

incidence: 1/1, conc.: 814,420 µg/kg,
sample year: unknown, country: Spain/
Morocco¹²⁶², sa from Spain

incidence: 4/70, conc. range: ≤448,700 µg/
kg, sample year: unknown, country:
Morocco/Spain¹⁴⁸⁷, sa from Morocco

ENNIATIN B

incidence: 1/1, conc.: 7,950 µg/kg,
sample year: unknown, country: Spain/
Morocco¹²⁶², sa from Spain

incidence: 21/70, conc. range: ≤26,200 µg/
kg, sample year: unknown, country:
Morocco/Spain¹⁴⁸⁷, sa from Morocco

ENNIATIN B₁

incidence: 17/70, conc. range: ≤23,700 µg/
kg, sample year: unknown, country:
Morocco/Spain¹⁴⁸⁷, sa from Morocco

FUMONISIN B₁

incidence: 2/88*, conc. range: 48.2–
60.6 µg/kg, Ø conc.: 54.4 µg/kg, sample
year: 2002, country: Korea²⁶⁴, *polished
rice

incidence: 8/20*, conc. range: tr–4,100 µg/
kg, Ø conc.: 2,637 µg/kg, sample year:
1995, country: USA³⁴⁸, *combine-
harvested, rough, unpolished rice

incidence: 14/30*, conc. range: 7–144 µg/
kg, sample year: 1996, country: Korea³⁷⁴,
*polished rice collected in warm and
humid summer

incidence: 10/30*, conc. range: 4–61 µg/kg,
sample year: 1996, country: Korea³⁷⁴,
*polished rice collected in cool and dry
fall

incidence: 15/99, conc. range: 1–11* µg/kg,
Ø conc.: 4.5 µg/kg, sample year: 2008,
country: Canada⁸⁹⁷, sa from
USA and Asian countries, *long grain
brown rice

incidence: 1/100, conc.: 14* µg/kg, sample
year: 2009, country: Canada⁸⁹⁷, sa from
USA and Asian countries, *black sweet
rice from Thailand

incidence: 4/5, conc. range: 1,140–
14,210 µg/kg, Ø conc.: 4,950 µg/kg,
sample year: 1996/1998, country:
Brazil⁹⁷⁰

incidence: 1/10*, conc.: 1.0 µg/kg, sample
year: 2008, country: Nigeria/South
Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 2/6*, conc. range: 0.4–4.4 µg/
kg, sample year: 2008, country: Nigeria/
South Africa⁹⁹⁹, sa from Nigeria, *stored
sa

incidence: 3/29, conc. range: 800–900 µg/
kg, Ø conc.: 866.7 µg/kg, sample year:
unknown, country: Argentina¹²²⁴

incidence: 26/29, conc. range: ≤ 500 $\mu\text{g}/\text{kg}$, sample year: unknown, country: China¹⁴³⁷ (26 sa co-contaminated with AFB₁ and FB₁)

incidence: 7/50, conc. range: 41.3–53.2 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₂

incidence: 5–6/20*, conc. range: 750–1,200 $\mu\text{g}/\text{kg}$, sample year: 1995, country: USA³⁴⁸, *combine-harvested, rough, unpolished rice

incidence: 4/99, conc. range: 1–2* $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.5 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Canada⁸⁹⁷, sa from USA and Asian countries, *long grain brown and black glutinous rice

incidence: 2/100, conc. range: >LOQ–176.0 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 1/10*, conc.: 132.5 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 3/50, conc. range: 40.1–61.5 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₃

incidence: 3–5/20*, conc. range: 500–550 $\mu\text{g}/\text{kg}$, sample year: 1995, country: USA³⁴⁸, *combine-harvested, rough, unpolished rice

incidence: 4/99, conc. range: 1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1 $\mu\text{g}/\text{kg}$, sample year: 2008, country: Canada⁸⁹⁷, sa from USA and Asian countries

FUMONISINS (B₁, B₂)

incidence: 1/4*, conc.: 28 $\mu\text{g}/\text{kg}$, sample year: unknown, country: UK⁷³², *basmati rice

FUMONISINS (B₁, B₂, B₃)

incidence: 4/5*, conc. range: $\leq 2,500$ $\mu\text{g}/\text{kg}$, sample year: 1999, country: USA⁸⁷⁵, *rough rice

incidence: 5/30, conc. range: 27.85–74.67 $\mu\text{g}/\text{kg}$, \emptyset conc.: 46.73 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

FUMONISINS

incidence: 5/80, conc. range: 100–500 $\mu\text{g}/\text{kg}$, sample year: 1995, country: USA⁸⁷⁵

FUSAPROLIFERIN

incidence: 1/1, conc.: 3,170 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 3/70, conc. range: $\leq 19,600$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 6,700 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Morocco/Spain¹⁴⁸⁷, sa from Morocco

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/2* **, conc.: 1,900 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Japan¹⁴⁴⁴, *ncac, **lodged, water-damaged, brown-colored, unpolished, domestic rice harvested after a typhoon

HT-2 TOXIN

incidence: 4/100, conc. range: 43.0–87.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 65 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 7/50, conc. range: 8.1–26.1 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Malaysia¹⁶⁴⁸

MONILIFORMIN

incidence: 8/123, conc. range: 73.6–265.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 159.2 $\mu\text{g}/\text{kg}$, sample year: 1992/1993, country: China¹⁰³⁵

NIVALENOL

incidence: 5/88*, conc. range: 182–462 $\mu\text{g}/\text{kg}$, \emptyset conc.: 352 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Korea²⁶⁴, *polished rice

incidence: 2/9*, \emptyset conc.: 22 $\mu\text{g}/\text{kg}$, year: unknown, country: Japan⁵³⁰, *ncac

incidence: 2/9*, \emptyset conc.: 22 $\mu\text{g}/\text{kg}$, year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 1/1* **, conc.: 63 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Papua, New Guinea/

Japan⁵⁷⁴, sa from Australia, *ncac,
**brown trukai rice

incidence: ?/4*, conc. range: 4–11 µg/kg,
sample year: unknown, country: UK⁷³²,
*basmati rice

incidence: 52/100, conc. range: 114–
632 µg/kg, sample year: 2010, country:
Spain⁹⁷⁴, sa from Mediterranean area

incidence: 10/51*, conc. range:
52–569 µg/kg, Ø conc.: 164 µg/kg, sample
year: 2007/2008, country: Korea¹²²²,
*brown rice

incidence: 49/49*, conc. range:
50–3,607 µg/kg, Ø conc.: 324 µg/kg,
sample year: 2007/2008, country:
Korea¹²²², *blue-tinged rice

incidence: 47/50*, conc. range:
66–4,180 µg/kg, Ø conc.: 872 µg/kg,
sample year: 2007/2008, country:
Korea¹²²², *discolored rice

incidence: 1/51*, conc.: 77 µg/kg, sample
year: 2007/2008, country: Korea¹²²²,
*polished rice

incidence: 2/2* **, conc. range: 200–
2,200 µg/kg, Ø conc.: 1,200 µg/kg, sample
year: 1998, country: Japan¹⁴⁴⁴, *ncac,
**lodged, water-damaged, brown-colored,
unpolished, domestic rice harvested after
a typhoon

DIACETOXYSCIRPENOL

incidence: 5/242, conc. range: 108–640 µg/
kg, Ø conc.: 328 µg/kg, sample year:
1990–1992, country: Egypt²⁸⁸

incidence: 2/100, conc. range: 83.0–
97.0 µg/kg, Ø conc.: 90.0 µg/kg, sample
year: 2010, country: Spain⁹⁷⁴

T-2 TOXIN

incidence: 3/242, conc. range: 96–310 µg/
kg, Ø conc.: 206.7 µg/kg, sample
year: 1990–1992, country: Egypt²⁸⁸

incidence: 1/26, conc. range: 19 µg/kg,
sample year: 1998, country: Germany⁵¹⁷

incidence: ?/4*, conc. range: ≤49 µg/kg,
sample year: unknown, country: UK⁷³²,
*Chinese rice

incidence: 1/32*, conc.: 25 µg/kg, sample
year: 1981, country: India⁷⁸⁹, *broken rice

incidence: 3/3*, conc. range:
180–420 µg/kg, Ø conc.: 306.7 µg/kg,
sample year: unknown, country: China⁷⁹⁵,
*included polished rice and rice kernel,
all sa moldy

incidence: ?/10, conc. range: ≤5.5 µg/kg, Ø
conc.: 0.7 µg/kg*, sample year: unknown,
country: Germany⁹⁴⁵, *of pos sa?

incidence: 7/100, conc. range: 12.9–78.4 µg/
kg, sample year: 2010, country: Spain⁹⁷⁴,
sa from Mediterranean area

incidence: 1/30, conc.: 65.63 µg/kg, sample
year: 2009, country: Malaysia¹⁴²³

incidence: 7/50, conc. range: 10.5–95.2 µg/
kg, sample year: 2010, country:
Malaysia¹⁶⁴⁸

ZEARALENONE

incidence: 4/31, conc. range: 2.8–73.11 µg/
kg, year: 2009, country: Malaysia¹¹⁵

incidence: 3/88*, conc. range: 21.7–47.0 µg/
kg, Ø conc.: 38.5 µg/kg, sample year: 2002,
country: Korea²⁶⁴, *polished rice

incidence: 5/242, conc. range: pr, sample
year: 1990–1992, country: Egypt²⁸⁸

incidence: 1/4, conc.: 12 µg/kg, sample
year: 1989, country: USA⁴²⁴

incidence: 1/9*, conc.: 8 µg/kg, sample year:
unknown, country: Japan⁵³⁰, *ncac

incidence: 1/9*, conc.: 8 µg/kg, sample
year: 1984, country: Japan⁵³⁸, sa from
Nepal, *ncac

incidence: 10/10, conc. range: 50–200 µg/
kg, Ø conc.: 80 µg/kg, sample year: 2002,
country: France/Côte d'Ivoire⁵⁵⁷, sa from
Côte d'Ivoire (10 sa co-contaminated with
AFB₁, FB₁, OTA, and ZEA)

incidence: 1/1* **, conc.: 3,060 µg/kg,
sample year: 1991, country: Papua, New
Guinea/Japan⁵⁷⁴, sa from Australia, *ncac,
**brown trukai rice

incidence: ?/4*, conc. range: 5.2–16.2 µg/
kg, sample year: unknown, country: UK⁷³²,
*basmati rice

incidence: 3/42* **, conc. range: >200 µg/kg, sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac, **rice and by-products

incidence: 65/100, conc. range: 300–2,200 µg/kg, sample year: 1995, country: USA⁸⁷⁵

incidence: 4/45, conc. range: 5.1–21.9 µg/kg, Ø conc.: 15.5 µg/kg, sample year: unknown, country: Egypt⁸⁷⁷

incidence: 2/5*, conc. range: 0.18–1.41 µg/kg, Ø conc.: 0.795 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *basmati rice

incidence: 3/4, conc. range: 0.77–1.11 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸

incidence: 6/10*, conc. range: 11.5–41.9 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *field sa

incidence: 4/6*, conc. range: 11.8–24 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *stored sa

incidence: 1/5*, conc.: 8.8 µg/kg, sample year: 2008, country: Nigeria/South Africa⁹⁹⁹, sa from Nigeria, *market sa

incidence: 14/51*, conc. range: 47–235 µg/kg, Ø conc.: 96 µg/kg, sample year: 2007/2008, country: Korea¹²²², *brown rice

incidence: 48/49*, conc. range: 26–3,156 µg/kg, Ø conc.: 765 µg/kg, sample year: 2007/2008, country: Korea¹²²², *blue-tinged rice

incidence: 40/50*, conc. range: 25–3,305 µg/kg, Ø conc.: 327 µg/kg, sample year: 2007/2008, country: Korea¹²²², *discolored rice

incidence: 9/88, conc. range: 3.33–54.12 µg/kg, Ø conc.: 11.78 µg/kg, sample year: 1988, country: Korea/USA¹²²³, sa from Korea

incidence: 3/30, conc. range: 2.4–6.11 µg/kg, Ø conc.: 3.98 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

incidence: 49/165, conc. range: ≥3.6 to ≤200.0 µg/kg (46 sa), >200.0 to ≤400.0 µg/kg (2 sa), >400.0 µg/kg

(1 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (28 sa co-contaminated with AFS and ZEA, 2 sa co-contaminated with CTV and ZEA; no further information available)

incidence: 8/10*, conc. range: ≥3.6 to ≤200.0 µg/kg (8 sa), sample year: 2007–2009, country: Brazil¹⁴⁶⁰ (8 sa co-contaminated with AFS and ZEA, 4 sa co-contaminated with CTV and ZEA; no further information available)

incidence: 12/50, conc. range: 1.5–51.1 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

Rice bran see Bran (rice bran)

Rice cake see Cake (rice cake)

Rice flour see Flour (rice flour)

Rice products see Product (rice products)

Rice snack see Snack

Rice starch see Starch (rice starch)

Roe deer kidney see Kidney (roe deer kidney)

Roe deer liver see Liver (roe deer liver)

Rolls may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 79/89*, conc. range: ≤0.524 µg/kg, year: 1996–1998, country: Germany⁶⁹⁰, *milk & water rolls

incidence: 31/31*, conc. range: ≤0.773 µg/kg, year: 1996–1998, country: Germany⁶⁹⁰, *wholemeal rolls

incidence: 48/49*, conc. range: ≤5.542 µg/kg, year: 1996–1998, country: Germany⁶⁹⁰, *multigrain rolls

incidence: 37/38*, conc. range: $\leq 0.441 \mu\text{g}/\text{kg}$, year: 1996–1998, country: Germany⁶⁹⁰, *rye rolls

incidence: 1/21*, conc.: $3 \mu\text{g}/\text{kg}$, sample year: 1990–1992, country: Poland¹¹⁵⁶, *wheat rolls

Rolled porridge oats see Porridge

Romadur cheese see Cheese (Romadur cheese)

Roquefort cheese see Cheese (Blue cheese)

Roseship juice see Juice (Roseship juice)

Rosé wine see Wine, rosé

Rootcrops may contained the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 43/129*, \emptyset conc.: $3.8 \mu\text{g}/\text{kg}$ **, sample year: unknown, country: Philippines⁹⁵⁶, *rootcrops and products, **of pos sa?

Rusk may contained the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 32/37*, conc. range: $\leq 2.260 \mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹²

Rye may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1*/2, conc.: $15 \mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 1/2*, conc.: $4.65 \mu\text{g}/\text{kg}$, sample year: 2005, country: Romania¹³⁷⁶, *for food

and feed (1 sa co-contaminated with AFB₁, AFB₂, and OTA)

incidence: 4/20*, conc. range: <LOQ, sample year: unknown, country: Belgium/Russia/Korea¹⁵¹¹, *ncac

AFLATOXIN B₂

incidence: 2/2*, conc. range: 2.76–3.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.93 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₂ and OTA)

STERIGMATOCYSTIN

incidence: 8/25, conc. range: 0.5–25 $\mu\text{g}/\text{kg}$, sample year: 2007, country: Latvia⁸¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/10, conc. range: $\leq 1.7 \mu\text{g}/\text{kg}$, sample year: 2004, country: Germany²⁴⁴

incidence: 30/64* **, conc. range: LOD–4.9 $\mu\text{g}/\text{kg}$ (27 sa), 5.0–25 $\mu\text{g}/\text{kg}$ (2 sa), 26 $\mu\text{g}/\text{kg}$ (1 sa), sample year: 1992, country: Denmark²⁶⁵, *conventional, **very dry harvest conditions

incidence: 1/1* **, conc.: 4.8 $\mu\text{g}/\text{kg}$, sample year: 1992, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 47/60* **, conc. range: LOD–4.9 $\mu\text{g}/\text{kg}$ (40 sa), 5.0–25 $\mu\text{g}/\text{kg}$ (5 sa), >25 $\mu\text{g}/\text{kg}$ (2 sa, maximum: 33 $\mu\text{g}/\text{kg}$), sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 2/2* **, conc. range: LOD–4.9 $\mu\text{g}/\text{kg}$ (maximum: 0.5 $\mu\text{g}/\text{kg}$), sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 48/60* **, conc. range: LOD–4.9 $\mu\text{g}/\text{kg}$ (maximum: 4.2 $\mu\text{g}/\text{kg}$), sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **conventional

incidence: 1/1* **, conc.: 1.3 $\mu\text{g}/\text{kg}$, sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **organic

incidence: 42/53* **, conc. range: LOD–4.9 µg/kg (maximum: 3.1 µg/kg), sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 1/1* **, conc.: 1.3 µg/kg, sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 28/45* **, conc. range: LOD–4.9 µg/kg (maximum: 2.6 µg/kg), sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 0/0* **, no sa investigated, sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 27/50* **, conc. range: LOD–4.9 µg/kg (maximum: 2.6 µg/kg), sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 6/7* **, conc. range: LOD–4.9 µg/kg (4 sa), 5.0–25 µg/kg (1 sa), 45 µg/kg (1 sa), sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 23/46* **, conc. range: LOD–4.9 µg/kg (22 sa), 12 µg/kg (1 sa), sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **conventional

incidence: 1/2* **, conc.: 0.2 µg/kg, sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **organic

incidence: 12/27* **, conc. range: LOD–4.9 µg/kg (10 sa), >25 µg/kg (2 sa, maximum: 63 µg/kg), sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 2/3* **, conc. range: LOD–4.9 µg/kg (2 sa, maximum: 2.0 µg/kg), sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 3/52* **, conc. range: 0.82–2.5 µg/kg, Ø conc.: 1.38 µg/kg**, sample year: 1997, country: Poland⁵⁸⁷, *ncac, **conventional

incidence: 18/48* **, conc. range: 0.21–10.0 µg/kg, Ø conc.: 3.17 µg/kg**, sample year: 1997, country: Poland⁵⁸⁷, *ncac, **organic

incidence: 4/37* **, conc. range: 4.73–8.80 µg/kg, Ø conc.: 6.75 µg/kg**, sample year: 1998, country: Poland⁵⁸⁸, *ncac, **conventional

incidence: 5/46* **, conc. range: 2.0–35.3 µg/kg, Ø conc.: 14.5 µg/kg**, sample year: 1998, country: Poland⁵⁸⁸, *ncac, **organic

incidence: 42/102* **, conc. range: 0.05–4.9 µg/kg (35 sa), 5–25 µg/kg (4 sa), >25 µg/kg (3 sa, maximum: 77 µg/kg), sample year: 1986, country: Denmark⁶²⁵, *average harvest climate, **conventional

incidence: 9/12* **, conc. range: 0.05–4.9 µg/kg (8 sa), 100 µg/kg (1 sa), sample year: 1986, country: Denmark⁶²⁵, *average harvest climate, ** organic

incidence: 24/40* **, conc. range: 0.05–4.9 µg/kg (17 sa), 5–25 µg/kg (6 sa), 121 µg/kg (1 sa), sample year: 1987, country: Denmark⁶²⁵, *very wet harvest climate, **conventional

incidence: 20/22* **, conc. range: 0.05–4.9 µg/kg (11 sa), 5.0–25 µg/kg (7 sa), >25 µg/kg (2 sa maximum: ? µg/kg), sample year: 1987, country: Denmark⁶²⁵, *very wet harvest climate, ** organic

incidence: 22/89* **, conc. range: 0.05–4.9 µg/kg (19 sa), 5–25 µg/kg (3 sa, maximum: 12 µg/kg), sample year: 1988, country: Denmark⁶²⁵, *dry harvest climate, **conventional

incidence: 8/11* **, conc. range: 0.05–4.9 µg/kg (7 sa), 20 µg/kg (1 sa), sample year: 1988, country: Denmark⁶²⁵, *dry harvest climate, ** organic

incidence: 30/97* **, conc. range: 0.05–4.9 µg/kg (29 sa), 9.2 µg/kg (1 sa), sample year: 1989, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 7/14* **, conc. range: 0.05–4.9 µg/kg (5 sa), 5.0–25 µg/kg (2 sa maximum: 6.4 µg/kg), sample year: 1989, country: Denmark⁶²⁵, *very dry harvest climate, ** organic

incidence: 13/64* **, conc. range: 0.05–4.9 µg/kg (11 sa), 8.4 µg/kg (1 sa), sample year: 1990, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 13/16* **, conc. range: 0.05–4.9 µg/kg (10 sa), 5.0–25 µg/kg (2 sa), 37 µg/kg (1 sa), sample year: 1990, country: Denmark⁶²⁵, *very dry harvest climate, ** organic

incidence: 39/69* **, conc. range: 0.05–4.9 µg/kg (38 sa), 7.2 µg/kg (1 sa), sample year: 1991, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 14/16* **, conc. range: 0.05–4.9 µg/kg (maximum: 1.4 µg/kg), sample year: 1991, country: Denmark⁶²⁵, *very dry harvest climate, ** organic

incidence: 8/42* **, conc. range: 0.05–4.9 µg/kg (maximum: 1.0 µg/kg), sample year: 1992, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 0/0* **, no sa investigated, sample year: 1992, country: Denmark⁶²⁵, *very dry harvest climate, **organic

incidence: 8/22* **, conc. range: 0.05–4.9 µg/kg (maximum: 0.7 µg/kg), sample year: 1986–1992, country: Denmark⁶²⁵, sa imported, *conventional

incidence: 0/0*, no sa investigated, sample year: 1986–1992, country: Denmark⁶²⁵, *organic

incidence: 14/37, conc. range: ≤0.800 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰

incidence: 18/40, conc. range: ≤2.59 µg/kg, Ø conc.: 0.64 µg/kg, sample year: 2004–2007, country: Japan⁹⁰⁰

incidence: 1/17, conc.: 2.0 µg/kg, sample year: 1992–1994, country: EU¹⁰³⁴, sa from Austria

incidence: 4/9, conc. range: LOD/LOQ–4.9 µg/kg (4 sa, maximum: 0.8 µg/kg), sample year: 1990, country: EU¹⁰³⁴, sa imported to Norway

incidence: 7/9, conc. range: LOD/LOQ–4.9 µg/kg (7 sa, maximum: 1.0 µg/kg), sample year: 1993, country: EU¹⁰³⁴, sa imported to Norway

incidence: 3/6, conc. range: LOD/LOQ–4.9 µg/kg (3 sa, maximum: 1.0 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa imported to Norway

incidence: 4/23*, conc. range: ≤0.038 µg/kg, sample year: 2001, country: Slovakia/Poland¹⁰⁴⁷, sa from Poland, *ncac

incidence: 89/196, conc. range: 0.1–775 µg/kg, sample year: 1996, country: Poland¹¹⁵⁶

incidence: 136/282, conc. range: 0.25–6,321 µg/kg, sample year: 1997, country: Poland¹¹⁵⁶

incidence: 184/318, conc. range: 0.2–1,950 µg/kg, sample year: 1998, country: Poland¹¹⁵⁶

incidence: 176/366, conc. range: 0.5–925 µg/kg, sample year: 1999, country: Poland¹¹⁵⁶

incidence: 42/120, conc. range: 0.2–667 µg/kg, sample year: 2000, country: Poland¹¹⁵⁶

incidence: 1/4, conc.: 27.10 µg/kg, sample year: 2005, country: Portugal/Spain¹¹⁸¹, sa from Spain

incidence: 2/5*, conc. range: 0.39–0.55 µg/kg, Ø conc.: 0.47 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (2 sa co-contaminated with DON and OTA)

incidence: 9/10, conc. range: 0.28–1.59 µg/kg, Ø conc.: 1.05 µg/kg, sample year: 2004/2005, country: Japan¹²¹⁵

incidence: 2/2*, conc. range: 24.1–25.6 µg/kg, Ø conc.: 24.85 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₂ and OTA)

incidence: 20/28, conc. range: 0.1–5 µg/kg, sample year: 1996–1998, country: Sweden¹⁵⁶⁵

Claviceps Toxins

ERGOT ALKALOIDS (TOTAL)

incidence: 18/18* **, conc. range:
 ≤3,280 µg/kg, Ø conc.: 1,147 µg/kg,
 sample year: 2003, country: Germany⁸⁵⁵,
 *rye grains and meals, **conventional

incidence: 12/12* **, conc. range:
 ≤1,490 µg/kg, Ø conc.: 324 µg/kg, sample
 year: 2003, country: Germany⁸⁵⁵, *rye
 grains and meals, **organic

incidence: 15/15* **, conc. range:
 ≤974 µg/kg, Ø conc.: 281 µg/kg, sample
 year: 2004, country: Germany⁸⁵⁵, *rye
 grains and meals, **conventional

incidence: 6/6* **, conc. range: ≤363 µg/
 kg, Ø conc.: 208 µg/kg, sample year: 2004,
 country: Germany⁸⁵⁵, *rye grains and
 meals, **organic

Fusarium Toxins

DEOXYNIVALENOL

incidence: 14/46*, conc. range: ≤102 µg/kg, Ø
 conc.: 54 µg/kg, sample year: 1998, country:
 Lithuania²⁰³, *for food and feed

incidence: 3/6, conc. range: 5–100 µg/kg,
 sample year: 1998, country: Finland²¹⁹

incidence: 3/11, conc. range: 110–440 µg/kg,
 sample year: 1989, country: Russia³¹²

incidence: 2/47, conc. range: 90–290 µg/
 kg, Ø conc.: 190 µg/kg, sample year: 1992,
 country: Russia³¹²

incidence: 2/62, conc. range: 950–1,110 µg/
 kg, Ø conc.: 1,025 µg/kg, sample year:
 1993, country: Russia³¹²

incidence: 1/46, conc.: 220 µg/kg, Ø conc.:
 190 µg/kg, sample year: 1996, country:
 Russia³¹²

incidence: 17/135* **, conc. range:
 ≤3,090 µg/kg, Ø conc.: 490 µg/kg, sample
 year: 1998, country: Germany⁴⁴¹, *ncac,
 **conventional

incidence: 2/19* **, conc. range: 130 µg/
 kg, Ø conc.: 130 µg/kg, sample year: 1998,
 country: Germany⁴⁴¹, *ncac, **organic

incidence: 24/31, conc. range: 9–93 µg/kg,
 Ø conc.: 52 µg/kg, sample year: 1987/1988,
 country: Finland⁴⁵⁵

incidence: 9/10*, conc. range: 10–47 µg/
 kg, Ø conc.: 31 µg/kg, sample year:
 1987/1988, country: Finland⁴⁵⁵, *sa from
 Germany, Hungary, Soviet Union, Sweden,
 and USA

incidence: 1/5* **, conc.: 3 µg/kg, sample
 year: 1983, country: Japan/Korea⁴⁶⁹, sa
 from Korea, *for food and feed,
 **polished rye (1 sa co-contaminated
 with DON and NIV)

incidence: 10/30*, Ø conc.: 183 µg/kg,
 sample year: unknown, country: Japan⁵³⁰,
 *ncac

incidence: 4/4*, conc. range: 8–384 µg/kg,
 Ø conc.: 106 µg/kg, sample year:
 1984/1985, country: Japan/Netherlands⁵³⁶,
 sa from Netherlands, *ncac (1 sa
 co-contaminated with DON, NIV,
 and ZEA, 2 sa co-contaminated with
 DON and NIV, 1 sa contaminated solely
 with DON)

incidence: 1/1*, conc.: 204 µg/kg, sample
 year: 1982, country: Japan⁵³⁷, sa from
 Canada, *ncac (1 sa co-contaminated with
 DON, NIV, and ZEA)

incidence: 4/22*, Ø conc.: 406 µg/kg,
 sample year: 1984, country: Japan⁵³⁸,
 sa from Germany, *ncac

incidence: 0/0*, no sa investigated, sample
 year: 1997, country: Germany⁵⁶²,
 *conventional

incidence: 4/7*, conc. range: 31–86 µg/kg,
 Ø conc.: 53.5 µg/kg, sample year: 1997,
 country: Germany⁵⁶², sa from Germany
 and unknown origin, *organic
 (2 sa co-contaminated with DON
 and ZEA, 2 sa contaminated solely
 with DON)

incidence: 38/43, conc. range: 5–50 µg/kg
 (34 sa), 50–100 µg/kg (3 sa), >100 µg/kg
 (1 sa), sample year: 1998?, country:
 Finland⁷⁶⁵

incidence: 5/22*, conc. range: 200**–460 µg/kg, sample year: 2000, country: Czech Republic⁸⁹⁸, *sa from 6 cultivars, **LOQ

incidence: 2/15*, conc. range: 200**–330 µg/kg, sample year: 2001, country: Czech Republic⁸⁹⁸, *sa from 4 cultivars, **LOQ

incidence: 1/32*, conc.: 1,100 µg/kg, sample year: 2002, country: Czech Republic⁸⁹⁸, *sa from 6 cultivars, **LOQ

incidence: 8/24*, conc. range: 200**–650 µg/kg, sample year: 2005, country: Czech Republic⁸⁹⁸, *sa from 7 cultivars, **LOQ

incidence: 1/20*, conc.: 850 µg/kg, sample year: 2006, country: Czech Republic⁸⁹⁸, *sa from 5 cultivars, **LOQ

incidence: 4/23*, conc. range: <100 µg/kg (1 sa), ≥100–240 µg/kg (3 sa), sample year: 2001, country: Slovakia/Poland¹⁰⁴⁷, sa from Poland, *ncac

incidence: 37/37, conc. range: ≤288 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 15/15*, conc. range: 22.6–190.5 µg/kg, Ø conc.: 60.4 µg/kg, sample year: 2001, country: Czech Republic¹¹²⁷, *ncac

incidence: 5/5*, conc. range: 13–26 µg/kg, Ø conc.: 15 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac

(2 sa co-contaminated with DON and OTA, 1 sa co-contaminated with DON and NIV, 2 sa contaminated solely with DON)

incidence: 9/9*, conc. range: tr–691 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 5/7*, conc. range: tr, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 10/61, conc. range: 50–200 µg/kg, Ø conc.: 90 µg/kg, sample year: 2000, country: Germany¹²⁶⁵

incidence: 10/62, conc. range: 50–420 µg/kg, Ø conc.: 140 µg/kg, sample year: 2001, country: Germany¹²⁶⁵

incidence: 16/68, conc. range: 50–750 µg/kg, Ø conc.: 190 µg/kg, sample year: 2002, country: Germany¹²⁶⁵

incidence: 6/65, conc. range: 50–80 µg/kg, Ø conc.: 60 µg/kg, sample year: 2003, country: Germany¹²⁶⁵

incidence: 5/5, Ø conc.: 95 µg/kg, sample year 2005–2008, country: Korea¹³⁰³

incidence: 1/2* **, conc.: 292 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *winter rye, **conventional

incidence: 4/4* **, conc. range: 185.60–195.70 µg/kg, Ø conc.: 190.88 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter rye, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter rye, **conventional

incidence: 4/4* **, conc. range: 120.60–173.00 µg/kg, Ø conc.: 159.08 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter rye, **organic

incidence: 15/15, conc. range: 87–500 µg/kg, Ø conc.: 269.8 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, HT-2, and ZEA, 3 sa co-contaminated with DON and HT-2, 2 sa co-contaminated with DON and T-2, 6 sa co-contaminated with DON and ZEA, 3 sa contaminated solely with DON)

3-ACETYLDEOXYNIVALENOL

incidence: 4/31, conc.: 15–38 µg/kg, Ø conc.: 24 µg/kg, country: sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 22/37, conc. range: ≤5.0 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

15-ACETYDEOXYNIVALENOL

incidence: 28/37, conc. range: ≤ 8.6 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

ENNIATIN A₁

incidence: 1/1*, conc.: tr, sample year: 2001, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with ENA₁, ENB, and ENB₁)

ENNIATIN B

incidence: 1/1*, conc.: 47 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with ENA₁, ENB, and ENB₁)

ENNIATIN B₁

incidence: 1/1*, conc.: tr, sample year: 2001, country: Finland⁴⁵⁹, *ncac (1 sa co-contaminated with ENA₁, ENB, and ENB₁)

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/37, conc. range: ≤ 0.18 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

HT-2 TOXIN

incidence: 12/46*, conc.: ≤ 353 $\mu\text{g}/\text{kg}$, \emptyset conc.: 61 $\mu\text{g}/\text{kg}$, year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 1/31, conc.: 23 $\mu\text{g}/\text{kg}$, year: 1987/1988, country: Finland⁴⁵⁵

incidence: 33/37, conc. range: ≤ 1.5 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

incidence: 4/15, conc. range: 10.1–15 $\mu\text{g}/\text{kg}$, \emptyset conc.: 13.5 $\mu\text{g}/\text{kg}$, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, HT-2, and ZEA, 3 sa co-contaminated with DON and HT-2)

MONILIFORMIN

incidence: 3/3* **, conc. range: 6,100–12,300 $\mu\text{g}/\text{kg}$, \emptyset conc.: 9,030 $\mu\text{g}/\text{kg}$, sample year: probably 1985–1989, country: UK/Poland⁵²⁴, sa from Poland, *ncac, ***Fusarium* damaged kernels

NEOSOLANIOL

incidence: 3/37, conc. range: ≤ 0.04 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

NIVALENOL

incidence: 1/46*, conc.: 20 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 1/31, conc.: 33 $\mu\text{g}/\text{kg}$, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 5/5* **, conc. range: 46–114 $\mu\text{g}/\text{kg}$, \emptyset conc.: 83 $\mu\text{g}/\text{kg}$, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *for food and feed, **polished rye (1 sa co-contaminated with DON and NIV, 3 sa co-contaminated with NIV and ZEA, 1 sa contaminated solely with NIV)

incidence: 3/17*, conc. range: 200–410 $\mu\text{g}/\text{kg}$, sample year: 1990, country: Canada⁵²¹, *ncac

incidence: 10/30*, \emptyset conc.: 47 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 3/4*, conc. range: 10–34 $\mu\text{g}/\text{kg}$, \emptyset conc.: 21 $\mu\text{g}/\text{kg}$, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (1 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 1/1*, conc.: 8 $\mu\text{g}/\text{kg}$, sample year: 1982, country: Japan⁵³⁷, sa from Canada, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 4/22*, \emptyset conc.: 12 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 2/2, conc. range: 6.7–17.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 12 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁸⁴³, sa imported

incidence: 28/37, conc. range: ≤ 1.8 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

incidence: 1/5*, conc.: 4 µg/kg, sample year: 2002–2006, country: Poland¹²¹⁰, *ncac (1 sa co-contaminated with DON and NIV)

incidence: 2/2* **, conc. range: 15–18 µg/kg, Ø conc.: 16.5 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON, NIV, and ZEA, 1 sa contaminated solely with NIV)

MONOACETOXYSCIRPENOL

incidence: 31/37, conc. range: ≤0.18 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TOXIN

incidence: 1/46*, conc.: 52 µg/kg, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 1/31, conc.: 17 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 4/40, conc. range: 3.0–200.0 µg/kg*, sample year: 1980–1985, country: Japan⁹⁸³, sa from Finland, Germany, Nepal, Portugal, and USSR; for detailed information please see the article

incidence: 29/37, conc. range: ≤0.30 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 2/15, conc. range: <LOQ, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (2 sa co-contaminated with DON and T-2)

T-2 TETRAOL

incidence: 30/37, conc. range: ≤8.1 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TRIOL

incidence: 1/37, conc.: 0.25 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

ZEARALENONE

incidence: 3/5* **, conc. range: 3–4 µg/kg, Ø conc.: 3.3 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *for food and feed, **polished rye (3 sa co-contaminated with NIV and ZEA)

incidence: 4/30*, Ø conc.: 22 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 1/4*, conc.: 11 µg/kg, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 1/1*, conc.: 2 µg/kg, sample year: 1982, country: Japan⁵³⁷, sa from Canada, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 3/22*, Ø conc.: 5 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *conventional

incidence: 2/7*, conc. range: 5.9–7.1 µg/kg, Ø conc.: 6.5 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Germany and unknown origin, *organic (2 sa co-contaminated with DON and ZEA)

incidence: 1/5*, conc.: 28.8 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 5/68, conc. range: 6–122 µg/kg, Ø conc.: 34 µg/kg, sample year: 2002, country: Germany¹²⁶⁵

incidence: 5/65, conc. range: 3–4 µg/kg, Ø conc.: 4 µg/kg, sample year: 2003, country: Germany¹²⁶⁵

incidence: 1/2* **, conc.: 4 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON, NIV and ZEA)

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter rye, **conventional

incidence: 4/4* **, conc. range: 11.20–20.00 µg/kg, Ø conc.: 13.53 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter rye, **organic

incidence: 7/15, conc. range: <LOQ–39 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada (1 sa co-contaminated with DON, HT-2, and ZEA, 6 sa co-contaminated with DON and ZEA)

Rye flour see Flour (rye flour)

Rye meal see Meal (rye meal)

Rye products see Product (rye products)

Saffron see Spice (saffron)

Sago may contain the following mycotoxins

Aspergillus Toxins

AFLATOXINS (B₁, B₂, G₁, G₂)
incidence: 2/65, conc. range: ≤294 µg/kg,
Ø conc.: 150 µg/kg, sample year: 1967–1969, country: Thailand¹⁶³

Salami see Sausage (salami)

Samsøe cheese see Cheese (Samsøe cheese)

Sandwich may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 31/33*, conc. range:
≤0.270 µg/kg, sample year: unknown,
country: Germany⁵⁹², *nut nougat crème sandwich

Sauce may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 2/15*, conc. range: ≤0.25 µg/l,
sample year: unknown, country:
Germany⁶³⁹, *soja- and herbal sauce
incidence: 7/50*, conc. range:
≤0.72 µg/l, sample year: unknown,

country: Germany⁶³⁹, *pepper- and barbecue sauce

Sauce (apple sauce) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL
incidence: 6/10, conc. range: 1.2–2.0 µg/l,
Ø conc.: 1.5 µg/l, sample year: 2009/2010,
country: Germany¹⁰³⁸

Sauce (chilli sauce) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1/4, conc.: 3.3 µg/kg, sample
year: unknown, country: UK⁷³²

Fusarium Toxins

NIVALENOL
incidence: 1/4, conc.: 15 µg/kg, sample
year: unknown, country: UK⁷³²

ZEARALENONE
incidence: 1/4, conc.: 7.1 µg/kg, sample
year: unknown, country: UK⁷³²

see also Sauce (peanut sauce)

Sauce (leaf sauce) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS
incidence: 3/3, conc. range: 21–34 µg/kg,
Ø conc.: 27 µg/kg, sample year: unknown,
country: UK/France/USA⁷², sa from
Gambia

Sauce (peanut sauce) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 7/12*, conc. range: 8–207 µg/kg,
sample year: 2001/2002, country: Austria/
Indonesia¹⁶⁵⁶, sa from Indonesia, *peanut-chilli sauce

incidence: 16/16*, conc. range: 2.0–4.0 µg/kg (4 sa), >4.0 µg/kg (12 sa, maximum: 230.0 µg/kg), sample year: 1998/1999, country: Indonesia/Austria/Canada¹⁶⁶³, sa from Indonesia, *peanut-chilli sauce

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 18/20, conc. range: 19–943 µg/kg, Ø conc.: 162 µg/kg, sample year: unknown, country: UK/France/USA⁷², sa from Gambia

AFLATOXINS (TOTAL)

incidence: 9/12*, conc. range: 7–613 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *peanut-chilli sauce

Sauce (soy sauce) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/10, conc. range: 20–170 µg/kg, Ø conc.: 95 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹ (1 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFB₁)

incidence: 1/7, conc.: 1.81 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴

incidence: 32/56, conc. range: 0.4–188 µg/kg, Ø conc.: 16.6 µg/kg, sample year: 1988/1989, country: China/USA¹³⁵², sa from China

AFLATOXIN G₁

incidence: 3/10, conc. range: 20–70 µg/kg, Ø conc.: 36.7 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹ (1 sa co-contaminated with AFB₁ and AFG₁, 2 sa contaminated solely with AFG₁)

AFLATOXIN G₂

incidence: 1/149, conc.: pr, sample year: 1974, country: Taiwan⁸²³

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5/5, Ø conc.: 6.82 µg/kg, sample year: 1996, country: Japan⁶⁹⁵

Sauce (tomato sauce) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 8/24*, conc. range: 4–10 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomato sauces, tomato soup

ALTERNARIOL METHYL ETHER

incidence: 7/24*, conc. range: 1–4 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomato sauces, tomato soup

TENUAZONIC ACID

incidence: 24/24*, conc. range: 4–144 µg/kg, Ø conc.: 40 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomato sauces, tomato soup

Sausage may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/25, conc.: 7 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 1/25, conc.: 3 µg/kg, sample year: unknown, country: Egypt¹⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/12*, conc.: ≤0.06 µg/kg, sample year: 2001/2002, country: Italy³²², *Würstel

incidence: 4/12* **, conc. range: ≤0.08 µg/kg, Ø conc.: 0.06 µg/kg, sample year: 2001/2002, country: Italy³²², *salami

incidence: 1/12*, conc.: 0.8 µg/kg, sample year: unknown, country: Switzerland³⁷⁸, *scalding sausages

incidence: 36/53*, conc. range: ≤4.56 µg/kg, sample year: unknown, country: Germany⁵⁹⁸, *liver-type sausages

incidence: 44/57*, conc. range: ≤ 3.16 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹⁸, *blood sausages

incidence: 21/45*, conc. range: ≤ 0.38 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹⁸, *Bologna-type sausages

incidence: 28/56*, conc. range: ≤ 0.27 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹⁸, *raw sausages

incidence: 5/31*, conc. range: ≤ 0.19 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹⁸, *beef sausages

incidence: 7/40*, conc. range: ≤ 0.03 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹⁸, *poultry sausages

incidence: 4/32, conc. range: 1–1.8 $\mu\text{g}/\text{kg}$, sample year: 1990, country: UK⁶³⁶, sa from UK and different countries?

incidence: 72/160, conc. range: 3–18 $\mu\text{g}/\text{kg}$ *, sample year: unknown, country: Italy/Croatia¹¹⁵⁵, sa from Italy, *in casings of various types of sausages; for detailed information please see the article

incidence: 14/30*, conc. range: 0.006–0.06 $\mu\text{g}/\text{kg}$ (9 sa), 0.06–1 $\mu\text{g}/\text{kg}$ (5 sa, maximum: 0.4 $\mu\text{g}/\text{kg}$), sample year: unknown, country: Italy¹²⁸⁰, *salami

Fusarium Toxins

ZEARELENONE

incidence: 5/20, conc. range: 2.1–8.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6.3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁴⁴³

Savoury snacks see Snack

Semolina see Grit, Grit (maize grits), Grit (wheat grits)

Serum (pig serum) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 148/388, conc. range: 1–520 $\mu\text{g}/\text{l}$, sample year: 1983/1984, country: Poland/Sweden⁵⁶⁰, sa from Poland

incidence: 51/52, conc. range: ≤ 13.4 $\mu\text{g}/\text{l}$, \emptyset conc.: 2.43 $\mu\text{g}/\text{l}$, sample year: 1998, country: Romania⁵⁸⁶

incidence: 52/200, conc. range: 0.1–0.5 $\mu\text{g}/\text{l}$ (46 sa), 0.51–1.0 $\mu\text{g}/\text{l}$ (4 sa), >1.0 $\mu\text{g}/\text{l}$ (2 sa, maximum: 1.24 $\mu\text{g}/\text{l}$), sample year: 1995, country: Austria⁵⁸⁹

incidence: 66/287, conc. range: 0.1–0.5 $\mu\text{g}/\text{l}$ (58 sa), 0.51–1.0 $\mu\text{g}/\text{l}$ (1 sa), >1.0 $\mu\text{g}/\text{l}$ (7 sa, maximum: 30.36 $\mu\text{g}/\text{l}$), sample year: 1998, country: Austria⁵⁸⁹

incidence: 45/85, conc. range: 0.29–17.6 $\mu\text{g}/\text{l}$, sample year: 1988/1989, country: Germany⁶⁰³

incidence: 910/1,200, conc. range: <10 $\mu\text{g}/\text{l}$ (774 sa), 10–20 $\mu\text{g}/\text{l}$ (87 sa), 20–50 $\mu\text{g}/\text{l}$ (36 sa), 50–100 $\mu\text{g}/\text{l}$ (8 sa), 100–150 $\mu\text{g}/\text{l}$ (2 sa), 150–200 $\mu\text{g}/\text{l}$ (2 sa), 229 $\mu\text{g}/\text{l}$ (1 sa), sample year: 1986, country: Canada⁶⁴⁴

incidence: 572/1,588, conc. range: 0.3–211 $\mu\text{g}/\text{l}$, sample year: 1989/1990, country: Canada⁶⁴⁸

incidence: 2/4, conc. range: 3.1–3.7 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3.4 $\mu\text{g}/\text{kg}$, sample year: 1986, country: Belgium⁶⁵⁸

incidence: 4/4, conc. range: 2.3–3.7 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.95 $\mu\text{g}/\text{kg}$, sample year: 1986, country: Belgium⁶⁵⁸

incidence: 191/216, conc. range: ≥ 0.10 $\mu\text{g}/\text{l}$ (178 sa), ≥ 1.0 $\mu\text{g}/\text{l}$ (11 sa), ≥ 5.0 $\mu\text{g}/\text{l}$ (2 sa, maximum: 12.5 $\mu\text{g}/\text{l}$), \emptyset conc.: 0.50 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Norway⁶⁷⁵

incidence: 10/16*, conc. range: LOD/LOQ–4.9 $\mu\text{g}/\text{kg}$ (5 sa), 5.0–9.9 $\mu\text{g}/\text{kg}$ (1 sa), 10.0–24.9 $\mu\text{g}/\text{kg}$ (3 sa), 4.4 $\mu\text{g}/\text{kg}$? (1 sa), sample year: 1985, country: EU¹⁰³⁴, sa from Netherlands, *porcine plasma powder

incidence: 28/90, conc. range: 0.1–1 $\mu\text{g}/\text{l}$ (14 sa), 1–5 $\mu\text{g}/\text{l}$ (8 sa), >5 $\mu\text{g}/\text{l}$ (6 sa, maximum: 220.8 $\mu\text{g}/\text{l}$), sample year: 2006/2007, country: Serbia¹²⁷⁶

incidence: 3/3, conc. range: 209.4–363.1 $\mu\text{g}/\text{l}$, \emptyset conc.: 285.1 $\mu\text{g}/\text{l}$, sample year: unknown, country: Belgium¹³⁷²

Fusarium Toxins

ZEARALENONE

incidence: 9/52, conc. range: ≤ 0.964 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.80 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Romania⁵⁸⁶

Sesame may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 15/17, conc. range: 0.3–14 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

ALTERNARIOL METHYL ETHER

incidence: 16/17, conc. range: 0.2–4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

MACROSPORIN A

incidence: 16/17, conc. range: 1.3–32 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

TENUAZONIC ACID

incidence: 16/17, conc. range: 2–40 $\mu\text{g}/\text{kg}$, \emptyset conc.: 16 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/6*, conc.: 5 $\mu\text{g}/\text{kg}$, sample year: 1976, country: Guatemala³⁴, *sa stored for 6 months during dry season
 incidence: 4*/19, conc. range: 4–10 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁶⁷, *moldy
 incidence: 4*/211, conc. range: 2 $\mu\text{g}/\text{kg}$, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported
 incidence: 2/19, conc. range: 0.6–2.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.5 $\mu\text{g}/\text{kg}$, sample year: 1986–1990, country: Japan⁹⁹

incidence: 7/8, conc. range: 0.54–1.82 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.90 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Malaysia¹⁶⁰⁰

AFLATOXIN B₂

incidence: 2/19, conc. range: 0.2–0.5 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.4 $\mu\text{g}/\text{kg}$, sample year: 1986–1990, country: Japan⁹⁹

AFLATOXIN G₁

incidence: 4*/211, conc. range: <0.4 $\mu\text{g}/\text{kg}$, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported
 incidence: 20/20, conc. range: 0.06–2.04 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.75 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Turkey¹⁰³⁶

AFLATOXIN G₂

incidence: 4*/211, conc. range: <0.3 $\mu\text{g}/\text{kg}$, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/75, conc. range: <10 $\mu\text{g}/\text{kg}$, \emptyset conc.: <1 $\mu\text{g}/\text{kg}$, sample year: 1967–1969, country: Thailand¹⁶³

STERIGMATOCYSTIN

incidence: 1/17, conc.: 25 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

VERSICOLORIN C

incidence: 1/17, conc. 1.8 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 3/17, conc. range: 13–17 $\mu\text{g}/\text{kg}$, \emptyset conc.: 15 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

KOJIC ACID

incidence: 9/17, conc. range: 50–64,600 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7,449 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

3-NITROPROPIONIC ACID

incidence: 3/17, conc. range: 3–95 $\mu\text{g}/\text{kg}$, \emptyset conc.: 35 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

OCHRATOXIN A

incidence: 9/24, conc. range: ≤ 0.860 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁵⁹²

Fusarium Toxins**AUROFUSARIN**

incidence: 11/17, conc. range: 7–43 $\mu\text{g}/\text{kg}$, \emptyset conc.: 19 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

BEAUVERICIN

incidence: 16/17, conc. range: 3–82 $\mu\text{g}/\text{kg}$, \emptyset conc.: 25 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

DEOXYNIVALENOL

incidence: 15/17, conc. range: 8–76 $\mu\text{g}/\text{kg}$, \emptyset conc.: 28 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

EQUISETIN

incidence: 14/17, conc. range: 0.2–7 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

FUSARIC ACID

incidence: 1/17, conc.: 9 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

ZEARALENONE

incidence: 2/7*, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 15/17, conc. range: 0.7–38 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

ZEARALENONE-4-SULFATE

incidence: 14/17, conc. range: 0.04–0.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.2 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

Penicillium Toxins**BREFELDIN A**

incidence: 4/17, conc. range: 69–114 $\mu\text{g}/\text{kg}$, \emptyset conc.: 90 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

CURVULARIN

incidence: 15/17, conc. range: 0.1–10 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

EMODIN

incidence: 17/17, conc. range: 5–1,929 $\mu\text{g}/\text{kg}$, \emptyset conc.: 227 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

GRISEOFULVIN

incidence: 1/17, conc.: 17 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

DECHLOROGRISEOFULVIN

incidence: 1/17, conc.: 17 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

PESTALOTIN

incidence: 1/17, conc.: 17 $\mu\text{g}/\text{kg}$, sample year: 2011, country: Nigeria/Austria¹⁵⁰⁸, sa from Nigeria

Sesame oil see Oil (sesame oil)

Sesame paste see Paste (sesame paste)

Sesame products see Product (sesame products)

Sherry see Wine, miscellaneous

Shiro may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 5/60, conc. range: 100–500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 271 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Ethiopia⁵³

Shiro is a homogenous stew. It consisted primary of powdered chickpeas or broad bean meal and is often prepared with spices.

Singkamas see Tuber

Snack may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/11*, conc. range: 1.3–2.0 µg/kg, Ø conc.: 1.7 µg/kg, sample year: unknown, country: Colombia²⁹⁶, *snacks and breakfast cereals

incidence: 5/11*, conc. range: 8–75 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *traditional snack

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 15/60*, conc. range: 50–100 µg/kg, sample year: unknown, country: Egypt³⁸⁶, *maize-based snacks

AFLATOXINS (TOTAL)

incidence: 1/72*, conc.: 0.8 µg/kg, sample year: 2008/2009, country: Spain¹⁵³⁶, *corn snacks

incidence: 5/11*, conc. range: 7–112 µg/kg, sample year: 2001/2002, country: Austria/Indonesia¹⁶⁵⁶, sa from Indonesia, *traditional snack

AFLATOXINS

incidence: 4* **/40, conc. range: 10–40 µg/kg, sample year: unknown, country: Nigeria⁸⁵⁷, *melon balls, **all sa contained AFB₁ (2 sa co-contaminated with AFB₁, AFB₂ and/or AFG₁)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 28/32*, conc. range: ≤0.110 µg/kg, sample year: unknown, country: Germany⁵⁹², *bar

incidence: 40/47*, conc. range: ≤3.600 µg/kg, sample year: unknown, country: Germany⁵⁹², *nut bar

incidence: 39/67*, conc. range: ≤1.720 µg/kg, sample year: unknown, country: Germany⁵⁹², *muesli bar

Fusarium Toxins

DEOXYNIVALENOL

incidence: 16/22*, conc. range: ≤450 µg/kg, sample year: 1983/1984, country: USA⁵⁴⁵, *wheat-based snacks

incidence: 14/21, conc. range: ≤500 µg/kg, sample year: 1983, country: USA⁵⁶¹

incidence: 21/34*, conc. range: 13–320 µg/kg, Ø conc.: 124 µg/kg, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 36/40*, conc. range: 10–100 µg/kg (18 sa), 101–250 µg/kg (4 sa), 251–500 µg/kg (4 sa), 501–750 µg/kg (9 sa), 879 µg/kg (1 sa), sample year: 2000/2001, country: UK⁸³⁶, *savoury snacks (4 sa co-contaminated with DON, 3-AcDON, 15-AcDON, NIV, and ZEA, 9 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and NIV, 2 sa co-contaminated with DON, 15-AcDON, and ZEA, 1 sa co-contaminated with DON and 15-AcDON, 2 sa co-contaminated with DON and NIV, 16 sa contaminated solely with DON)

incidence: 56/71*, conc. range: ≤304 µg/kg, Ø conc.: 153 µg/kg, sample year: 2008, country: Spain⁹⁷⁷, *corn snacks

incidence: 13/57*, conc. range: 36.4–131.7 µg/kg, sample year: 2005, country: Spain⁹⁷⁸, *baked corn snacks

incidence: 12/63*, conc. range: 26.1–80.4 µg/kg, sample year: 2005, country: Spain⁹⁷⁸, *fried corn snacks

incidence: 4/5*, conc. range: 46.2–175.6 µg/kg, Ø conc.: 80.0 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *baked corn snack

incidence: 4/5*, conc. range: 28.3–109.1 µg/kg, Ø conc.: 53.1 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *fried corn snack

incidence: 3/10*, conc. range: ≤ 540 $\mu\text{g}/\text{kg}$,
sample year: unknown, country:
Austria¹⁵⁴⁶, *conventional

incidence: 3/5*, conc. range: ≤ 436 $\mu\text{g}/\text{kg}$,
sample year: unknown, country:
Austria¹⁵⁴⁶, *organic

3-ACETYLDEOXYNIVALENOL

incidence: 4/40, conc. range: 11–15 $\mu\text{g}/\text{kg}$,
sample year: 2000/2001, country: UK⁸³⁶,
*savoury snacks (4 sa co-contaminated
with DON, 3-AcDON, 15-AcDON, NIV,
and ZEA)

15-ACETYLDEOXYNIVALENOL

incidence: 18/40, conc. range: 10–100 $\mu\text{g}/\text{kg}$
(10 sa), 101–250 $\mu\text{g}/\text{kg}$ (8 sa, maximum:
214 $\mu\text{g}/\text{kg}$), sample year: 2000/2001,
country: UK⁸³⁶, *savoury snacks (4 sa
co-contaminated with DON, 3-AcDON,
15-AcDON, NIV, and ZEA, 9 sa co-
contaminated with DON, 15-AcDON, NIV,
and ZEA, 2 sa co-contaminated with DON,
15-AcDON, and NIV, 2 sa co-contaminated
with DON, 15-AcDON, and ZEA, 1 sa co-
contaminated with DON and 15-AcDON)

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 28/34*, conc. range: 11–94 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 32 $\mu\text{g}/\text{kg}$, sample year: 2010,
country: Czech Republic⁶⁸⁸

ENNIATIN A

incidence: 34/34*, conc. range: 20–65 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 41 $\mu\text{g}/\text{kg}$, sample year: 2010,
country: Czech Republic⁶⁸⁸

ENNIATIN A₁

incidence: 5/34*, conc. range: 24–61 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 28 $\mu\text{g}/\text{kg}$, sample year: 2010,
country: Czech Republic⁶⁸⁸

ENNIATIN B

incidence: 23/34*, conc. range: 13–
240 $\mu\text{g}/\text{kg}$, \emptyset conc.: 50 $\mu\text{g}/\text{kg}$, sample
year: 2010, country: Czech Republic⁶⁸⁸

ENNIATIN B₁

incidence: 18/34*, conc. range: 8–106 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 18 $\mu\text{g}/\text{kg}$, sample year: 2010,
country: Czech Republic⁶⁸⁸

FUMONISIN B₁

incidence: 19/30*, conc. range: 3–43 $\mu\text{g}/\text{kg}$,
sample year: 1996, country: Korea³⁷⁴,
*rice-based snacks

incidence: 10/14*, conc. range: 25.8–
188 $\mu\text{g}/\text{kg}$, \emptyset conc.: 52.7 $\mu\text{g}/\text{kg}$, sample
year: 1996, country: Korea³⁷⁵, *maize-
based snacks

incidence: 2/15*, conc. range: 350–370 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 360 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: Turkey³⁸¹,
sa partly imported, *corn snacks

incidence: 6/10, conc. range: 2–65 $\mu\text{g}/\text{kg}$,
sample year: 1996, country: Denmark³⁸⁵,
*corn-based snacks

incidence: 2/5*, conc. range: 152–314 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 233 $\mu\text{g}/\text{kg}$, sample year: 1995/1996,
country: Uruguay/Canada/USA³⁹⁹, sa from
Uruguay, *corn-based snacks

incidence: 2/11*, conc. range: ≤ 200 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 130 $\mu\text{g}/\text{kg}$, sample year: 1993,
country: Spain⁴⁰⁴, *corn-based snacks

incidence: 26/78, conc. range: $\leq 2,395$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 455.5 $\mu\text{g}/\text{kg}$, sample year:
unknown, country: Taiwan⁴¹⁸

incidence: 14/39*, conc. range: 16.4–
135.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 46.27 $\mu\text{g}/\text{kg}$, sample
year: 1998–2000, country: Spain⁴²¹, *corn-
based snacks

incidence: 2/6*, conc. range: 24–127 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 76 $\mu\text{g}/\text{kg}$, sample year: 1998,
country: Colombia⁶⁷², *maize-based
snacks (1 sa co-contaminated with
FB₁ and FB₂, 1 sa contaminated solely
with FB₁)

incidence: 41/50*, conc. range: $\leq 1,670$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 113 $\mu\text{g}/\text{kg}$, sample year:
2006/2007, country: Japan⁹⁰⁰, *corn snacks

incidence: 17!/20*, conc. range: tr–330 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 115 $\mu\text{g}/\text{kg}$, sample year: 2003–
2005, country: Brazil⁹⁵⁸, *corn-based
snacks

incidence: 1/9*, conc.: 68 $\mu\text{g}/\text{kg}$, sample
year: 2006, country: Portugal/Spain¹²⁵², sa
from Spain, *corn-based snacks

incidence: 1/16*, conc.: 171 µg/kg, sample year: 2005, country: Portugal¹⁴²², *maize snacks

FUMONISIN B₂

incidence: 3/10, conc. range: 4–8 µg/kg, sample year: 1996, country: Denmark³⁸⁵, *corn-based snacks

incidence: 16/78, conc. range: ≤715 µg/kg, Ø conc.: 145.3 µg/kg, sample year: unknown, country: Taiwan⁴¹⁸

incidence: 1/6*, conc.: 73 µg/kg, sample year: 1998, country: Colombia⁶⁷², *maize-based snacks (1 sa co-contaminated with FB₁ and FB₂)

incidence: 40/50*, conc. range: ≤597 µg/kg, Ø conc.: 31.8 µg/kg, sample year: 2006/2007, country: Japan⁹⁰⁰, *corn snacks

incidence: 17/20*, conc. range: tr–260 µg/kg, sample year: 2003–2005, country: Brazil⁹⁵⁸, *corn-based snacks

incidence: 1/16*, conc.: 90 µg/kg, sample year: 2005, country: Portugal¹⁴²², *maize snacks

FUMONISIN B₃

incidence: 1/40*, conc.: 104.44 µg/kg, sample year: 1993, country: USA²³⁵, *corn-based snacks

incidence: 36/50*, conc. range: ≤281 µg/kg, Ø conc.: 19.5 µg/kg, sample year: 2006/2007, country: Japan⁹⁰⁰, *corn snacks

FUMONISINS (B₁, B₂)

incidence: 12/16*, conc. range: 22–561 µg/kg, Ø conc.: 110 µg/kg, sample year: 2008/2009, country: Italy¹⁹², *maize snacks

incidence: 44/216*, conc. range: ≤475.5 µg/kg, Ø conc.: 119.5 µg/kg, sample year: 2008/2009, country: Spain¹⁴³⁰, *corn snacks

FUMONISINS (B₁, B₂, B₃)

incidence: 31/40*, conc. range: 11–220 µg/kg, sample year: 1994/1995, country: UK³⁸³, *corn snacks

incidence: 7/9*, conc. range: ≤554 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *gluten-free snacks, **free fumonisins

HYDROLIZED FUMONISINS (HFB₁, HFB₂, HFB₃)
incidence: 7/9*, conc. range: ≤245 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *gluten-free snacks, **free fumonisins

FUMONISINS

incidence: 4/4*, conc. range: ≤4,740 µg/kg**, sample year: unknown, country: Italy¹⁰⁵⁴, *gluten-free snacks, **bound fumonisins

incidence: 14/17*, conc. range: ≤2,625 µg/kg, sample year: unknown, country: Italy¹⁴⁶⁵, *gluten-free snacks

FUMONISINS (TOTAL)

incidence: 4/11, conc. range: 500–76,800 µg/kg, Ø conc.: 24,870 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹

incidence: 2/4*, conc. range: 11,700–50,200 µg/kg, Ø conc.: 30,950 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹, *corn snacks (cheese flavored)

incidence: 2/3*, conc. range: 300–5,600 µg/kg, Ø conc.: 2,950 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹, *corn snacks (beef and onion flavored)

HT-2 TOXIN

incidence: 6/71*, conc. range: ≤895 µg/kg, Ø conc.: 214 µg/kg, sample year: 2008, country: Spain⁹⁷⁷, *corn snacks

MONILIFORMIN

incidence: 7/43, conc. range: <15–32 µg/kg, sample year: unknown, country: UK⁷⁴³

NIVALENOL

incidence: 1/34*, conc.: pr, sample year: 2010, country: Czech Republic⁶⁸⁸

incidence: 17/40*, conc. range: 12–43 µg/kg, sample year: 2000/2001, country:

UK⁸³⁶, *savoury snacks (4 sa co-contaminated with DON, 3-AcDON, 15-AcDON, NIV, and ZEA, 9 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and NIV, 2 sa co-contaminated with DON and NIV)
incidence: 1/57*, conc.: 55.7 µg/kg, sample year: 2005, country: Spain⁹⁷⁸, *baked corn snacks

T-2 TOXIN

incidence: 1/71, conc.: 70 µg/kg, sample year: 2008, country: Spain⁹⁷⁷

ZEARALENONE

incidence: 1/9, conc.: 2.9 µg/kg, sample year: 1985, country: USA⁸³¹

incidence: 15/40*, conc. range: 8–25 µg/kg (1 sa), 25.1–50 µg/kg (7 sa), 50.1–75 µg/kg (4 sa), 75.1–99.0 µg/kg (3 sa), sample year: 2000/2001, country: UK⁸³⁶, *savoury snack (4 sa co-contaminated with DON, 3-AcDON, 15-AcDON, NIV, and ZEA, 9 sa co-contaminated with DON, 15-AcDON, NIV, and ZEA, 2 sa co-contaminated with DON, 15-AcDON, and ZEA)

incidence: ?/3*, conc. range: <10 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *cereal snack bars

incidence: 5/5*, conc. range: 12.5–90.4 µg/kg, Ø conc.: 33.7 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *baked corn snack

incidence: 4/5*, conc. range: 19.9–144.9 µg/kg, Ø conc.: 91.2 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *fried corn snack

incidence: 19/19*, conc. range: 371–1,471 µg/kg, Ø conc.: 832 µg/kg, sample year: unknown, country: Iran¹³¹⁰, *cheese snack

incidence: 17/72*, conc. range: ≤22.8 µg/kg, Ø conc.: 5.9 µg/kg**, sample year: 2008, country: Spain¹⁵³⁵, *corn snacks, **of pos sa?

α-ZEARALENONE

incidence: 1/5*, conc.: 47.7 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *baked corn snack

incidence: 2/5*, conc. range: 36.4–71.3 µg/kg, Ø conc.: 53.5 µg/kg, sample year: unknown, country: Spain¹⁰⁰⁴, *fried corn snack

ZEARALENONE-4-SULFATE

incidence: 1/3*, conc.: 1.8 µg/kg, sample year: unknown, country: Austria/UK⁹²⁷, sa from UK, *cereal snack bars

see also Product (snack products)

Snack foods see Snack

Soft drinks see Drink

Soja- and herbal-sauce see Sauce

Sorghum may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 5/20* **, conc. range: 20–700 µg/kg, Ø conc.: 264 µg/kg, sample year: unknown, country: India³³⁷, *ncac, **quality of sa: partially discolored and discolored

ALTERNARIOL METHYL ETHER

incidence: 7/20* **, conc.: 600–1,800 µg/kg, Ø conc.: 1,012 µg/kg, sample year: unknown, country: India³³⁷, *ncac, **quality of sa: partially discolored and discolored

ALBERTOXIN I

incidence: 2/15, Ø conc.: 185 µg/kg, sample year: unknown, country: Egypt²⁹¹

TENUAZONIC ACID

incidence: 3/15, Ø conc.: 125 µg/kg, sample year: unknown, country: Egypt²⁹¹

incidence: 5/20* **, conc. range: 1,300–5,600 µg/kg, Ø conc.: 3,380 µg/kg, sample

year: unknown, country: India³³⁷, *ncac,
**quality of sa: partially discolored and
discolored

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/6, conc. range: 30–35 µg/kg,
sample year: unknown, country: Tunisia/
USA²⁰

incidence: 6/15*, conc. range: 1–50 µg/kg (1
sa), 51–150 µg/kg (2 sa), 151–300 µg/kg (1
sa), 301–700 µg/kg (2 sa, maximum: 550 µg/
kg), sample year: 1970–1980, country:
India¹⁷⁴, *jowar/white millet

incidence: 10?/10*, conc. range: ≤100 µg/
kg, sample year: 1998, country: India³¹³,
*discolored sorghum grains

incidence: ?/20*, conc. range: tr–163 µg/
kg, sample year: 1995, country: India⁷²⁰,
*disease affected household

incidence: ?/5*, conc. range: tr–80 µg/kg,
sample year: 1995, country: India⁷²⁰, *not
disease affected household

incidence: 4/150, conc. range: 20–60 µg/
kg, sample year: unknown, country:
India⁷⁸⁸

incidence: 7/20, conc. range: 20–480 µg/kg,
sample year: 1981, country: India⁷⁸⁹

incidence: 4/197*, conc. range: 6–45 µg/kg,
Ø conc.: 17 µg/kg, sample year: 1975/1976,
country: USA⁸⁰⁹, *ncac

incidence: 3?/19*, conc. range: 0.1–0.5 µg/
kg, sample year: 1996/1997, country:
Botswana⁸¹³, *sorghum and meal

incidence: 58/93*, conc. range: 0.34–52.9 µg/
kg, sample year: 2005/2006, country:
Tunisia⁸⁴⁶, *for food and feed

incidence: 5/82, conc. range: tr (3 sa), 20
to ≤25.9 µg/kg (2 sa), Ø conc.: 10.0 µg/kg,
sample year: 1999, country: Ethiopia/
Germany⁹¹⁹, sa from Ethiopia

incidence: 2* **/150, conc. range:
16–40 µg/kg, Ø conc.: 28 µg/kg, sample
year: 1985, country: India¹⁰¹⁷, *yellow
variety, **sa collected from earthenware

and Kotlu (storage room) type of storage
structures

incidence: 16/50, conc. range: ≤210.00 µg/kg,
Ø conc.: 37.60 µg/kg, sample year:
unknown, country: India¹⁰²³

incidence: 36/49, conc. range: 0.4–25.1 µg/
kg, sample year: 2005/2006, country:
Tunisia¹⁰⁹⁹ (4 sa co-contaminated with
AFB₁, AFB₂ and AFG₁, 30 sa
co-contaminated with AFB₁ and AFG₁,
2 sa contaminated solely with AFB₁)

incidence: 9/9* **, conc. range: 27.22–
36.13 µg/kg, Ø conc.: 30.53 µg/kg, sample
year: 2004/2005, country: Nigeria¹⁴⁷⁹,
*Guinea corn, **sa from markets

incidence: 2/3, conc. range: 14.4–79.9 µg/
kg, Ø conc.: 46.7 µg/kg, sample year: 2009,
country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia
(2 sa co-contaminated with AFB₁, AFG₂,
and FB₁; no further information available)

incidence: 151/175*, conc. range: 0.30–
79.90 µg/kg, sample year: 2004/2005,
country: India¹⁴⁸⁴, *for food and feed

incidence: 343/552*, conc. range: 0.01–
129.36 µg/kg, sample year: 2005/2006,
country: India¹⁴⁸⁴, *for food and feed

incidence: 448/611*, conc. range: 0.01–
140.48 µg/kg, sample year: 2006/2007,
country: India¹⁴⁸⁴, *for food and feed

incidence: 231/268*, conc. range: 0.01–
263.98 µg/kg, sample year: 2007/2008,
country: India¹⁴⁸⁴, *for food
and feed

incidence: 2/150, conc. range: 16–40 µg/
kg, Ø conc.: 28 µg/kg, sample year: 1985,
country: India¹⁴⁸⁶

AFLATOXIN B₂

incidence: 3/20, conc. range:
10–125 µg/kg, sample year: 1981,
country: India⁷⁸⁹

incidence: 1/197*, conc.: 9 µg/kg, sample
year: 1975/1976, country: USA⁸⁰⁹, *ncac

incidence: 45/93*, conc. range: 0.11–3.7 µg/
kg, sample year: 2005/2006, country:
Tunisia⁸⁴⁶, *for food and feed

incidence: 34/49, conc. range: <LOQ–1.9 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (4 sa co-contaminated with AFB₁, AFB₂ and AFG₁, 30 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 3/19*, conc. range: 0.2–0.5 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³, *sorghum and meal

incidence: 3/93*, conc. range: 0.45–0.7 µg/kg, sample year: 2005/2006, country: Tunisia⁸⁴⁶, *for food and feed

incidence: 4/49, conc. range: 0.09–0.3 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (4 sa co-contaminated with AFB₁, AFB₂ and AFG₁)

AFLATOXIN G₂

incidence: 3/3, conc. range: 13–36.8 µg/kg, Ø conc.: 24.6 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia (2 sa co-contaminated with AFB₁, AFG₂, and FB₁; no further information available)

AFLATOXIN

incidence: ?/40, conc. range: 1.6–90 µg/kg, sample year: 2005, country: Nigeria/USA⁹²⁶, sa from Nigeria

incidence: 15/168, Ø conc.: 29.6 µg/kg, sample year: unknown, country: South Africa/France/Kenya/Netherlands¹³¹⁹, sa from Swaziland

incidence: 2/13, conc. range: 1.7–3.0 µg/kg, Ø conc.: 2.35 µg/kg, sample year: 2009, country: Malawi/Botswana¹⁶⁴¹, sa from Malawi

AFLATOXINS (B₁, B₂)

incidence: 3/9*, conc. range: <5 µg/kg (1 sa), 6–20 µg/kg (1 sa), 25 µg/kg (1 sa), sample year: 1976, country: Guatemala³⁴, *sa stored for 6 months during dry season and treated with CS₂

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 26*/69, conc. range: 1–100 µg/kg (19 sa), 100–1,000 µg/kg (5 sa), >1,000 µg/kg (5 sa), sample year: 1966/1967, country: Uganda/USA⁵, sa

from Uganda, *16 sa contained AFB₁, 11 sa contained AFB₂, 13 sa contained AFG₁, 1 sa contained AFG₂

AFLATOXINS (TOTAL)

incidence: 3/4, conc. range: 5.50–27.20 µg/kg, Ø conc.: 17.13 µg/kg, sample year: unknown, country: USA¹⁵¹³

AFLATOXINS

incidence: 2/8, conc. range: 2–16 µg/kg, Ø conc.: 9 µg/kg, sample year: unknown, country: UK/France/USA⁷², sa from Gambia

incidence: 11/81*, conc. range: 9–20 µg/kg (6 sa), 21–30 µg/kg (4 sa), 31–39 µg/kg (1 sa), Ø conc.: 21.9 µg/kg, sample year: unknown, country: Ethiopia¹⁰⁷, *mixed sorghum

incidence: 12/81*, conc. range: 9–20 µg/kg (5 sa), 21–30 µg/kg (5 sa), 31–39 µg/kg (2 sa), Ø conc.: 24.0 µg/kg, sample year: unknown, country: Ethiopia¹⁰⁷, *white sorghum

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 43/113, conc. range: 8–950 µg/kg, Ø conc.: 117 µg/kg, sample year: unknown, country: Tunisia¹⁰²

incidence: 3/24, conc. range: 50–70 µg/kg, Ø conc.: 63.3 µg/kg, sample year: unknown, country: India⁶⁵⁶

incidence: 17/78, conc. range: 1 to <5 µg/kg (5 sa), 5 to <50 µg/kg (4 sa), 50 to <100 µg/kg (6 sa), >200 µg/kg (2 sa, maximum: 2,106 µg/kg), Ø conc.:

174.8 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 25/49, conc. range: 0.11–33.8 µg/kg, sample year: 2005/2006, country: Tunisia⁹³⁹

Fusarium Toxins

DEOXYNIVALENOL

incidence: 30/33, conc. range: 50–2,340 µg/kg, Ø conc.: 360 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 1/1* **, conc.: 198 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON, NIV, and ZEA)

ENNIATIN A

incidence: 3?/3, conc. range: ≤95,600 µg/kg, Ø conc.: 95,600 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

ENNIATIN A₁

incidence: 3?/3, conc. range: ≤480,000 µg/kg, Ø conc.: 370,400 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

ENNIATIN B₁

incidence: 3?/3, conc. range: ≤120,100 µg/kg, Ø conc.: 72,450 µg/kg, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

FUMONISIN B₁

incidence: 5/5, conc. range: 200–1,400 µg/kg, Ø conc.: 560 µg/kg, sample year: 1995–1997, country: Zimbabwe/Belgium³⁶⁵, sa from Zimbabwe

incidence: 20/20*, conc. range: 140–7,800 µg/kg, sample year: 1995, country: India⁷²⁰, *disease affected household

incidence: ?/5*, conc. range: 70–360 µg/kg, sample year: 1995, country: India⁷²⁰, *not disease affected household

incidence: 19/50, conc. range: 50–368.78 µg/kg, sample year: unknown, country: Brazil⁸⁹⁰

incidence: 5?/49, Ø conc.: 223.8 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁷

incidence: 62/144* **, conc. range: 9–1,398 µg/kg, sample year: 2007, country: India¹⁴⁷⁵, *for food and feed, **elite sorghum cultivars

incidence: 2/3, conc. range: 6.4–120 µg/kg, Ø conc.: 63.2 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia (2 sa co-contaminated with AFB₁, AFG₂, and FB₁; no further information available)

incidence: 19/50*, conc. range: 50–368.78 µg/kg, sample year: 2005, country: Brazil¹⁶⁵⁸, *ncac

FUMONISIN B₂

incidence: 5?/49, Ø conc.: 159.0 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁷

FUMONISINS (B₁, B₂)

incidence: 5/49, conc. range: 80–629 µg/kg, Ø conc.: 319.2 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁷

FUMONISINS

incidence: 3/20*, conc. range: 20–60 µg/kg, Ø conc.: 43 µg/kg, sample year: 1996/1997, country: Botswana⁸¹³, *sorghum and meal

incidence: 3/39, conc. range: 1,370–2,117 µg/kg, Ø conc.: 1,713.3 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

NEOSOLANIOL

incidence: 1/7*, conc.: 25 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

NIVALENOL

incidence: 1/11*, conc.: 91 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 1/6*, conc.: 91 µg/kg, sample year: 1983, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 3/33, conc. range: 50–490 µg/kg, Ø conc.: 306.7 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 1/1* **, conc.: 27 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON, NIV, and ZEA)

DIACETOXYSCIRPENOL

incidence: 1/7*, conc.: 50 µg/kg, sample year: 1997–2000, country: Saudi Arabia³²⁵, *ncac

incidence: 6/14, conc. range: 7–84 µg/kg, Ø conc.: 37 µg/kg, sample year: unknown, country: India¹²³¹

T-2 TOXIN

incidence: 3/43*, conc. range: 1,670–14,960 µg/kg, Ø conc.: 9,986.7 µg/kg, sample year: 1984, country: India⁴³¹, *ncac

incidence: 1/24*, conc.: 15,000 µg/kg, sample year: 1985, country: India⁴³¹, *ncac

incidence: 2/20, conc. range: 10–45 µg/kg, Ø conc.: 27.5 µg/kg, sample year: 1981, country: India⁷⁸⁹

incidence: 6/14, conc. range: 12–64 µg/kg, Ø conc.: 38 µg/kg, sample year: unknown, country: India¹²³¹

ZEARALENONE

incidence: 6/6*, conc. range: 760–4,500 µg/kg, sample year: unknown, country: Portugal⁴⁵¹, *ncac

incidence: 1/11*, conc.: 100 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 1/5*, Ø conc.: 100 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 56/197*, conc. range: <400 µg/kg (3 sa), 400–900 µg/kg (18 sa), 1,000–5,000 µg/kg (33 sa), >5,000 µg/kg (2 sa), maximum: 6,900 µg/kg, sample year: 1975/1976, country: USA⁸⁰⁹, *ncac

incidence: 2/29, conc. range: 19–32 µg/kg, Ø conc.: 25.5 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 1/1* **, conc.: 136 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (1 sa co-contaminated with DON, NIV, and ZEA)

Sorghum beer see Beer

Sorghum malt see Malt (sorghum malt)

Sorghum meal see Meal (sorghum meal)

Sorghum products see Product (sorghum products)

Sorghum syrup see Syrup (sorghum syrup)

Sorghum wort see Wort (sorghum)

Soup (maize soup) may contain the following mycotoxins:

Fusarium ToxinsFUMONISIN B₁

incidence: 2/88, conc. range: 10.1–12.9 µg/kg, Ø conc.: 11.5 µg/kg, sample year: 2004–2007, country: Japan⁹⁰⁰

Sour cherry juice see Juice (cherry juice)

Soybean may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 23/50, conc. range: 25–211 µg/kg, Ø conc.: 71.3 µg/kg, sample year: 2006–2008, country: Argentina¹⁶²⁰ (15 sa co-contaminated with AOH and AME)

ALTERNARIOL METHYL ETHER

incidence: 22/50, conc. range: 62–1,153 µg/kg, Ø conc.: 334 µg/kg, sample year: 2006–2008, country: Argentina¹⁶²⁰ (15 sa co-contaminated with AOH and AME)

Aspergillus ToxinsAFLATOXIN B₁

incidence: 12/260, conc. range: 1–10 µg/kg (1 sa), >50–100 µg/kg (11 sa), sample year: during the 1990s, country: Cuba⁴⁷

incidence: 1/1*, conc.: 97 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 4/40, conc. range: ≤24.00 µg/kg, Ø conc.: 13.00 µg/kg, sample year: unknown, country: India¹⁰²³

incidence: 3/10*, conc. range: 10–20 µg/kg, Ø conc.: 13.3 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *fermented soybean (tao-chiew) (2 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFB₁)

incidence: 1/1, conc.: 4.8 µg/kg, sample year: unknown, country: Japan/Nepal¹³⁰⁶

incidence: ?/20*, conc. range: tr, sample year: unknown, country: Thailand¹⁴³⁸, *fermented soya bean

AFLATOXIN B₂

incidence: 1/1*, conc.: 20 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

AFLATOXIN G₁

incidence: 1/1*, conc.: 11 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

incidence: 3/10*, conc. range: 20–100 µg/kg, Ø conc.: 53.3 µg/kg, sample year: 1983–1985, country: Thailand¹¹⁵⁹, *fermented soybean (tao-chiew) (2 sa co-contaminated with AFB₁ and AFG₁, 1 sa contaminated solely with AFG₁)

incidence: 1/1, conc.: 5.0 µg/kg, sample year: unknown, country: Japan/Nepal¹³⁰⁶

AFLATOXIN G₂

incidence: 1/1*, conc.: 3.5 µg/kg, sample year: unknown, country: UK⁷⁰, *ncac

AFLATOXIN

incidence: 11/133, Ø conc.: 22.8 µg/kg, sample year: unknown, country: South Africa/France/Kenya/Netherlands¹³¹⁹, sa from Swaziland

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 26/31, conc. range: ≤0.100 µg/kg, year: 1996–1998, country: Germany⁶⁹⁰

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/3*, conc.: 36 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *ncac

incidence: 12/24* **, conc. range: 50–490 µg/kg, Ø conc.: 215 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (4 sa co-contaminated with DAS, DON, T-2TET, and ZEA, 1 sa

co-contaminated with DAS, DON, and T-2TET, 3 sa co-contaminated with DON, T-2TET, and ZEA, 3 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with DON)

incidence: 1/13* **, conc.: 110 µg/kg, sample year: 2004, country: Serbia⁹³⁷, *ncac, **soybean and soybean meal

incidence: 1/11* **, conc.: 100 µg/kg, sample year: 2005, country: Serbia⁹³⁷, *ncac, **soybean and soybean meal

incidence: 1/40* **, conc.: 1,600 µg/kg, sample year: 2007/2008, country: Argentina¹⁶⁴², *ncac, **reproductive stage R6

incidence: 1/40* **, conc.: 900 µg/kg, sample year: 2007/2008, country: Argentina¹⁶⁴², *ncac, **reproductive stage R8

FUMONISIN B₁

incidence: 1/1*, conc.: 8,700 µg/kg, sample year: 1994–1996, country: Spain³⁵⁵, *ncac

incidence: 13/82, conc. range: ≤8.0 µg/kg, Ø conc.: 4.5 µg/kg, sample year: 2005–2007, country: Japan⁹⁰⁰

FUMONISIN B₂

incidence: 3/82, conc. range: ≤4.8 µg/kg, Ø conc.: 4.3 µg/kg, sample year: 2005–2007, country: Japan⁹⁰⁰

HT-2 TOXIN

incidence: 2/44*, conc. range: 99–189 µg/kg, Ø conc.: 144 µg/kg, sample year: 2008/2009, country: Argentina/Italy¹⁶³¹, sa from Argentina, *ncac (2 sa co-contaminated with HT-2 and T-2)

NIVALENOL

incidence: 1/3*, conc.: 50 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *ncac

incidence: 3/9, conc. range: 8.7–12.0 µg/kg, Ø conc.: 10.6 µg/kg, sample year: unknown, country: Japan⁸⁴³, sa imported

DIACETOXYSCIRPENOL

incidence: 5/20* **, conc. range: 15–230 µg/kg, Ø conc.: 77 µg/kg, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (4 sa co-contaminated with DAS, DON, T-2TET, and ZEA, 1 sa co-contaminated with DAS, DON, and T-2TET)

T-2 TOXIN

incidence: 2/44*, conc. range: 110–184 µg/kg, Ø conc.: 147 µg/kg, sample year: 2008/2009, country: Argentina/Italy¹⁶³¹, sa from Argentina, *ncac (2 sa co-contaminated with HT-2 and T-2)

T-2 TETRAOL (PRIMARYLY HT-2)

incidence: 11/24* **, conc. range: 20–1,070 µg/kg, Ø conc.: 180 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (4 sa co-contaminated with DAS, DON, T-2TET, and ZEA, 1 sa co-contaminated with DAS, DON, and T-2TET, 3 sa co-contaminated with DON, T-2TET, and ZEA, 1 sa co-contaminated with T-2TET and ZEA, 2 sa contaminated solely with T-2TET)

ZEARALENONE

incidence: 6/97*, conc. range: 5–39 µg/kg, Ø conc.: 24 µg/kg, sample year: 1990–1993 (3 years), country: Canada⁵²¹, *included soybean and soy foods: soy flour, soybean protein, tofu, soy sauce etc.

incidence: 15/24* **, conc. range: 80–1,720 µg/kg, Ø conc.: 476 µg/kg, sample year: 1986, country: USA⁷⁷², *ncac, **discounted or refused by grain merchants (4 sa co-contaminated with DON, DAS, T-2TET, and ZEA, 3 sa co-contaminated with DON, T-2TET, and ZEA, 3 sa co-contaminated with DON and ZEA, 1 sa co-contaminated with T-2TET and ZEA, 4 sa contaminated solely with ZEA)

incidence: 2/17* **, conc. range: >200 µg/kg, sample year: 1993–1995, country:

Uruguay⁷⁸⁷, *ncac, **soy beans and by-products

incidence: 7/75, conc. range: 1.01–15.26 µg/kg, Ø conc.: 7.70 µg/kg, sample year: 1988, country: Korea/USA¹²²³, sa from Korea

Soybean flour see Flour (soybean flour)

Soybean meal see Meal (soybean meal)

Soybean oil see Oil (soybean oil)

Soybean paste see Paste (soybean paste)

Soy isoflavones see Isoflavones (soy)

Soy sauce see Sauce (soy sauce)

Sparkling wine Wine, miscellaneous

Special wine see Wine

Spelt may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/2, conc.: 2.20 µg/kg, sample year: 2005, country: Portugal/Spain¹¹⁸¹, sa from Spain

Spelt flour see Flour (spelt flour)

Spelt products see Product (spelt products)

Spelt whole meal see Meal (spelt meal)

Spice may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 5/7*, conc. range: 60–420 µg/kg, sample year: unknown, country: Germany⁷, *miscellaneous spices

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/6*, conc.: <0.4 µg/kg, sample year: 1992–1996, country: Cyprus⁷⁴, sa domestic and imported, *pepper, turmeric and others

incidence: 16[?]/78*, conc. range: ≤1.9 µg/kg, Ø conc.: 0.8 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *mixed spices

incidence: 4/10, conc. range: 10–46 µg/kg, Ø conc.: 25 µg/kg, sample year: unknown, country: USA/Egypt¹⁶², sa from Egypt

incidence: 5[?]/37*, conc. range: 0.2–0.8 µg/kg, sample year: unknown, country: Japan¹⁸⁴, *mixed spices

incidence: 2/5*, conc. range: 0.16–0.91 µg/kg, Ø conc.: 0.54 µg/kg, sample year: 2004, country: Hungary²⁵², *spice mixture

incidence: 1*/50, conc.: 5.1 µg/kg, sample year: unknown, country: Netherlands³⁰⁵, *bay leaf

incidence: 9/13, conc. range: 0.15–14.9 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹

incidence: 3/7*, conc. range: 0.54–0.95 µg/kg, Ø conc.: 0.76 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of spices (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFG₂, 1 sa contaminated solely with AFB₁)

incidence: 58[?]/136*, conc. range: >0.2–2.0 µg/kg (34 sa), >2.0–10.0 µg/kg (22 sa), sample year: 2007, country: Turkey¹⁵⁶⁰, *commercial Turkish foods

incidence: 99/248*, conc. range: >0.2–2.0 µg/kg (70 sa), >2.0–10.0 µg/kg (26 sa), >10.0–20.0 µg/kg (2 sa), >20.0–50.0 µg/kg (1 sa), sample year: 2008, country: Turkey¹⁵⁶⁰, *commercial Turkish foods

incidence: 35/57*, conc. range: >0.2–2.0 µg/kg (30 sa), >2.0–10.0 µg/kg (4 sa), >10.0–20.0 µg/kg (1 sa), sample year: 2009, country: Turkey¹⁵⁶⁰, *commercial Turkish foods

incidence: 3/4*, conc. range: 0.04–0.41 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴, *culinary mixes

incidence: 12/15*, conc. range: 0.05–6.35 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴, *spices (mixes)

AFLATOXIN B₂

incidence: 16[?]/78*, conc. range: ≤0.4 µg/kg, Ø conc.: <0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *mixed spices

incidence: 1/37, conc.: 0.2 µg/kg, year: unknown, country: Japan¹⁸⁴, *mixed spices

incidence: 1/5*, conc.: 0.25 µg/kg, sample year: 2004, country: Hungary²⁵², *spice mixture

incidence: 7/13, conc. range: 0.05–1.2 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (7 sa co-contaminated with AFB₁ and AFB₂; no further information available)

incidence: 2/7*, conc. range: 0.41–0.70 µg/kg, Ø conc.: 0.56 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of spices (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₂, AFG₁, and AFG₂)

incidence: 3/4*, conc. range: 0.02–0.08 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴, *culinary mixes

incidence: 4/15*, conc. range: 0.06–0.32 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴, *spices (mixes)

AFLATOXIN G₁

incidence: 16[?]/78*, conc. range: ≤0.5 µg/kg, Ø conc.: <0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *mixed spices

incidence: 6/13, conc. range: 0.07–2.0 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (6 sa co-contaminated with AFB₁ and AFG₁; no further information available)

incidence: 4/7*, conc. range: 0.69–7.09 µg/kg, Ø conc.: 2.64 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of spices (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFG₁ and AFG₂, 1 sa contaminated solely with AFG₁)

incidence: 1/4*, conc.: 0.02 µg/kg, sample year: 2004, country: Poland¹⁶⁵⁴, *culinary mixes

incidence: 8/15*, conc. range: 0.04–1.12 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴, *spices (mixes)

AFLATOXIN G₂

incidence: 2/13, conc. range: 0.07–0.09 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (2 sa contamination with AFB₁ and AFG₂; no further information available)

incidence: 4/7*, conc. range: 3.93–7.05 µg/kg, Ø conc.: 5.94 µg/kg, sample year: unknown, country: Japan¹³⁰⁰, *different kinds of spices (1 sa co-contamination with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₂, 2 sa co-contaminated with AFG₁ and AFG₂)

incidence: 1/15*, conc.: 0.04 µg/kg, sample year: 2005, country: Poland¹⁶⁵⁴, *spices (mixes)

AFLATOXINS (B₁, B₂)

incidence: 16/120*, conc. range: 8–35 µg/kg, sample year: unknown, country: Egypt⁷⁶⁴, *different kinds of spices

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/4*, conc.: 0.9 µg/kg, sample year: unknown, country: UK⁷³², *five spice powder

incidence: 5/6*, conc. range: 0.16–5.12 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *mixed spice powder

AFLATOXINS

incidence: 5/16*, conc. range: 0.1–5 µg/kg (3 sa), 6–10 µg/kg (1 sa), >50 µg/kg (1 sa), sample year: 1995–1999, country: Malaysia³⁹¹, *chilly powder etc.

STERIGMATOCYSTIN

incidence: 6/120*, conc. range: 10–23 µg/kg, sample year: unknown, country: Egypt⁷⁶⁴, *different kinds of spices

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/120*, conc. range: 8–12 µg/kg, Ø conc.: 10 µg/kg, sample year: unknown, country: Egypt⁷⁶⁴, *different kinds of spices

OCHRATOXIN A

incidence: 1/4*, conc.: 2.6 µg/kg, sample year: unknown, country: UK⁷³², *five spice powder

incidence: 1/6*, conc.: 0.86 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *mixed spice powder

incidence: 4/13, conc. range: 0.75–5.5 µg/kg, sample year: 2005/2006, country: Tunisia⁹³⁹

Fusarium Toxins

FUMONISIN B₁

incidence: 2/13, conc. range: 70–130 µg/kg, Ø conc.: 100.0 µg/kg, sample year: 2005/2006, country: Tunisia¹⁰⁹⁷

FUMONISINS (B₁, B₂)

incidence: ?/4*, incidence: 13–17 µg/kg, sample year: unknown, country: UK⁷³², *five spice powder

ZEARALENONE

incidence: ?/4*, conc. range: 3.2–5.2 µg/kg, sample year: unknown, country: UK⁷³², *five spice powder

Spice (ammi) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/7, conc.: 60 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXIN B₂

incidence: 1/7, conc.: 34 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXIN G₁

incidence: 1/7, conc.: 32 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

Spice (*Capsicum* spp.) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 9/17*, conc. range: 1.4–35 µg/kg, Ø conc.: 15.8 µg/kg, sample year: 2005/2006, country: Belgium/Russia/Hungary¹⁰⁰⁷, sa from Belgium, Netherlands, and Russia, *included cayenne, chilli, paprika, pili-pili, and red pepper

see also Spice (cayenne pepper, chilli) and Spice (paprika)

Spice (caraway) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 13/24, conc. range: 28–510 µg/kg, Ø conc.: 244 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹

Spice (cardamom) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 1/6, conc.: 20 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 3?/6*, conc. range: 18–129 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *greater cardamom

AFLATOXIN B₂

incidence: 1/6, conc.: 15 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 3?/6*, conc. range: 14–108 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *greater cardamom

AFLATOXIN G₁

incidence: 1/6, conc.: 12 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 3?/6, conc. range: 17–78 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *greater cardamom

AFLATOXIN G₂

incidence: 3?/6*, conc. range: 5–76 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *greater cardamom

Aspergillus and *Penicillium* Toxins**CITRININ**

incidence: 1/6, conc.: 25 µg/kg, sample year: 1984–1986, country: India⁸⁰³

OCHRATOXIN A

incidence: 1/6*, conc.: pr, sample year: 1984–1986, country: India⁸⁰³, *greater cardamom

Spice (cayenne pepper, chilli) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 5/5*, conc. range: 2.3–31.8 µg/kg, Ø conc.: 8.87 µg/kg, sample year: unknown, country: Portugal¹²⁵, *packaged cayenne pepper

incidence: 3/8*, conc. range: 1.5–2.2 µg/kg, Ø conc.: 1.97 µg/kg, sample year: unknown, country: Portugal¹²⁵, *packaged chilli

incidence: 21/42*, conc. range: <10 µg/kg (16 sa), 11–30 µg/kg (3 sa), 31–50 µg/kg (1 sa), 51–100 µg/kg (1 sa), sample year: 1998/1999, country: India¹⁴⁹, *chilli grade 1

incidence: 25/38*, conc. range: <10 µg/kg (10 sa), 11–30 µg/kg (6 sa), 31–50 µg/kg (3 sa), 51–100 µg/kg (4 sa), >100 µg/kg (2 sa), sample year: 1998/1999, country: India¹⁴⁹, *chilli grade 2

incidence: 41/44*, conc. range: <10 µg/kg (21 sa), 11–30 µg/kg (4 sa), 31–50 µg/kg (3 sa), 51–100 µg/kg (2 sa), >100 µg/kg (11 sa, maximum: 969 µg/kg), sample year: 1998/1999, country: India¹⁴⁹, *chilli grade 3

incidence: 3/12*, conc. range: <10 µg/kg (2 sa), 31–50 µg/kg (1 sa), sample year: 1998/1999, country: India¹⁴⁹, *chillies from cold store

incidence: 17/43*, conc. range: <10 µg/kg (12 sa), 11–30 µg/kg (1 sa), 51–100 µg/kg (3 sa), >100 µg/kg (1 sa), sample year: 1998/1999, country: India¹⁴⁹, *chilli powder

incidence: 10/33*, conc. range: tr–8 µg/kg, sample year: unknown, country: Canada¹⁶⁰, sa from India, *cayenne pepper

incidence: 6/6*, conc. range: tr–6 µg/kg, sample year: unknown, country: Canada¹⁶⁰, sa from India, *chilli powder (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁), 1 sa co-contamination with AFB₁ and AFB₂, 2 sa co-contaminated with AFB₁ and AFG₁)

incidence: 2/2*, conc. range: 2.5–2.7 µg/kg, Ø conc.: 2.6 µg/kg, sample year: unknown, country: Denmark¹⁹³, *chilli

incidence: 2/2*, conc. range: 2.1–5.0 µg/kg, Ø conc.: 3.6 µg/kg, sample year: unknown, country: Denmark¹⁹³, *cayenne pepper

incidence: 2/5*, conc. range: 0.75–8.1 µg/kg, Ø conc.: 4.43 µg/kg, sample year: 2004, country: Hungary²⁵², *chilli

incidence: 13/24*, conc. range: 9.5–211.3 µg/kg, Ø conc.: 62.3 µg/kg, sample year: unknown, country: Germany⁶⁰², *cayenne pepper and ground chillies

incidence: 11/22*, conc. range: ≤5 µg/kg (7 sa), >5 µg/kg (4 sa, maximum: 24 µg/kg), sample year: unknown, country: Germany/Thailand⁷⁷⁵, *chilli and cayenne pepper

incidence: 4?/9*, conc. range: 15–146 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *chilli

incidence: 29/31*, conc. range: 0.6–13.9 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries, *chilli (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 8 sa co-contaminated with AFB₁, AFB₂ and OTA, 1 sa co-contaminated with AFB₁, AFG₁ and OTA, 1 sa co-contaminated with AFB₁, AFG₂ and OTA, 17 sa co-contaminated with AFB₁ and OTA)

incidence: 4/4*, conc. range: 0.2–6.8 µg/kg, Ø conc.: 2.26 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries, *cayenne pepper (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁, AFG₁ and OTA, 2 sa co-contaminated with AFB₁ and OTA)

incidence: 5/5* **, conc. range: 2.3–70.4 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *chilli powder, **sa from Bazaar

incidence: 5/5* **, conc. range: 1.6–80.4 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *chilli powder, **sa from herbal shops

incidence: 5/5* **, conc. range: 2.1–4.2 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *chilli powder, **sa from supermarket

incidence: 18/29*, conc. range: 1–12.4 µg/kg, sample year: unknown, country: Pakistan¹¹³⁶, *whole red chilli

incidence: 17/23*, conc. range: 1–13.9 µg/kg, sample year: unknown, country: Pakistan¹¹³⁶, *crushed red chilli

incidence: 81/124*, conc. range: 1–79.9 µg/kg, sample year: unknown, country: Pakistan¹¹³⁶, *red chilli powder

incidence: 16/22*, conc. range: ≤96.3 µg/kg, sample year: 2008, country: Pakistan/Portugal/USA¹¹⁶⁸, sa from Pakistan, *whole chilli

incidence: 19/22*, conc. range: ≤89.6 µg/kg, sample year: 2008, country: Pakistan/

Portugal/USA¹¹⁶⁸, sa from Pakistan,
*ground chilli

incidence: 2/16*, conc. range: 2.3–9.0 µg/kg, Ø conc.: 5.65 µg/kg, sample year: unknown, country: India¹²⁴⁹, *chilli pods commercially available in retail stores

incidence: 8/8, conc. range: 0.58–3.5 µg/kg, Ø conc.: 2.62 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰

incidence: 19/24*, conc. range: 0.13–11.45 µg/kg, Ø conc.: 2.61 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli flake (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁ and OTA, 4 sa contaminated solely with AFB₁)

incidence: 14/22*, conc. range: 0.20–35.77 µg/kg, Ø conc.: 5.10 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli powder (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 5 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁ and OTA, 5 sa contaminated solely with AFB₁)

incidence: 52/80*, conc. range: <1.0 µg/kg (9 sa), 1–5 µg/kg (34 sa), 5–10 µg/kg (3 sa), >10 µg/kg (6 sa, maximum: 56.61 µg/kg), sample year: 2009, country: Malaysia¹⁶²⁷, *dried chilli

AFLATOXIN B₂

incidence: 5/33*, conc. range: tr, sample year: unknown, country: Canada¹⁶⁰, sa from India, *cayenne pepper

incidence: 2/6*, conc. range: tr, sample year: unknown, country: Canada¹⁶⁰, sa from India, *chilli powder (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/2*, conc. range: 1.7–2.2 µg/kg, Ø conc.: 2 µg/kg, sample year: unknown, country: Denmark¹⁹³, *chilli

incidence: 2/2*, conc. range: 2.1–3.9 µg/kg, Ø conc.: 3 µg/kg, sample year: unknown, country: Denmark¹⁹³, *cayenne pepper

incidence: 1/5*, conc.: 0.71 µg/kg, sample year: 2004, country: Hungary²⁵², *chilli

incidence: 13/24*, conc. range: 0.3–7.1 µg/kg, Ø conc.: 1.8 µg/kg, sample year: unknown, country: Germany⁶⁰², *cayenne pepper and ground chillies

incidence: 47/9*, conc. range: 11–88 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *chilli

incidence: 10/31*, conc. range: 0.2–0.7 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries, *chilli (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 8 sa co-contaminated with AFB₁, AFB₂, and OTA)

incidence: 1/4*, conc.: 0.2 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries, *cayenne pepper (1 sa co-contaminated with AFB₁, AFB₂, and OTA)

incidence: 17/24*, conc. range: 0.04–1.28 µg/kg, Ø conc.: 0.24 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli flake (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFB₂, and OTA, 3 sa contaminated solely with AFB₂)

incidence: 11/22*, conc. range: 0.05–1.07 µg/kg, Ø conc.: 0.32 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli powder (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 5 sa co-contaminated with AFB₁, AFB₂, and OTA, 3 sa contaminated solely with AFB₂)

incidence: 14/80*, conc. range: <1.0 µg/kg (8 sa), 1–5 µg/kg (3 sa), 5–10 µg/kg (2 sa), 11.45 µg/kg (1 sa), sample year: 2009, country: Malaysia¹⁶²⁷, *dried chilli

AFLATOXIN G₁

incidence: 3/6*, conc. range: tr–3 µg/kg, sample year: unknown, country: Canada¹⁶⁰, sa from India, *chilli powder (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 2 sa co-contaminated with AFB₁ and AFG₁)

incidence: 2/2*, conc. range: 0.6–1.2 µg/kg, Ø conc.: 0.9 µg/kg, sample year: unknown, country: Denmark¹⁹³, *chilli

incidence: 2/2*, conc. range: 1.0–2.4 µg/kg, Ø conc.: 1.7 µg/kg, sample year: unknown, country: Denmark¹⁹³, *cayenne pepper

incidence: 11/24*, conc. range: 0.2–18.3 µg/kg, Ø conc.: 5.9 µg/kg, sample year: unknown, country: Germany⁶⁰², *cayenne pepper and ground chillies

incidence: 4/9*, conc. range: 8–58 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *chilli

incidence: 3/31*, conc. range: 0.2–1.1 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries, *chilli (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 1 sa co-contaminated with AFB₁, AFG₁ and OTA)

incidence: 1/4*, conc.: 0.8 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries, *cayenne pepper (1 sa co-contaminated with AFB₁, AFG₁ and OTA)

incidence: 4/24*, conc. range: 0.24–2.05 µg/kg, Ø conc.: 1.27 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli flake (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa contaminated solely with AFG₁)

incidence: 4/22*, conc. range: 0.25–1.05 µg/kg, Ø conc.: 0.68 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli powder (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa contaminated solely with AFG₁)

incidence: 21/80*, conc. range: <1.0 µg/kg (14 sa), 1–5 µg/kg (3 sa), 5–10 µg/kg (2 sa), >10 µg/kg (2 sa, maximum: 17.65 µg/kg), sample year: 2009, country: Malaysia¹⁶²⁷, *dried chilli

AFLATOXIN G₂

incidence: 2/2*, conc. range: 0.7–1.0 µg/kg, Ø conc.: 0.85 µg/kg, sample year: unknown, country: Denmark¹⁹³, *chilli

incidence: 2/2*, conc. range: 0.6–1.5 µg/kg, Ø conc.: 1.1 µg/kg, sample year: unknown, country: Denmark¹⁹³, *cayenne pepper

incidence: 4/9*, conc. range: 6–40 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *chilli

incidence: 2/31*, conc. range: 0.3–0.4 µg/kg, Ø conc.: 0.35 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries, *chilli (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFG₂ and OTA)

incidence: 3/80*, conc. range: <1.0 µg/kg (1 sa), 1–5 µg/kg (2 sa, maximum: 3.2 µg/kg), sample year: 2009, country: Malaysia¹⁶²⁷, *dried chilli

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 18/50*, conc. range: 1–1.9 µg/kg (2 sa), 2–3.9 µg/kg (5 sa), 4–10 µg/kg (2 sa), 10–50 µg/kg (9 sa, maximum: 14.8 µg/kg), sample year: unknown, country: UK¹²², sa imported, *whole chilli

incidence: 9/14*, conc. range: 1–1.9 µg/kg (2 sa), 2–3.9 µg/kg (3 sa), 4–10 µg/kg (1 sa), 10–50 µg/kg (2 sa), >50 µg/kg (1 sa), sample year: unknown, country: UK¹²², port sa of chilli powder, imported

incidence: 12/106*, conc. range: ≤966 µg/kg, Ø conc.: 125 µg/kg, sample year: 1967–1969, country: Thailand¹⁶³, *chilli peppers

incidence: 13/33*, conc. range: 1–10 µg/kg (6 sa), >10 µg/kg (7 sa, maximum: 47.5 µg/kg), sample year: unknown, country: UK⁷²⁸, *chilli

incidence: 4/8*, conc. range: 1–10 µg/kg (2 sa), >10 µg/kg (2 sa, maximum: 14.8 µg/kg), sample year: unknown, country: UK⁷²⁸, cayenne pepper

incidence: ?/4*, conc. range: 1.1–5.4 µg/kg, sample year: unknown, country: UK⁷³², *chilli powder

incidence: ?/4*, conc. range: 1.0–58.5 µg/kg, sample year: unknown, country: UK⁷³², *chilli pickle

incidence: 4/6*, conc. range: 5.60–69.28 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *chilli powder

incidence: 5/5* **, conc. range: 2.7–76.8 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *chilli powder, **sa from Bazaar

incidence: 5/5* **, conc. range: 1.8–85.9 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *chilli powder, **sa from herbal shops

incidence: 5/5* **, conc. range: 2.1–4.9 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *chilli powder, **sa from supermarket

incidence: 10/30*, conc. range: 0.35–27.50 µg/kg, sample year: unknown, country: Ireland¹¹³⁹, *chilli powder

incidence: 2/8*, conc. range: 0.72–18.50 µg/kg, sample year: unknown, country: Ireland¹¹³⁹, *cayenne pepper

AFLATOXINS (TOTAL)

incidence: 9/9*, conc. range: 6.8–96.2 µg/kg, Ø conc.: 47.3 µg/kg, sample year: unknown, country: Portugal¹¹⁸⁵, sa from Pakistan, *ground chilli

incidence: 4/4*, conc. range: 0.1–6.6 µg/kg, Ø conc.: 2.15 µg/kg, sample year: unknown, country: Portugal¹¹⁸⁵, sa from Pakistan, *pod chilli sa

incidence: 14/35*, conc. range: ≤2.49 µg/kg, sample year: 2008, country: Spain¹²⁰⁶, *chilli

AFLATOXINS

incidence: 9/12*, conc. range: ≤30 µg/kg, Ø conc.: 10 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported, *chilli

incidence: 11/11*, conc. range: 1.9–65.7 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷, *chilli (9 sa co-contaminated with AFS, DON, OTA, T-2, and ZEA, 2 sa co-contaminated with AFS, OTA, and ZEA)

incidence: 29/42* **, conc. range: ≤95.9 µg/kg, sample year: 2009, country: Pakistan/Portugal/USA¹⁶¹⁸, sa from

Pakistan, *whole and ground chillies, **collected in summer season

incidence: 32/45* **, conc. range: ≤74.6 µg/kg, sample year: 2009/2010, country: Pakistan/Portugal/USA¹⁶¹⁸, sa from Pakistan, *whole and ground chillies, **collected in winter season

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/5*, conc.: 2.1 µg/kg, sample year: 2004, country: Hungary²⁵², *chilli

incidence: 2/32*, conc. range: 30–49 µg/kg (1 sa), 50–100 µg/kg (1 sa), sample year: unknown, country: India⁶⁸⁴, *dried chilli pods (grade 1)

incidence: 2/14*, conc. range: 10–29 µg/kg (1 sa), 50–100 µg/kg (1 sa), sample year: unknown, country: India⁶⁸⁴, *dried chilli pods (grade 2)

incidence: 8/23*, conc. range: 10–29 µg/kg (3 sa), 30–49 µg/kg (5 sa), sample year: unknown, country: India⁶⁸⁴, *dried chilli pods (grade 3)

incidence: 14/21*, conc. range: 10–29 µg/kg (8 sa), 30–49 µg/kg (4 sa), 50–100 µg/kg (1 sa), 120 µg/kg (1 sa), sample year: unknown, country: India⁶⁸⁴, * chilli powder from supermarkets

incidence: ?/4*, conc. range: 1.6–50.4 µg/kg, sample year: unknown, country: UK⁷³², *chilli powder

incidence: ?/4*, conc. range: 0.5–1.2 µg/kg, sample year: unknown, country: UK⁷³², *chilli pickle

incidence: 31/31*, conc. range: 0.2–152.2 µg/kg, country: UK⁸³⁹, sa from different countries, * chilli (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 8 sa co-contaminated with AFB₁, AFB₂ and OTA, 1 sa co-contaminated with AFB₁, AFG₁ and OTA, 1 sa co-contaminated with AFB₁, AFG₂ and OTA, 17 sa co-contaminated with AFB₁ and OTA, 2 sa contaminated solely with OTA)

incidence: 4/4*, conc. range: 2.4–16.5 µg/kg, Ø conc.: 6.98 µg/kg, country: UK⁸³⁹, sa from different countries, *cayenne pepper (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁, AFG₁ and OTA, 2 sa co-contaminated with AFB₁ and OTA)

incidence: 1/3*, conc.: 31 µg/kg, sample year: unknown, country: Belgium/Russia⁸⁷¹, sa from Belgium, Netherlands, and Russia, *chilli

incidence: 1/2*, conc.: 12 µg/kg, sample year: unknown, country: Belgium/Russia⁸⁷¹, sa from Belgium, Netherlands, and Russia, *cayenne

incidence: 2/6*, conc. range: 2.34–4.91 µg/kg, Ø conc.: 3.63 µg/kg, sample year: 2002, country: Qatar⁸⁷⁸, *chilli powder

incidence: 11/11, conc. range: 4.3–19.1 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷, *chilli (9 sa co-contaminated with AFS, DON, OTA, T-2, and ZEA, 2 sa co-contaminated with AFS, OTA, and ZEA)

incidence: 35/35*, conc. range: 0.62–44.6 µg/kg, sample year: 2008, country: Spain¹²⁰⁶, *chilli

incidence: 18/24*, conc. range: 0.46–53.04 µg/kg, Ø conc.: 16.44 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli flake (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁ and OTA, 3 sa contaminated solely with OTA)

incidence: 12/22*, conc. range: 0.78–98.24 µg/kg, Ø conc.: 24.65 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *red chilli powder (3 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 5 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFB₁ and OTA, 3 sa contaminated solely with OTA)

incidence: 65/80*, conc. range: <1.0 µg/kg (18 sa), 1–5 µg/kg (26 sa), 5–10 µg/kg (9 sa), >10 µg/kg (12 sa, maximum:

101.24 µg/kg), sample year: 2009, country: Malaysia¹⁶²⁷, *dried chilli

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/4*, conc.: 8 µg/kg, sample year: unknown, country: UK⁷³², *chilli powder

incidence: 2/11, conc. range: ≤0.3 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷ (2 sa co-contaminated with AFS, DON, OTA, T-2, and ZEA)

FUMONISINS (B₁, B₂)

incidence: 1/4*, conc.: 121 µg/kg, sample year: unknown, country: UK⁷³², *chilli pickle

HT-2 TOXIN

incidence: 1/4*, conc.: 24 µg/kg, sample year: unknown, country: UK⁷³², *chilli powder

DIACETOXYSCIRPENOL

incidence: ?/4*, conc. range: 47–81 µg/kg, sample year: unknown, country: UK⁷³², *chilli powder

T-2 TOXIN

incidence: 2/11, conc. range: ≤0.2 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷ (2 sa co-contaminated with AFS, DON, OTA, T-2, and ZEA)

ZEARALENONE

incidence: ?/4*, conc. range: 4.5–15.4 µg/kg, sample year: unknown, country: UK⁷³², *chilli powder

incidence: 1/9, conc.: pr, sample year: 1984–1986, country: India⁸⁰³

incidence: 4/11, conc. range: ≤114.3 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷ (2 sa co-contaminated with AFS, DON, OTA, T-2, and ZEA, 2 sa co-contaminated with AFS, OTA, and ZEA)

incidence: 15/35*, conc. range: ≤129 µg/kg, sample year: 2008, country: Spain¹²⁰⁶, *chilli

see also Spice (*Capsicum* spp.) and Spice (pepper)

Spice (cinnamon) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 0.98 µg/kg, sample year: 2000–2005, country: Italy¹³⁶⁶

Spice (coriander) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 2/2, conc. range: 1,500–1,700 µg/kg, Ø conc.: 1,600 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/15, Ø conc.: 8 µg/kg, sample year: unknown, country: Egypt¹⁴

incidence: 3/10*, conc. range: 19–37 µg/kg, Ø conc.: 25.7 µg/kg, sample year: unknown, country: India¹³⁰, *not stored

incidence: 1/9, conc.: 45.5 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa from Morocco, *approximate conc. (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 2/12, conc. range: ≤5 µg/kg (1 sa), 5.2 µg/kg (1 sa), sample year: unknown, country: Germany/Thailand⁷⁷⁵

incidence: 6?/9, conc. range: 25–230 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN B₂

incidence: 1/10*, conc.: 5 µg/kg, sample year: unknown, country: India¹³⁰, *not stored

incidence: 1/9, conc.: 16 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa from Morocco, *approximate conc. (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 6?/9, conc. range: 20–72 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN G₁

incidence: 2/15, Ø conc.: 2 µg/kg, sample year: unknown, country: Egypt¹⁴

incidence: 3/10*, conc. range: 3–4 µg/kg, Ø conc.: 3.7 µg/kg, sample year: unknown, country: India¹³⁰, *not stored

incidence: 6?/9, conc. range: 13–40 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN G₂

incidence: 6?/9, conc. range: 14–35 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/3, conc.: 0.7 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 1/9, conc. range: 2.90*–12.80** µg/kg, sample year: unknown, country: Ireland¹¹³⁹, *AFB₂, **AFB₁

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/9, conc.: 34 µg/kg, sample year: 1984–1986, country: India⁸⁰³

OCHRATOXIN A

incidence: 20/50, conc. range: 10–29 µg/kg (16 sa), 30–49 µg/kg (3 sa), 50–100 µg/kg (1 sa), sample year: unknown, country: India/UK/Belgium³³³, sa from India

incidence: 1/3, conc.: 4 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 1/9, conc.: pr, sample year: 1984–1986, country: India⁸⁰³

incidence: 1/5, conc.: 0.93 µg/kg, sample year: 2007, country: Japan⁹⁰⁰

incidence: 10/20, conc. range: 74–576 µg/kg, Ø conc.: 206 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/3, conc.: 21 µg/kg, sample year: unknown, country: UK⁷³²

ZEARALENONE

incidence: ?/3, conc. range: 3.6–6.7 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 1/9, conc.: pr, sample year:
1984–1986, country: India⁸⁰³

Spice (cumin) may contain the
following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 2/2, conc. range: 530–1,350 µg/
kg, Ø conc.: 940 µg/kg, sample year:
unknown, country: Germany⁷

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/7*, conc. range: 1.25–2.3 µg/
kg, Ø conc.: 1.85 µg/kg, sample year:
unknown, country: Portugal¹²⁵, *packaged
cumin

incidence: 2/20*, conc. range: 0.29–
0.96 µg/kg, Ø conc.: 0.625 µg/kg,
sample year: unknown, country: Egypt¹⁹⁹

incidence: 2/8, conc. range: 24–104 µg/kg,
Ø conc.: 64 µg/kg, sample year: 1984–
1986, country: India⁸⁰³ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
AFG₂, and CIT, 1 sa co-contaminated with
AFB₁, AFB₂, and AFG₁)

incidence: 8/14, conc. range: ≤0.08 µg/kg,
Ø conc.: 0.03 µg/kg, sample year:
unknown, country: Morocco⁸⁶⁶

incidence: 2/5*, conc. range: 20–30 µg/kg,
sample year: unknown, country: Egypt⁹⁹³,
*black cumin

incidence: 2/3*, conc. range: 1.89–4.64 µg/
kg, Ø conc.: 3.26 µg/kg, sample year:
unknown, country: Malaysia¹⁶⁰⁰, *cumin
powder

incidence: 4/19, conc. range: 0.32–0.88 µg/
kg, Ø conc.: 0.58 µg/kg, sample year:
2010/2011, country: Turkey¹⁶¹³

AFLATOXIN B₂

incidence: 2/8, conc. range: 12–78 µg/kg,
Ø conc.: 45 µg/kg, sample year: 1984–1986,
country: India⁸⁰³ (1 sa co-contaminated
with AFB₁, AFB₂, AFG₁, AFG₂, and CIT, 1
sa co-contaminated with AFB₁, AFB₂, and

AFG₁)

incidence: 2/19, conc. range: 0.07–0.10 µg/
kg, Ø conc.: 0.08 µg/kg, sample year:
2010/2011, country: Turkey¹⁶¹³

AFLATOXIN G₁

incidence: 2/8, conc. range: 8–45 µg/kg,
Ø conc.: 26.5 µg/kg, sample year:
1984–1986, country: India⁸⁰³ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
AFG₂, and CIT, 1 sa co-contaminated with
AFB₁, AFB₂, and AFG₁)

AFLATOXIN G₂

incidence: 1/8, conc.: 30 µg/kg, sample
year: 1984–1986, country: India⁸⁰³ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
AFG₂, and CIT)

AFLATOXINS (TOTAL)

incidence: 8/14, conc. range: ≤0.18 µg/
kg, Ø conc.: 0.05 µg/kg, sample year:
unknown, country: Morocco⁸⁶⁶

incidence: 28/28, conc. range: 4.55–
8.57 µg/kg, Ø conc.: 7.03 µg/kg, sample
year: unknown, country: Turkey¹⁶³⁶

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/8, conc.: 22 µg/kg, sample
year: 1984–1986, country: India⁸⁰³ (1 sa
co-contaminated with AFB₁, AFB₂, AFG₁,
AFG₂, and CIT)

OCHRATOXIN A

incidence: 1/5*, conc.: 35 µg/kg, sample
year: unknown, country: Egypt⁹⁹³, *black
cumin

incidence: 1/19, conc.: 0.63 µg/kg, sample
year: 2010/2011, country: Turkey¹⁶¹³

Spice (curcuma) may contain the
following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 2/2, conc. range: 60–100 µg/kg,
Ø conc.: 80 µg/kg, sample year: unknown,
country: Germany⁷

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 13/25, conc. range: 39–925 µg/kg, Ø conc.: 290 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹

Spice (curry) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 5/5, conc. range: 190–2,100 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus ToxinsAFLATOXIN B₁

incidence: 2/5*, conc. range: 1.75–2.5 µg/kg, Ø conc.: 2.13 µg/kg, sample year: unknown, country: Portugal¹²⁵, *packaged curry powder

incidence: 2/7*, conc. range: 3.64–4.12 µg/kg, Ø conc.: 3.88 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴, *curry powder

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 10/29, conc. range: 1–1.9 µg/kg (6 sa), 2–3.9 µg/kg (2 sa), 4–10 µg/kg (2 sa, maximum: 5.2 µg/kg), sample year: unknown, country: UK¹²², sa imported

incidence: 10/29*, conc. range: 1–10 µg/kg (10 sa, maximum: 5.2 µg/kg), sample year: unknown, country: UK⁷²⁸, *curry powder

incidence: ?/3*, conc. range: 0.8–61.2 µg/kg, sample year: unknown, country: UK⁷³², *hot curry powder

incidence: 1/3*, conc.: 0.4 µg/kg, sample year: unknown, country: UK⁷³², *mild curry powder

incidence: 3/20*, conc. range: 0.50–9.10 µg/kg, sample year: unknown, country: Ireland¹¹³⁹, *curry powder

incidence: 2/20, conc. range: 0.13–0.46 µg/kg, Ø conc.: 0.295 µg/kg, sample year: 2006, country: Korea¹³⁷⁷

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: ?/3*, conc. range: 2.3–21.3 µg/kg, sample year: unknown, country: UK⁷³², *hot curry powder

incidence: ?/3*, conc. range: 1.8–9.4 µg/kg, sample year: unknown, country: UK⁷³², *mild curry powder

incidence: ?/3*, conc. range: 1.2–5.4 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

incidence: 3/3*, conc. range: 5.0–9.9 µg/kg (1 sa), >25 µg/kg (2 sa, maximum: 33 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa from Austria, *curry powder

Fusarium ToxinsFUMONISINS (B₁, B₂)

incidence: ?/3*, conc. range: 15–16 µg/kg, sample year: unknown, country: UK⁷³², *hot curry powder

incidence: 1/3*, conc.: 21 µg/kg, sample year: unknown, country: UK⁷³², *mild curry powder

incidence: 1/3*, conc.: 230 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/3*, conc.: 7 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

HT-2 TOXIN

incidence: 1/3*, conc.: 17 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

NEOSOLANIOL

incidence: 1/3* **, conc.: 9 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

NIVALENOL

incidence: ?/3*, conc. range: 15–50 µg/kg, sample year: unknown, country: UK⁷³², *hot curry powder

incidence: ?/3*, conc. range: 9–67 µg/kg, sample year: unknown, country: UK⁷³², *mild curry powder

incidence: 1/3* **, conc.: 14 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

DIACETOXYSCIRPENOL

incidence: 1/3*, conc.: 25 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

T-2 TOXIN

incidence: 1/3*, conc.: 13 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

ZEARALENONE

incidence: ?/3*, conc. range: 1.2–10.8 µg/kg, sample year: unknown, country: UK⁷³², *hot curry powder

incidence: 1/3*, conc.: 5.2 µg/kg, sample year: unknown, country: UK⁷³², *dry curry mixes

Spice (fennel) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 6/9, conc. range: 30–275 µg/kg, sample year: 1984–1986, country: India⁸⁰³

incidence: 2/6, conc. range: 80–160 µg/kg, Ø conc.: 120 µg/kg, sample year: unknown, country: Egypt⁹⁹³

AFLATOXIN B₂

incidence: 6/9, conc. range: 28–173 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN G₁

incidence: 6/9, conc. range: 15–76 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN G₂

incidence: 6/9, conc. range: 9–69 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/3, conc.: 1.2 µg/kg, sample year: unknown, country: UK⁷³²

STERIGMATOCYSTIN

incidence: 1/9, conc.: 142 µg/kg, sample year: 1984–1986, country: India⁸⁰³

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 2/9, conc. range: 28–59 µg/kg, Ø conc.: 43.5 µg/kg, sample year: 1984–1986, country: India⁸⁰³

OCHRATOXIN A

incidence: 1/9, conc.: pr, sample year: 1984–1986, country: India⁸⁰³

incidence: 1/6, conc.: 80 µg/kg, sample year: unknown, country: Egypt⁹⁹³

Fusarium Toxins

ZEARALENONE

incidence: 1/3, conc.: 7 µg/kg, sample year: unknown, country: UK⁷³²

Spice (fenugreek) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/3*, conc.: 2.0 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *fresh sa

incidence: 2/3*, conc. range: 2.0–4.3 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa (1 sa co-contaminated with AFB₁, AFB₂ and AFG₁, 1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN B₂

incidence: 2/3*, conc. range: 2.5–3.0 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa (1 sa co-contaminated with AFB₁, AFB₂ and AFG₁, 1 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 1/3*, conc.: 1.8 µg/kg, sample year: unknown, country: Egypt/USA⁶², sa from Egypt, *stored sa (1 sa co-contaminated with AFB₁, AFB₂ and AFG₁)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/2, conc.: 2.5 µg/kg, sample year: unknown, country: UK⁷²⁸

see also Herbs and Spices

Spice (garlic) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 1/6, conc.: 12 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXIN B₂

incidence: 1/6, conc.: 15 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXIN G₁

incidence: 1/6, conc.: 10 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: ?/4*, conc. range: 0.2–0.6 µg/kg, sample year: unknown, country: UK⁷³², *garlic pickle

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: ?/4*, conc.: 0.9–2.5 µg/kg, sample year: unknown, country: UK⁷³², *garlic pickle

incidence: 2/12, conc. range: 1–6 µg/kg, Ø conc.: 3.5 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet (1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA, 1 sa contaminated solely with OTA)

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 1/4, conc.: 14 µg/kg, sample year: unknown, country: UK⁷³²

FUMONISIN B₁

incidence: 1/12, conc.: 10 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet (1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA)

incidence: 2/3*, conc. range: ~46–440 µg/kg, sample year: unknown, country: Netherlands¹⁴⁷⁰, *garlic powder

FUMONISIN B₂

incidence: 1/12, conc.: 8 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet (1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA)

FUMONISIN B₃

incidence: 1/12, conc.: 3 µg/kg, sample year: unknown, country: Belgium¹⁴⁵⁷, sa in part from internet (1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA)

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 1/4, conc.: 5 µg/kg, sample year: unknown, country: UK⁷³²

NIVALENOL

incidence: 1/4, conc.: 21 µg/kg, sample year: unknown, country: UK⁷³²

ZEARALENONE

incidence: 1/4*, conc.: 3.8 µg/kg, sample year: unknown, country: UK⁷³², *garlic pickle

see also Herbs and Spices

Spice (garlic/onions) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXINS (B₁, B₂, G₁, G₂)**

incidence: 2/58, conc. range: ≤60 µg/kg ?, Ø conc.: 67 µg/kg ?, sample year: 1967–1969, country: Thailand¹⁶³

Spice (ginger) may contain the following mycotoxins:

Alternaria Toxins**TENUAZONIC ACID**

incidence: 2/2, conc. range: 50–70 µg/kg, Ø conc.: 60 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/5, conc. range: 1.4–6.5 µg/kg, Ø conc.: 4 µg/kg, sample year: unknown, country: USA¹¹

incidence: 8/15, conc.: tr–25 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 4 sa co-contamination with AFB₁ and AFB₂, 1 sa contamination solely with AFB₁)

incidence: 1/12, conc.: ≤5 µg/kg, sample year: unknown, country: Germany⁷⁷⁵

incidence: 10/12, conc. range: ≤3.50 µg/kg, Ø conc.: 0.63 µg/kg, sample year: unknown, country: Morocco⁸⁶⁶

incidence: 2/5, conc. range: 10 µg/kg, sample year: unknown, country: Egypt⁹⁹³

AFLATOXIN B₂

incidence: 2/5, conc. range: 0.2 µg/kg, Ø conc.: 0.2 µg/kg, sample year: unknown, country: USA¹¹

incidence: 7/15, conc.: tr–15 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 4 sa co-contamination with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 1/5, conc.: 2.5 µg/kg, sample year: unknown, country: USA¹¹

incidence: 3/15, conc.: tr–15 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXIN G₂

incidence: 1/5, conc.: 0.2 µg/kg, sample year: unknown, country: USA¹¹

incidence: 2/15, conc.: tr–4 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 3/8, conc. range: 1–10 µg/kg (3 sa, maximum: 8.4 µg/kg), sample year: unknown, country: UK⁷²⁸

incidence: ?/4, conc. range: 4.2–13.5 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 1/7*, conc.: 0.18 µg/kg, sample year: 2006, country: Korea¹³⁷⁷, *ginger product

AFLATOXINS (TOTAL)

incidence: 1/3, conc.: 2 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported

incidence: 10/12, conc. range: ≤9.10 µg/kg, Ø conc.: 1.47 µg/kg, sample year: unknown, country: Morocco⁸⁶⁶

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 2/25, conc. range: 10–29 µg/kg (1 sa), 50–100 µg/kg (1 sa), sample year: unknown, country: India/UK/Belgium³³³, sa from India

incidence: ?/4, conc. range: 2.1–7.5 µg/kg, sample year: unknown, country: UK⁷³²

incidence: 1/5, conc.: 2.5 µg/kg, sample year: 2005/2006, country: Belgium/Russia/Hungary¹⁰⁰⁷, sa from Belgium, Netherlands, and Russia

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/4, conc.: 9 µg/kg, sample year: unknown, country: UK⁷³²

NEOSOLANIOL

incidence: 1/4, conc.: 23 µg/kg, sample year: unknown, country: UK⁷³²

NIVALENOL

incidence: 1/4, conc.: 34 µg/kg, sample year: unknown, country: UK⁷³²

T-2 TOXIN

incidence: 1/4, conc.: 18 µg/kg, sample year: unknown, country: UK⁷³²

see also Herbs and Spices

Spice (Indian cassia) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/6, conc.: 13 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN B₂

incidence: 1/6, conc.: 11 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₁

incidence: 1/6, conc.: 8 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 1/6, conc.: 4 µg/kg, sample year: 1984–1986, country: India⁸⁰³ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

Spice (majoran) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/13, conc.: 28 µg/kg, sample year: 1994, country: EU¹⁰³⁴, sa from Austria

Spice (mustard) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 44/100, conc. range: tr–750 µg/kg, sample year: 1984/1985, country: India¹⁵⁴

incidence: 17/41, conc. range: <20 µg/kg (4 sa), 21–100 µg/kg (8 sa), 101–500 µg/kg (4 sa), 780 µg/kg (1 sa), sample year: 1987, country: India³⁹⁸

incidence: 40/273, conc. range: 8–640 µg/kg, sample year: 1987, country: India⁴⁷²

AFLATOXIN B₂

incidence: 9/100, conc. range: pr, sample year: 1984/1985, country: India¹⁵⁴

AFLATOXIN G₁

incidence: 3/100, conc. range: pr, sample year: 1984/1985, country: India¹⁵⁴

AFLATOXIN G₂

incidence: 1/100, conc.: pr, sample year: 1984/1985, country: India¹⁵⁴

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/4, conc. range: ≤0.34 µg/kg, sample year: unknown, country: Germany⁶³⁹, sa from Germany and imported?

Spice (nutmeg) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3*/13, conc. range: 5–15 µg/kg, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 84?/108, conc. range: 0.2–13.4 µg/kg, Ø conc.: 3.6 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 8/10*, conc. range: 1.25–58.0 µg/kg, Ø conc.: 20.85 µg/kg, sample year: unknown, country: Portugal¹²⁵, *packaged nutmeg

incidence: 4/13, conc. range: 5–37.5 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (3 sa co-contaminated with AFB₁ and AFB₂, 1 sa contaminated solely with AFB₁)

incidence: 3?/5, conc. range: 2.5–5.5 µg/kg, sample year: unknown, country: USA¹⁸³, sa from India, Indonesia, and Malaysia

incidence: 25?/56, conc. range: 0.2–60.3 µg/kg, year: unknown, country: Japan¹⁸⁴

incidence: 30/32, conc. range: 1.0–23.2 µg/kg, Ø conc.: 12.5 µg/kg, sample year: unknown, country: Netherlands³⁰⁵

incidence: 1/9*, conc.: 0.09 µg/kg, sample year: 1989/1990, country: France³⁹⁷, *whole nutmeg

incidence: 5/5*, conc. range: 0.05–0.1 µg/kg (1 sa), 5.1–10 µg/kg (1 sa), 11–40 µg/kg (1 sa), 41 + 58 µg/kg (2 sa), Ø conc.: 23.8 µg/kg, sample year: 1989/1990, country: France³⁹⁷, *powdered nutmeg

incidence: 11/28, conc. range: ≤5 µg/kg (8 sa), >5 µg/kg (3 sa, maximum: 7.7 µg/kg), sample year: unknown, country: Germany/Thailand⁷⁷⁵

incidence: 2/3, conc. range: 0.4–0.6 µg/kg, Ø conc.: 0.5 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶

incidence: 1/3, conc.: 2.27 µg/kg, sample year: 2000–2005, country: Italy¹³⁶⁶ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 25/25, conc. range: 1.0–378 µg/kg, Ø conc.: 52.3 µg/kg, sample year: unknown, country: Japan¹⁴⁸⁰, sa from Indonesia (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 8 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂, 5 sa contaminated solely with AFB₁)

incidence: 1/1*, conc.: 1.77 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *nutmeg powder (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 4/13, conc. range: 0.73–16.31 µg/kg, Ø conc.: 4.87 µg/kg, sample year: unknown, country: China¹⁵⁹⁸ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁ and AFB₂, 1 sa contaminated solely with AFB₁)

AFLATOXIN B₂

incidence: 84?/108, conc. range: ≤2.5 µg/kg, Ø conc.: 0.5 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 3/13, conc. range: tr–15 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (3 sa co-contaminated with AFB₁ and AFB₂)

incidence: 3?/5, conc. range: 0.75–1.1 µg/kg, sample year: unknown, country: USA¹⁸³, sa from India, Indonesia, and Malaysia

incidence: 25?/56, conc. range: 0.1–6.5 µg/kg, sample year: unknown, country: Japan¹⁸⁴

incidence: 1/3, conc.: 0.2 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶

incidence: 1/3, conc.: 0.47 µg/kg, sample year: 2000–2005, country: Italy¹³⁶⁶ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 20/25, conc. range: 0.2–43 µg/kg, Ø conc.: 5.4 µg/kg, sample year: unknown, country: Japan¹⁴⁸⁰, sa from Indonesia (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 8 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 10 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/1*, conc.: 0.40 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *nutmeg powder (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 3/13, conc. range: 0.10–1.55 µg/kg, Ø conc.: 0.61 µg/kg, sample year: unknown, country: China¹⁵⁹⁸ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁ and AFB₂)

AFLATOXIN G₁

incidence: 84?/108, conc. range: 0–2.8 µg/kg, Ø conc.: <0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 25?/56, conc. range: 0.4–15.8 µg/kg, year: unknown, country: Japan¹⁸⁴

incidence: 1/3, conc.: 0.2 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶

incidence: 10/25, conc. range: 0.6–78 µg/kg, Ø conc.: 14.4 µg/kg, sample year:

unknown, country: Japan¹⁴⁸⁰, sa from Indonesia (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 8 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 1/1*, conc.: 0.63 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *nutmeg powder (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

AFLATOXIN G₂

incidence: 84/108, conc. range: ≤0.4 µg/kg, Ø conc.: <0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

incidence: 1/56, conc.: 0.3 µg/kg, sample year: unknown, country: Japan¹⁸⁴

incidence: 2/25, conc. range: 0.4–4.4 µg/kg, Ø conc.: 2.4 µg/kg, sample year: unknown, country: Japan¹⁴⁸⁰, sa from

Indonesia (2 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

incidence: 1/13, conc.: 0.29 µg/kg, sample year: unknown, country: China¹⁵⁹⁸ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 30/32, conc. range: 2.7–36.5 µg/kg, Ø conc.: 15.8 µg/kg, sample year: unknown, country: Netherlands³⁰⁵

AFLATOXINS

incidence: 5/5, conc. range: ≤20 µg/kg, Ø conc.: 13 µg/kg, sample year: 1986, country: USA¹⁹⁷, sa imported

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 4/8, conc. range: 1.1–2.1 µg/kg, Ø conc.: 1.5 µg/kg, sample year: 2005/2006, country: Belgium/Russia/Hungary¹⁰⁰⁷, sa from Belgium, Netherlands, and Russia

incidence: 1/13, conc.: <LOQ, sample year: unknown, country: China¹⁵⁹⁸

Spice (onion) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 3/3*, conc. range: ~5–135 µg/kg, sample year: unknown, country: Netherlands¹⁴⁷⁰, *onion powder

Spice (paprika) may contain the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 9/9, conc. range: 880–37,300 µg/kg, sample year: unknown, country: Germany⁷

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/12*, conc. range: 0.2–1.3 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *paprika powder?

incidence: 8/12, conc. range: 1.25–17.75 µg/kg, Ø conc.: 6.98 µg/kg, sample year: unknown, country: Portugal¹²⁵, *packaged paprika

incidence: 7/15, conc. range: 2.5–14.5 µg/kg, Ø conc.: 7.6 µg/kg, sample year: unknown, country: Germany⁶⁰², *different kinds of paprika powder

incidence: 25/25, conc. range: 0.2–3.4 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁ and OTA, 9 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFG₁ and OTA, 1 sa co-contaminated with AFB₁, AFG₂ and OTA, 1 sa co-contaminated with AFB₁ and OTA)

incidence: 14/14*, conc. range: ≤5.40 µg/kg, Ø conc.: 2.88 µg/kg, sample year:

unknown, country: Morocco⁸⁶⁶, *red paprika

incidence: 10/10*, conc. range: 8.2–116.4 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from Bazaar

incidence: 10/10*, conc. range: 1.7–59.3 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from herbal shops

incidence: 7/10*, conc. range: 0.5–1.8 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from supermarket

incidence: 19/21*, conc. range: 0.7–3.8 µg/kg, Ø conc.: 1.1 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹¹⁴⁷, sa from Spain, *red paprika (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁ and AFG₂, 5 sa co-contaminated with AFB₁ and OTA, 4 sa contaminated solely with AFB₁)

incidence: 58/70, conc. range: LOD–5.0 µg/kg (45 sa), 5.0–10.0 µg/kg (13 sa, maximum: 7.3 µg/kg), Ø conc.: 3.4 µg/kg, sample year: 2006, country: Brazil¹⁴¹⁵

incidence: 1/3*, conc.: 0.6 µg/kg, sample year: unknown, country: Netherlands¹⁴⁷⁰, *paprika powder

incidence: 1/1*, conc.: 1.76 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *paprika powder (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 19/21*, conc. range: 0.7–3.8 µg/kg, Ø conc.: 1.1 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹⁶²⁴, sa from Spain, *red paprika powder (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa

co-contaminated with AFB₁, AFB₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁ and AFG₂, 5 sa co-contaminated with AFB₁ and OTA, 4 sa contaminated solely with AFB₁)

AFLATOXIN B₂

incidence: 5/12*, conc. range: ≤0.2 µg/kg, Ø conc.: <0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *paprika powder?

incidence: 7/15, conc. range: 0.1–1.7 µg/kg, Ø conc.: 0.81 µg/kg, sample year: unknown, country: Germany⁶⁰², *different kinds of paprika powder

incidence: 3/25, conc. range: 0.2–0.3 µg/kg, Ø conc.: 0.23 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁ and OTA)

incidence: 7/21*, conc. range: 0.6–0.7 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹¹⁴⁷, sa from Spain, *red paprika (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and OTA)

incidence: 9/70, conc. range: LOD–5.0 µg/kg (9 sa, maximum: 0.5 µg/kg), Ø conc.: 1.0 µg/kg, sample year: 2006, country: Brazil¹⁴¹⁵

incidence: 7/21*, conc. range: 0.6–0.7 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹⁶²⁴, sa from Spain, *red paprika powder (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁, AFB₂, and OTA)

AFLATOXIN G₁

incidence: 23/25, conc. range: 0.2–2.2 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁ and OTA, 9 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFG₁ and OTA)

incidence: 2/21*, conc. range: 0.9–1.1 µg/kg, Ø conc.: 1.0 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹¹⁴⁷, sa from Spain, *red paprika (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA)

incidence: 15/70, conc. range: LOD–5.0 µg/kg (15 sa, maximum: 1.6 µg/kg), Ø conc.: 0.4 µg/kg, sample year: 2006, country: Brazil¹⁴¹⁵

incidence: 1/1*, conc.: 1.56 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *paprika powder (1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 2/21*, conc. range: 0.9–1.1 µg/kg, Ø conc.: 1.0 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹⁶²⁴, sa from Spain, *red paprika powder (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA)

AFLATOXIN G₂

incidence: 11/25, conc. range: 0.2–0.7 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 9 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFG₂ and OTA)

incidence: 8/21*, conc. range: 0.5–0.8 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹¹⁴⁷, sa from Spain, *red paprika (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 1 sa

co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁ and AFG₂, 1 sa co-contaminated with AFG₂ and OTA)

incidence: 8/21*, conc. range: 0.5–0.8 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹⁶²⁴, sa from Spain, *red paprika powder (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 2 sa co-contaminated with AFB₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁ and AFG₂, 1 sa co-contaminated with AFG₂ and OTA)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/9*, conc.: 1.8 µg/kg, sample year: unknown, country: UK⁷²⁸, *paprika powder

incidence: 10/10*, conc. range: 9.7–124.6 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from Bazaar

incidence: 10/10*, conc. range: 1.8–62.4 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from herbal shops

incidence: 7/10*, conc. range: 0.5–1.8 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from supermarket

incidence: 2/10, conc. range: 0.40–6.40 µg/kg, sample year: unknown, country: Ireland¹¹³⁹

AFLATOXINS (TOTAL)

incidence: 14/14*, conc. range: ≤9.68 µg/kg, Ø conc.: 5.23 µg/kg, year: unknown, country: Morocco⁸⁶⁶, *red paprika

incidence: 38/64, conc. range: ≤7.25 µg/kg, sample year: 2008, country: Spain¹²⁰⁶

incidence: 19/23*, conc. range: 0.38–14.71 µg/kg, sample year: 2007, country: Turkey¹⁵⁵¹, *destined for export (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 2 sa co-contaminated with AFB₁ and AFB₂, 16 sa contaminated solely with AFB₁)

AFLATOXINS

incidence: 17/17, conc. range: 1.8–50.4 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷ (15 sa co-contaminated with AFS, DON, OTA, and ZEA, 2 sa co-contaminated with AFS, OTA, and ZEA)
 incidence: 4/4*, conc. range: 22.3–83.7 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷, *smoked paprika (4 sa co-contaminated with OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 25/25, conc. range: 0.3–47.7 µg/kg, sample year: unknown, country: UK⁸³⁹, sa from different countries (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, and AFG₁ and OTA, 9 sa co-contaminated with AFB₁, AFG₁, AFG₂, and OTA, 11 sa co-contaminated with AFB₁, AFG₁ and OTA, 1 sa co-contaminated with AFB₁, AFG₂ and OTA, 1 sa co-contaminated with AFB₁ and OTA)

incidence: 13/18, conc. range: LOD/LOQ–4.9 µg/kg (4 sa), 5.0–9.9 µg/kg (3 sa), 10.0–24.9 µg/kg (5 sa), 38 µg/kg (1 sa), sample year: 1994, country: EU¹⁰³⁴, sa from Austria

incidence: 14/21*, conc. range: 0.7–73.8 µg/kg, Ø conc.: 11.9 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹¹⁴⁷, sa from Spain, *red paprika (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₂, and OTA, 5 sa co-contaminated with AFB₁ and OTA, 1 sa co-contaminated with AFG₂ and OTA)

incidence: 17/17, conc. range: 4.3–118.7 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷ (15 sa co-contaminated with AFS, DON, OTA, and ZEA, 2 sa co-contaminated with AFS, OTA, and ZEA)

incidence: 4/4*, conc. range: 9.0–474.7 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷, *smoked paprika (4 sa co-contaminated with AFB₁)

incidence: 11/68* **, conc. range: ≤34.96 µg/kg, sample year: 2008, country: Korea¹¹⁶⁹, *red paprika, **post-harvest- and processing stages

incidence: 31/83* **, conc. range: ≤33.59 µg/kg, sample year: 2008, country: Korea¹¹⁶⁹, *red paprika, **distribution stages

incidence: 63/64, conc. range: ≤281 µg/kg, sample year: 2008, country: Spain¹²⁰⁶

incidence: 60/70, conc. range: LOD–5.0 µg/kg (31 sa), 5.0–10.0 µg/kg (20 sa), ≥10.0 µg/kg (9 sa, maximum: 97.2 µg/kg), Ø conc.: 7.0 µg/kg, sample year: 2006, country: Brazil¹⁴¹⁵

incidence: 3/3*, conc. range: 2.1–8.0 µg/kg, Ø conc.: 4.5 µg/kg, sample year: unknown, country: Netherlands¹⁴⁷⁰, *paprika powder

incidence: 16/23*, conc. range: 31–528 µg/kg, Ø conc.: 203 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹, *red paprika

incidence: 14/21*, conc. range: 0.7–73.8 µg/kg, Ø conc.: 11.9 µg/kg, sample year: 2004–2007, country: Spain/Nicaragua¹⁶²⁴, sa from Spain, *red paprika powder (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, AFG₂, and OTA, 2 sa co-contaminated with AFB₁, AFB₂, and OTA, 2 sa co-contaminated with AFB₁, AFG₂, and OTA, 5 sa co-contaminated with AFB₁ and OTA, 1 sa co-contaminated with AFG₂ and OTA)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/17, conc.: 0.1 µg/kg, sample year: 2008–2010, country: Spain¹¹⁶⁷ (1 sa co-contaminated with AFS, DON, OTA, and ZEA)

incidence: 4/32*, conc. range: ≤ 269 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 125 $\mu\text{g}/\text{kg}$, sample year: 2008–
 2010, country: Spain¹⁶³⁷, *paprika and
 chilli pepper

HT-2 TOXIN

incidence: 3/32*, conc. range: ≤ 199 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 82 $\mu\text{g}/\text{kg}$, sample year: 2008–2010,
 country: Spain¹⁶³⁷, *paprika and chilli
 pepper

T-2 TOXIN

incidence: 2/32*, conc. range: 9–11 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 2008–2010,
 country: Spain¹⁶³⁷, *paprika and chilli
 pepper

ZEARALENONE

incidence: 3/17, conc. range: ≤ 78.2 $\mu\text{g}/\text{kg}$,
 sample year: 2008–2010, country: Spain¹¹⁶⁷
 (1 sa co-contaminated with AFS, DON,
 OTA, and ZEA, 2 sa co-contaminated with
 AFS, OTA, and ZEA)

incidence: 25/64, conc. range: ≤ 131 $\mu\text{g}/\text{kg}$,
 sample year: 2008, country: Spain¹²⁰⁶

see also Spice (*Capsicum* spp.) and Spice
 (cayenne pepper, chilli)

Spice (pepper) may contain the
 following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/1, conc.: 640 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: Italy³⁴⁰ (1 sa co-
 contaminated with AME, AOH, and TA)

incidence: 6/20*, conc. range: < 6.6 –
 101 $\mu\text{g}/\text{kg}$, sample year: unknown,
 country: Belgium¹²⁸², *sweet pepper

ALTERNARIOL METHYL ETHER

incidence: 1/1, conc.: 49 $\mu\text{g}/\text{kg}$,
 sample year: unknown, country:
 Italy³⁴⁰ (1 sa co-contaminated with AME,
 AOH, and TA)

TENUAZONIC ACID

incidence: 6/6, conc. range: 60–1,000 $\mu\text{g}/$
 kg , sample year: unknown, country:
 Germany⁷

incidence: 1/1, conc.: 54 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: Italy³⁴⁰
 (1 sa co-contaminated with AME, AOH,
 and TA)

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/15*, conc. range: 0.2–32.9 $\mu\text{g}/$
 kg , \emptyset conc.: 8.1 $\mu\text{g}/\text{kg}$, sample year:
 unknown, country: USA¹¹, *red pepper

incidence: 1/7*, conc.: 0.3 $\mu\text{g}/\text{kg}$, sample
 year: unknown, country: USA¹¹, *white
 pepper

incidence: 4/15*, \emptyset conc.: 22 $\mu\text{g}/\text{kg}$,
 sample year: unknown, country: Egypt¹⁴,
 *white pepper

incidence: 4/15*, \emptyset conc.: 35 $\mu\text{g}/\text{kg}$,
 sample year: unknown, country: Egypt¹⁴,
 *black pepper

incidence: 8/60*, conc. range: 250–525 $\mu\text{g}/$
 kg , \emptyset conc.: 425.7 $\mu\text{g}/\text{kg}$, sample year:
 unknown, country: Ethiopia⁵³, *ground
 red pepper

incidence: 2/10*, conc. range: 2.6–9.1 $\mu\text{g}/$
 kg , \emptyset conc.: 5.9 $\mu\text{g}/\text{kg}$, sample year: 1986–
 1990, country: Japan⁹⁹, *red pepper

incidence: 11/84*, conc. range: 0.1–
 1.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.8 $\mu\text{g}/\text{kg}$, sample year:
 1986–1990, country: Japan⁹⁹, *white
 pepper

incidence: 3/7*, conc. range: 1.25–5.0 $\mu\text{g}/$
 kg , \emptyset conc.: 3.67 $\mu\text{g}/\text{kg}$, sample year:
 unknown, country: Portugal¹²⁵, *packaged
 white pepper

incidence: 7/24*, conc. range: 0.6–2.3 $\mu\text{g}/$
 kg , sample year: unknown, country:
 Japan¹⁸⁴, *white pepper

incidence: 18/70*, conc. range: 0.14–
 15.7 $\mu\text{g}/\text{kg}$, sample year: 2004, country:
 Hungary²⁵², *red pepper

incidence: 1/6*, conc.: 0.46 $\mu\text{g}/\text{kg}$, sample
 year: 2004, country: Hungary²⁵², *black
 pepper

incidence: 1/1*, conc.: 2.0 $\mu\text{g}/\text{kg}$, sample
 year: 1985, country: Japan³⁴⁶, sa imported,
 *red pepper

incidence: 1/1*, conc.: 10.8 µg/kg, sample year: 1985, country: Japan³⁴⁶, sa imported, *black pepper

incidence: 3/6* **, conc. range: 2.5–40 µg/kg**, Ø conc.: 20.8 µg/kg**, country: Turkey³⁴⁷, sa from unknown origin, *red pepper, **sa from markets, ***TLC

incidence: 10/15* **, conc. range: 1.7–100 µg/kg**, Ø conc.: 36.29 µg/kg**, country: Turkey³⁴⁷, sa from India, Turkey, and unknown origin, *red pepper, **sa from spice-sellers, ***TLC and HPLC (3 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 2 sa co-contaminated with AFB₁ and AFB₂, 5 sa contaminated solely with AFB₁)

incidence: 7/11* **, conc. range: 2.4–60 µg/kg**, Ø conc.: 21.7 µg/kg**, country: Turkey³⁴⁷, sa from Turkey and unknown origin, *red pepper, **sa from street bazaar, ***TLC and HPLC (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂, 4 sa contaminated solely with AFB₁)

incidence: 5/8*, conc. range: 17–190 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *black pepper

incidence: 1/2*, conc.: 0.8 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶, *red pepper

incidence: 1/13*, conc.: 0.6 µg/kg, sample year: 1988–1992, country: Japan⁸⁵⁶, *white pepper

incidence: 7/15*, conc. range: ≤0.30 µg/kg, Ø conc.: 0.09 µg/kg, sample year: unknown, country: Morocco⁸⁶⁶, *black pepper

incidence: 17/26*, conc. range: 0.6–56 µg/kg, Ø conc.: 17.5 µg/kg, sample year: unknown, country: Turkey⁸⁶⁸, sa from Turkey and unknown origin, *red pepper

incidence: 72/75*, conc. range: 0.025–5 µg/kg (61 sa), >5 µg/kg (11 sa, maximum: 24.7 µg/kg), Ø conc.: 1.9 µg/kg, sample year: unknown, country: Turkey⁹⁰¹, *deep-ground pepper

incidence: 15/30*, conc. range: 0.2–32.3 µg/kg, Ø conc.: 13.4 µg/kg, sample year: unknown, country: Turkey⁹¹⁵, sa from bazaar and market, *red-scaled pepper

incidence: 7/30*, conc. range: 0.2–10.7 µg/kg, Ø conc.: 4.7 µg/kg, sample year: unknown, country: Turkey⁹¹⁵, sa from bazaar and market, *red pepper

incidence: 2/24*, conc. range: 8.6–9.5 µg/kg, Ø conc.: 9.05 µg/kg, sample year: unknown, country: Turkey⁹¹⁵, sa from bazaar and market, *black pepper

incidence: 68/100*, conc. range: 0.025–5 µg/kg (50 sa), >5 µg/kg (18 sa, maximum: 40.9 µg/kg), sample year: 2004, country: Turkey¹⁰⁴³, *powdered red pepper

incidence: 2/5* **, conc. range: 0.9–1.2 µg/kg, sample year: unknown, country: Turkey¹⁰⁶, *sa from Bazaar, **ground black pepper

incidence: 1/5* **, conc.: 0.8 µg/kg, sample year: unknown, country: Turkey¹⁰⁶, *sa from herbal shops, **ground black pepper

incidence: 1/5* **, conc. range: 0.3 µg/kg, sample year: unknown, country: Turkey¹⁰⁶, *sa from supermarket, **ground black pepper

incidence: 1/7*, conc.: 0.08 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴, *pepper powder

incidence: 4/7*, conc. range: 0.08–0.63 µg/kg, Ø conc.: 0.40 µg/kg, sample year: 2004/2005, country: Korea¹³⁰⁴, *hot pepper powder

incidence: 5/11*, conc. range: 0.57–26.90 µg/kg, Ø conc.: 7.16 µg/kg, sample year: 2000–2005, country: Italy¹³⁶⁶, *hot peper, whole/smashed (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂, 3 sa contaminated solely with AFB₁)

incidence: 1/1*, conc.: 1.00 µg/kg, sample year: unknown, country: Germany¹⁵¹⁴, *black pepper powder

incidence: 4/4*, conc. range: 0.65–2.1 µg/kg, Ø conc.: 1.20 µg/kg, sample year: unknown, country: Malaysia¹⁶⁰⁰, *black pepper

incidence: 7/23*, conc. range: 0.13–0.42 µg/kg, Ø conc.: 0.20 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *black pepper powder (1 sa co-contaminated with AFB₁ and OTA; no further information available)

AFLATOXIN B₂

incidence: 8/15*, conc. range: 0.1–1.5 µg/kg, Ø conc.: 0.38 µg/kg, sample year: unknown, country: USA¹¹, *red pepper

incidence: 2/10*, conc. range: ≤0.4 µg/kg, Ø conc.: 0.2 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *red pepper

incidence: 11/84*, conc. range: 0–0.3 µg/kg, Ø conc.: <0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *white pepper

incidence: 7/24*, conc. range: 0.1–0.2 µg/kg, sample year: unknown, country: Japan¹⁸⁴, *white pepper

incidence: 10/70*, conc. range: 0.22–1.25 µg/kg, sample year: 2004, country: Hungary²⁵², *red pepper

incidence: 5/15* **, conc. range: 3.2–40 µg/kg***, Ø conc.: 12.4 µg/kg***, country: Turkey³⁴⁷, sa from India, Turkey, and unknown origin, *red pepper, **sa from spice-sellers, ***TLC and HPLC (3 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 2 sa co-contaminated with AFB₁ and AFB₂)

incidence: 3/11* **, conc. range: 3.4–7.8 µg/kg***, Ø conc.: 5.06 µg/kg***, country: Turkey³⁴⁷, sa from Turkey and unknown origin, *red pepper, **sa from street bazaar, ***TLC and HPLC (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 1 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 5/8*, conc. range: 12–150 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *black pepper

incidence: 5/26*, conc. range: 0.4–2.3 µg/kg, Ø conc.: 1.46 µg/kg, sample year: unknown, country: Turkey⁸⁶⁸, sa from Turkey and unknown origin, *red pepper

incidence: 2/11*, conc. range: 0.81–1.20 µg/kg, Ø conc.: 1.00 µg/kg, sample year: 2000–2005, country: Italy¹³⁶⁶, *hot pepper, whole/smashed (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 1/5, conc.: 0.6 µg/kg, sample year: unknown, country: Netherlands¹⁴⁷⁰

incidence: 6/23*, conc. range: 0.04–0.05 µg/kg, Ø conc.: 0.05 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *black pepper powder

AFLATOXIN G₁

incidence: 8/15*, conc. range: 0.7–28.4 µg/kg, Ø conc.: 9.1 µg/kg, sample year: unknown, country: USA¹¹, *red pepper

incidence: 2/10*, conc. range: ≤1.9 µg/kg, Ø conc.: 1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *red pepper

incidence: 11/84*, conc. range: ≤0.9 µg/kg, Ø conc.: 0.2 µg/kg, sample year: 1986–1990, country: Japan⁹⁹, *white pepper

incidence: 3/7*, conc. range: 1.8–3.7 µg/kg, sample year: unknown, country: USA¹⁸³, sa from India, Indonesia, and Malaysia, *black pepper

incidence: 7/24*, conc. range: 0.2–1.4 µg/kg, sample year: unknown, country: Japan¹⁸⁴, *white pepper

incidence: 2/20*, conc. range: 1.72–3.18 µg/kg, Ø conc.: 2.45 µg/kg, sample year: unknown, country: Egypt¹⁹⁹, *black pepper

incidence: 2/11* **, conc. range: 0.9–4.1 µg/kg***, Ø conc.: 2.5 µg/kg***, country: Turkey³⁴⁷, sa from Turkey and unknown origin, *red pepper, **sa from street bazaar, ***TLC and HPLC (2 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 5/8*, conc. range: 15–75 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *black pepper

incidence: 1/26*, conc.: 0.6 µg/kg, sample year: unknown, country: Turkey⁸⁶⁸, sa from Turkey and unknown origin, *red pepper

incidence: 1/11*, conc.: 1.40 µg/kg, sample year: 2000–2005, country: Italy¹³⁶⁶, *hot peper, whole/smashed (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXIN G₂

incidence: 1/15*, conc.: 1.1 µg/kg, sample year: unknown, country: USA¹¹, *red pepper

incidence: 1/7*, conc.: 1.1 µg/kg, sample year: unknown, country: USA¹⁸³, sa from India, Indonesia, and Malaysia, *black pepper

incidence: 1/11* **, conc.: 2 µg/kg***, country: Turkey³⁴⁷, sa from Turkey and unknown origin, *red pepper, **sa from street bazaar, **TLC and HPLC (1 sa co-contaminated with AFB₁, AFB₂, and AFG₂)

incidence: 5/8*, conc. range: 12–76 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *black pepper

incidence: 1/11*, conc.: 1.20 µg/kg, sample year: 2000–2005, country: Italy¹³⁶⁶, *hot peper, whole/smashed (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, and AFG₂)

AFLATOXINS (B, G)

incidence: 1/20*, conc.: 13.8 µg/kg, sample year: unknown, country: Turkey²⁶², *isot pepper

incidence: 8/44*, conc. range: 1.1–97.5 µg/kg, Ø conc.: 20.5 µg/kg, sample year: unknown, country: Turkey²⁶², *red-scaled pepper

incidence: 3/26*, conc. range: 1.8–16.4 µg/kg, Ø conc.: 7.3 µg/kg, sample year: unknown, country: Turkey²⁶², *red pepper powder

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/5* **, conc. range: 1.2–2.3 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from Bazaar, **ground black pepper

incidence: 1/5* **, conc.: 1.1 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from herbal shops, ** ground black pepper

incidence: 1/5* **, conc. range: 0.3 µg/kg, sample year: unknown, country: Turkey¹¹⁰⁶, *from supermarket, ** ground black pepper

incidence: 4/30, conc. range: 0.42–3.24 µg/kg, sample year: unknown, country: Ireland¹¹³⁹

incidence: 7/41*, conc. range: 0.08–4.66 µg/kg, sample year: 2006, country: Korea¹³⁷⁷, *red pepper flour

incidence: 2/15*, conc. range: 0.21–0.55 µg/kg, Ø conc.: 0.38 µg/kg, country: Korea¹³⁷⁷, *red pepper paste (Gochujang)

incidence: 10/24*, conc. range: 0.2–4.5 µg/kg, country: Malaysia¹⁶³², sa from Australia, Malaysia, and Singapore, *white pepper seed

incidence: 15/33*, conc. range: 0.1–4.6 µg/kg, country: Malaysia¹⁶³², sa from Australia, Malaysia, and Singapore, *white pepper powder

incidence: 18/30*, conc. range: 0.1–4.8 µg/kg, country: Malaysia¹⁶³², sa from Australia, Malaysia, and Singapore, *black pepper seed

incidence: 27/39*, conc. range: 0.7–4.9 µg/kg, country: Malaysia¹⁶³², sa from Australia, Malaysia, and Singapore, *black pepper powder

AFLATOXINS (TOTAL)

incidence: 14/15*, conc. range: ≤0.55 µg/kg, Ø conc.: 0.21 µg/kg, sample year: unknown, country: Morocco⁸⁶⁶, *black pepper

incidence: 17/30*, conc. range: 0.3–44.7 µg/kg, Ø conc.: 16.8 µg/kg, sample year: unknown, country: Turkey⁹¹⁵, *red-scaled pepper

incidence: 10/30*, conc. range: 0.3–14.2 µg/kg, Ø conc.: 5.6 µg/kg, sample year: unknown, country: Turkey⁹¹⁵, *red pepper

incidence: 8/24*, conc. range: 0.1–15.3 µg/kg, Ø conc.: 3.6 µg/kg, sample year: unknown, country: Turkey⁹¹⁵, *black pepper

incidence: 41/72*, conc. range: ≤8.8 µg/kg, Ø conc.: 2.2 µg/kg, sample year: 2008/2009, country: Spain¹⁵³⁶, *red pepper

incidence: 34/34*, conc. range: 3.55–9.55 µg/kg, Ø conc.: 6.36 µg/kg, sample year: unknown, country: Turkey¹⁶³⁶, *red pepper

incidence: ?/38*, conc. range: ≤9.46 µg/kg, sample year: unknown, country: Turkey¹⁶³⁶, *flaked red pepper

incidence: 34/34*, conc. range: 0.67–6.15 µg/kg, Ø conc.: 3.44 µg/kg, sample year: unknown, country: Turkey¹⁶³⁶, *black pepper

STERIGMATOCYSTIN

incidence: 2/8*, conc. range: 105–125 µg/kg, Ø conc.: 115 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *black pepper

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 1/8*, conc.: 50 µg/kg, sample year: 1984–1986, country: India⁸⁰³, *black pepper

OCHRATOXIN A

incidence: 32/70*, conc. range: 0.4–66.2 µg/kg, sample year: 2004, country: Hungary²⁵², *red pepper

incidence: 14/26*, conc. range: 10–29 µg/kg (8 sa), 30–49 µg/kg (5 sa), 50–100 µg/kg (1 sa), sample year: unknown, country: India/UK/Belgium³³³, sa from India, *black pepper

incidence: 2/2*, conc. range: 20–30 µg/kg, Ø conc.: 25 µg/kg, sample year: unknown, country: Belgium/Russia⁸⁷¹, sa from Belgium, Netherlands, and Russia, *red pepper

incidence: 1/6*, conc.: 0.6 µg/kg, sample year: 2005/2006, country: Belgium/Russia/Hungary¹⁰⁰⁷, sa from Belgium, Netherlands, and Russia, *black pepper

incidence: 11/11, conc. range: LOD/LOQ–4.9 µg/kg (6 sa), 5.0–9.9 µg/kg (5 sa, maximum: 8 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa from Austria

incidence: 57/120*, conc. range: 0.15–13.58 µg/kg, Ø conc.: 2.87 µg/kg, sample year: unknown, country: Malaysia¹¹⁶⁰, sa from Australia, Malaysia, and Singapore, *included black and white pepper seeds as well as powder

incidence: 13/20*, conc. range: 26–643 µg/kg, Ø conc.: 274 µg/kg, sample year: unknown, country: Tunisia¹⁵⁵⁹, *black pepper

incidence: 4/23*, conc. range: 0.87–3.48 µg/kg, Ø conc.: 1.82 µg/kg, sample year: 2010/2011, country: Turkey¹⁶¹³, *black pepper powder (1 sa co-contaminated with AFB₁ and OTA; no further information available)

Fusarium Toxins

BEAUVERICIN

incidence: 1/20*, conc.: 124 µg/kg, sample year: unknown, country: Belgium¹²⁸², *sweet pepper

ZEARALENONE

incidence: 5/10*, conc. range: 2–17 µg/kg, sample year: 2000/2001, country: Germany⁵²⁰, *red pepper

incidence: 1/8*, conc.: pr, sample year: 1984–1986, country: India⁸⁰³, *black pepper

see also Spice (cayenne pepper, chili)

Spice (peppermint) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/7, conc. range: 25–45 µg/kg, Ø conc.: 35 µg/kg, sample year: unknown, country: Egypt⁹⁹³

Spice (pili-pili) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 14/23*, Ø conc.: 11.6 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *pili and pili products, **of pos sa?

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/2*, conc.: 12 µg/kg, sample year: unknown, country: Belgium/Russia⁸⁷¹, sa from Belgium, Netherlands, and Russia

Spice (saffron) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/5*, conc. range: 2.0–2.75 µg/kg, Ø conc.: 2.38 µg/kg, sample year: unknown, country: Portugal¹²⁵, *packaged saffron

Spice (tandoori) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: ?/3, conc. range: 1.9–6.8 µg/kg, sample year: unknown, country: UK⁷³²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: ?/3, conc.: 2.2–23.9 µg/kg, sample year: unknown, country: UK⁷³²

Fusarium Toxins

FUMONISINS (B₁, B₂)

incidence: 1/3, conc.: 19 µg/kg, sample year: unknown, country: UK⁷³²

NIVALENOL

incidence: ?/3, conc.: 60–126 µg/kg, sample year: unknown, country: UK⁷³²

T-2 TOXIN

incidence: 1/3, conc.: 281 µg/kg, sample year: unknown, country: UK⁷³²

Spice (turmeric) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/15, Ø conc.: 12 µg/kg, sample year: unknown, country: Egypt¹⁴

incidence: 6/6, conc. range: tr–3.8 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (3 sa co-contaminated with AFB₁ and AFB₂, 3 sa contaminated solely with AFB₁)

incidence: 5?/9, conc. range: 21–165 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN B₂

incidence: 3/6, conc. range: tr–1.3 µg/kg*, sample year: unknown, country: Canada¹⁵⁹, sa imported, *approximate conc. (3 sa co-contaminated with AFB₁ and AFB₂)

incidence: 5?/9, conc. range: 12–150 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN G₁

incidence: 2/15, Ø conc.: 8 µg/kg, sample year: unknown, country: Egypt¹⁴

incidence: 5?/9, conc. range: 20–125 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXIN G₂

incidence: 5?/9, conc. range: 14–125 µg/kg, sample year: 1984–1986, country: India⁸⁰³

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 4/10, conc. range: 0.81–16.40 µg/kg, sample year: unknown, country: Ireland¹¹³⁹

Aspergillus and *Penicillium* Toxins**CITRININ**

incidence: 2/9, conc. range: 48–52 µg/kg, Ø conc.: 50 µg/kg, sample year: 1984–1986, country: India⁸⁰³

OCHRATOXIN A

incidence: 9/25, conc. range: 10–29 µg/kg (3 sa), 30–49 µg/kg (2 sa), 50–100 µg/kg (3 sa), 110 µg/kg (1 sa), sample year: unknown, country: India/UK/Belgium³³³, sa from India

Penicillium Toxins**RUBRATOXIN**

incidence: 1/9, conc.: 375 µg/kg, sample year: 1984–1986, country: India⁸⁰³

Starch (maize starch) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 1/1, conc.: 0.15 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFG₂, and OTA)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.08 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFG₂, and OTA)

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 12/30, conc. range: ~ ≤1.2 µg/kg*, sample year: 2006, country: Chile⁷⁸⁶, *estimated since below LOQ

incidence: 1/1, conc.: 0.33 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFG₂, and OTA)

Fusarium Toxins**FUMONISIN B₁**

incidence: 3/8, conc. range: 22.7–332 µg/kg, Ø conc.: 114 µg/kg, sample year: 1996, country: Korea³⁷⁵

incidence: 1/6, conc.: 260 µg/kg, sample year: unknown, country: Turkey³⁸¹

incidence: 1/1, conc.: 283 µg/kg, sample year: unknown, country: USA⁸³³ (1 sa co-contaminated with FB₁ and FB₂)

FUMONISIN B₂

incidence: 1/1, conc.: 70 µg/kg, sample year: unknown, country: USA⁸³³ (1 sa co-contaminated with FB₁ and FB₂)

FUMONISINS

incidence: 1/1, conc.: 500 µg/kg, sample year: unknown, country: USA³⁵⁷

FUMONISINS (TOTAL)

incidence: 2/5, conc. range: 800 µg/kg, Ø conc.: 800 µg/kg, sample year: 2002/2003, country: Turkey¹⁴⁷¹

T-2 TOXIN

incidence: 1/1*, conc.: 980 µg/kg, sample year: unknown, country: Turkey³³⁶, *bought from market

Starch (rice starch) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 1/1, conc.: 1.61 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN B₂

incidence: 1/1, conc.: 0.10 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₁

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa

co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.04 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 0.44 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Starch (wheat starch) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN B₂

incidence: 1/1, conc.: 0.03 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₁

incidence: 1/1, conc.: 0.05 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

AFLATOXIN G₂

incidence: 1/1, conc.: 0.15 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 0.31 µg/kg, sample year: 2002/2003, country: Turkey⁹³⁰ (1 sa co-contaminated with AFB₁, AFB₂, AFG₁, AFG₂, and OTA)

Stilton cheese see Cheese (Blue cheese)

Strawberries see Berry (strawberries)

Sugar may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3?/9, conc. range: 1–1.5 µg/kg, Ø conc.: 1.2 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

AFLATOXIN B₂

incidence: 3?/9, conc. range: 0.1–0.2 µg/kg, Ø conc.: 0.1 µg/kg, sample year: 1986–1990, country: Japan⁹⁹

Suji may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/10, conc. range: ≤50 µg/kg, Ø conc.: 24.60 µg/kg, sample year: unknown, country: India¹⁰²³

Suji is an Indian wheat. It is granulated and not pulverized (kind of semolina).

Sultana may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁, B₂)

incidence: 3/16*, conc. range: 0.3–2.0 µg/kg, sample year: 2002–2003, country: Brazil⁹¹⁶, sa from Argentina, Chile, Iran, and Turkey, *white sultanas

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 20/62*, conc. range: 0.026–1.0 µg/kg (12 sa), 1.01–2.0 µg/kg (2 sa), 2.01–5.0 µg/kg (3 sa), 5.01–10 µg/kg (2 sa), 25.5 µg/kg (1 sa), sample year: 1998, country: Turkey²⁵¹, *unprocessed sultanas from vineyard

incidence: 16/20*, conc. range: 0.026–1.0 µg/kg (1 sa), 1.01–2.0 µg/kg (2 sa), 2.01–5.0 µg/kg (4 sa), 5.01–10 µg/kg (3 sa), >10 µg/kg (6 sa, maximum: 33.6 µg/kg), sample year: 1999, country: Turkey²⁵¹, *unprocessed sultanas from vineyard

incidence: 4/10*, conc. range: 0.026–1.0 µg/kg (1 sa), 2.01–5.0 µg/kg (1 sa), 5.01–10 µg/kg (1 sa), 18.5 µg/kg (1 sa), sample year: 2000, country: Turkey²⁵¹, *unprocessed sultanas from vineyard

incidence: 60/65*, conc. range: 0.026–1.0 µg/kg (4 sa), 1.01–2.0 µg/kg (6 sa), 2.01–5.0 µg/kg (20 sa), 5.01–10 µg/kg (18 sa), >10 µg/kg (12 sa, maximum: 40.4 µg/kg), sample year: 2002, country: Turkey²⁵¹, *unprocessed sultanas from packing-house

incidence: 43/64*, conc. range: 0.026–1.0 µg/kg (18 sa), 1.01–2.0 µg/kg (8 sa), 2.01–5.0 µg/kg (12 sa), 5.01–10 µg/kg (3 sa), >10 µg/kg (2 sa, maximum: 54.0 µg/kg), sample year: 2003, country: Turkey²⁵¹, *unprocessed sultanas from packing-house

incidence: 36/39*, conc. range: 0.026–1.0 µg/kg (15 sa), 1.01–2.0 µg/kg (6 sa), 2.01–5.0 µg/kg (9 sa), 5.01–10 µg/kg (2 sa), >10 µg/kg (4 sa, maximum: 18.43 µg/kg), sample year: 2004, country: Turkey²⁵¹, *unprocessed sultanas from packing-house

incidence: 8/12, conc. range: ≤13.2 µg/kg, sample year: 1998, country: Greece²⁶³

incidence: 5/7, conc. range: ≤1.8 µg/kg, sample year: 1999, country: Greece²⁶³

incidence: 3/8, conc. range: ≤10.3 µg/kg, sample year: 2000, country: Greece²⁶³

incidence: 8/20, conc. range: 3.7–15.2 µg/kg, Ø conc.: 8 µg/kg, sample year: unknown, country: UK⁶³⁵, sa from different countries

incidence: 92/100, conc. range: 0.1 µg/kg (5 sa), 0.2–4 µg/kg (67 sa), 4.1–10 µg/kg (11 sa), 10.1–20 µg/kg (7 sa), 20.1–30 µg/kg (2 sa, maximum: 25.1 µg/kg), sample year: 1998, country: UK⁶³⁸, sa from different countries

incidence: 19/24*, conc. range: 0.1–5.0 µg/kg (11 sa), 5.1–10.0 µg/kg (4 sa), 10.1–20.0 µg/kg (3 sa), 33.9 µg/kg (1 sa), sample year: 2002/2003, country: Brazil⁸⁶⁵, sa from worldwide, *black sultanas

incidence: 10/19*, conc. range: 0.1–5.0 µg/kg (10 sa), sample year: 2002/2003, country: Brazil⁸⁶⁵, sa from worldwide, *white sultanas

incidence: 10/16*, conc. range: 0.30–1.00 µg/kg (1 sa), 1.01–2.00 µg/kg (6 sa), 2.01–5.00 µg/kg (1 sa), 5.01–10.00 µg/kg (2 sa, maximum: 5.90 µg/kg), sample year: 1999, country: Turkey⁸⁸⁵, *processed sultanas

incidence: 343/418*, conc. range: 0.30–1.00 µg/kg (245 sa), 1.01–2.00 µg/kg (63 sa), 2.01–5.00 µg/kg (30 sa), 5.01–10.00 µg/kg (3 sa), >10.01 µg/kg (2 sa, maximum: 100.00 µg/kg), sample year: 2000, country: Turkey⁸⁸⁵, *processed sultanas

incidence: 752/805*, conc. range: 0.30–1.00 µg/kg (336 sa), 1.01–2.00 µg/kg (228 sa), 2.01–5.00 µg/kg (158 sa), 5.01–10.00 µg/kg (22 sa), >10.01 µg/kg (8 sa, maximum: 47.81 µg/kg), sample year: 2001, country: Turkey⁸⁸⁵, *processed sultanas

incidence: 414/414*, conc. range: 0.30–1.00 µg/kg (132 sa), 1.01–2.00 µg/kg (156 sa), 2.01–5.00 µg/kg (120 sa), 5.01–10.00 µg/kg (5 sa), 11.31 µg/kg (1 sa), sample year: 2002, country: Turkey⁸⁸⁵, *processed sultanas

incidence: 194/232*, conc. range: 0.30–1.00 µg/kg (160 sa), 1.01–2.00 µg/kg (23 sa), 2.01–5.00 µg/kg (11 sa, maximum: 4.10 µg/kg), sample year: 2003, country: Turkey⁸⁸⁵, *processed sultanas

incidence: 39/66, conc. range: ≤26.0 µg/kg, Ø conc.: 3.11 µg/kg, sample year: 1998–2000, country: Canada¹²³⁸, sa from different countries

incidence: 21/31*, conc. range: 1.5–14 µg/kg, Ø conc.: 2.29 µg/kg, sample year: unknown, country: Argentina/Brazil¹²⁴⁴, sa from Argentina, *dried black vine fruits

incidence: 16/19*, conc. range: 1.4–7.5 µg/kg, Ø conc.: 3.23 µg/kg, sample year: unknown, country: Argentina/Brazil¹²⁴⁴, sa from Argentina, *dried white vine fruits

incidence: 28/53, conc. range: 0.51–58.04 µg/kg, sample year: unknown, country: Turkey¹³⁴⁶

incidence: 2/2, conc. range: 1.0–3.7 µg/kg, Ø conc.: 2.35 µg/kg, sample year: unknown, country: Italy¹⁵⁰³

see also Currant and Raisin

Sunflower seed may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 128/150*, conc. range: 50–676 µg/kg, Ø conc.: 189 µg/kg, sample year: 1991/1992, country: Argentina³³⁸, *ncac

incidence: 20/20*, conc. range: 250–980 µg/kg**, Ø conc.: 661 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **first sampling

incidence: 17/20*, conc. range: 60–800 µg/kg**, Ø conc.: 360 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **second sampling

incidence: 4/20*, conc. range: 800–1,600 µg/kg**, Ø conc.: 1,070 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **third sampling

incidence: 2/2, conc. range: 357–1,840 µg/kg, Ø conc.: 1,090 µg/kg, sample year: unknown, country: Italy³⁴⁰ (1 sa co-contaminated with AME and AOH)

incidence: 38/50, conc. range: 35–792 µg/kg, Ø conc.: 166.2 µg/kg, sample year: unknown, country: Argentina⁴⁸⁹

incidence: 9/50*, conc. range: 24.9–170.9 µg/kg**, sample year: 2002, country: Brazil¹³⁵⁰, *for food and feed, **during different phases of plant development

ALTERNARIOL METHYL ETHER

incidence: 70/150*, conc. range: 30–836 µg/kg, Ø conc.: 202 µg/kg, sample year: 1991/1992, country: Argentina³³⁸, *ncac

incidence: 0/20*, conc. range: no contamination**, sample year: 1994, country: Argentina³³⁹, *ncac, **first sampling

incidence: 1/20*, conc.: 600 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **second sampling

incidence: 1/20*, conc.: 800 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **third sampling

incidence: 1/2, conc.: 129 µg/kg, sample year: unknown, country: Italy³⁴⁰ (1 sa co-contaminated with AME and AOH)

incidence: 31/50, conc. range: 90–630 µg/kg, Ø conc.: 113.5 µg/kg, sample year: unknown, country: Argentina⁴⁸⁹

incidence: 5/50*, conc. range: 14.1–108.6 µg/kg**, sample year: 2002, country: Brazil¹³⁵⁰, *for food and feed, **during different phases of plant development

TENUAZONIC ACID

incidence: 98/150*, conc. range: 2,500–15,796 µg/kg, Ø conc.: 6,459 µg/kg, sample year: 1991/1992, country: Argentina³³⁸, *ncac

incidence: 16/20*, conc. range: 3,900–31,600 µg/kg**, Ø conc.: 16,000 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **first sampling

incidence: 13/20*, conc. range: 3,600–15,800 µg/kg**, Ø conc.: 8,000 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **second sampling

incidence: 9/20*, conc. range: 3,120–6,240 µg/kg**, Ø conc.: 4,500 µg/kg**, sample year: 1994, country: Argentina³³⁹, *ncac, **third sampling

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/4*, conc.: 10.5 µg/kg,
sample year: unknown, country: GDR¹⁷⁸,
*moldy

incidence: 1/89, conc.: 8 µg/kg, sample
year: 1979, country: USA⁹⁹⁶

incidence: 6/7, conc. range: 1.14–5.33 µg/
kg, Ø conc.: 2.55 µg/kg, sample year:
unknown, country: Malaysia¹⁶⁰⁰

AFLATOXIN B₂

incidence: 1/4*, conc.: 0.5 µg/kg,
sample year: unknown, country: GDR¹⁷⁸,
*moldy

AFLATOXIN G₁

incidence: 1/4*, conc.: 0.4 µg/kg,
sample year: unknown, country: GDR¹⁷⁸,
*moldy

AFLATOXIN G₂

incidence: 1/4*, conc.: 0.03 µg/kg,
sample year: unknown, country: GDR¹⁷⁸,
*moldy

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 7*/136, conc. range: 5.0–9.9 µg/
kg (5 sa), 10.0–14.9 µg/kg (1 sa), 15.0–
19.9 µg/kg (1 sa), sample year: 1970–1975,
country: Canada⁵⁹

AFLATOXINS (TOTAL)

incidence: 1/1, conc.: 1.92 µg/kg, sample
year: unknown, country: Poland¹¹⁰, sa
imported?

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 10/34, conc. range: ≤0.100 µg/
kg, sample year: unknown, country:
Germany⁵⁹²

incidence: 1/3, conc.: 4.34 µg/kg, sample
year: 2008/2009, country: Jordan⁹⁰⁸

Fusarium Toxins

DEOXYNIVALENOL

incidence: 4/9* **, conc. range: 40–304 µg/
kg, Ø conc.: 155 µg/kg, sample year: 2004,

country: Serbia⁹³⁷, *ncac, **sunflower and
sunflower meal

incidence: 5/10* **, conc. range:
114–788 µg/kg, Ø conc.: 447 µg/kg,
sample year: 2005, country: Serbia⁹³⁷,
*ncac, **sunflower and sunflower
meal

HT-2 TOXIN

incidence: 2/5, conc. range: 5 µg/
kg, sample year: 2000/2001, country:
Germany⁵²⁰

T-2 TOXIN

incidence: 2/5, conc.: 20–21 µg/kg,
Ø conc.: 20.5 µg/kg, sample year:
2000/2001, country: Germany⁵²⁰

ZEARALENONE

incidence: 2/5, conc. range: 2–4 µg/kg,
Ø conc.: 3 µg/kg, sample year: 2000/2001,
country: Germany⁵²⁰

Surk cheese see Cheese (Surk
cheese)

Sweet corn see Maize

Sweet potatoes see Tuber

Sweet wine see Wine

Swine see Pork

Syrup (sorghum syrup) may contain
the following mycotoxins:

Fusarium ToxinsFUMONISIN B₁

incidence: 1/35, conc.: 120 µg/kg, sample
year: unknown, country: USA/Korea⁶⁸¹, sa
from USA

Table wine see Wine

Taco see Tortillas

Tahini see Butter (sesame butter)

Tandoori see Spice (tandoori)

Tangerine may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 2/4*, conc. range: 2.5–3.7 µg/kg, Ø conc.: 3.1 µg/kg, sample year: 2004, country: Brazil⁹⁶¹, *healthy flavedo tissue of tangerines

incidence: 4/4*, conc. range: 13.1–17.4 µg/kg, Ø conc.: 14.48 µg/kg, sample year: 2004, country: Brazil⁹⁶¹, *flavedo tissue of tangerines with symptoms

ALTERNARIOL METHYL ETHER

incidence: 2/4*, conc. range: ≤0.9 µg/kg, sample year: 2004, country: Brazil⁹⁶¹, *healthy flavedo tissue of tangerines

incidence: 4/4*, conc. range: 2.5–3.5 µg/kg, Ø conc.: 2.85 µg/kg, sample year: 2004, country: Brazil⁹⁶¹, *flavedo tissue of tangerines with symptoms

Tarhana may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN (TOTAL)

incidence: 32/138, conc. range: 0.7–16.8 µg/kg, Ø conc.: 7.81 µg/kg, sample year: 2011, country: Turkey¹⁵⁸⁴

Tarhana is a traditional Turkish cereal-based fermented food product.

Tea may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/9*, conc.: 1.45 µg/kg, sample year: unknown, country: Korea¹⁰⁰⁹, *Adlay tea

AFLATOXINS (B₁, B₂)

incidence: 4/20, conc. range: 2.8–18.4 µg/kg, Ø conc.: 7.25 µg/kg, sample year: unknown, country: Egypt⁷⁰²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/32*, conc.: 1.33 µg/kg, sample year: unknown, country: Germany⁵⁸¹, *green tea

incidence: 3/34*, conc. range: ≤1.78 µg/kg, Ø conc.: 1.14 µg/kg, sample year: unknown, country: Germany⁵⁸¹, *herb tea

incidence: 13/31*, conc. range: ≤10.3 µg/kg, Ø conc.: 2.78 µg/kg, sample year: unknown, country: Germany⁵⁸¹, *children's herb tea

Fusarium Toxins

FUMONISIN B₁

incidence: 16/18*, conc. range: 80–280 µg/kg, sample year: unknown, country: Portugal³¹⁰, *black tea

incidence: 1/91*, conc.: 76 µg/kg**, sample year: 2008–2010, country: Belgium/China¹²⁸³, *tea raw material, **Ceylon mélange

Teff may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 8/35, conc. range: tr (2 sa), 1 to <5 µg/kg (4 sa), 10 to ≤15.6 µg/kg (2 sa), Ø conc.: 5.1 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

AFLATOXINS

incidence: 8/81*, conc. range: 9–20 µg/kg, Ø conc.: 15.8 µg/kg, sample year: unknown, country: Ethiopia¹⁰⁷, *mixed teff

incidence: 9/81*, conc. range: 9–20 µg/kg (9 sa), 21–30 µg/kg (1 sa), Ø conc.: 16.4 µg/kg, sample year: unknown, country: Ethiopia¹⁰⁷, *red teff

incidence: 7/81*, conc. range: 9–20 µg/kg, Ø conc.: 13.7 µg/kg, sample year: unknown, country: Ethiopia¹⁰⁷, *white teff

incidence: 23/81*, conc. range:
9–20 µg/kg (13 sa), 21–30 µg/kg (8 sa),
31–39 µg/kg (2 sa), Ø conc.: 20.7 µg/kg,
sample year: unknown, country:
Ethiopia¹⁰⁷, *maize teff

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 9/33, conc. range: 1 to <5 µg/kg
(2 sa), 5 to <50 µg/kg (5 sa), 50 to ≤80 µg/
kg (2 sa), Ø conc.: 32.7 µg/kg, sample year:
1999, country: Ethiopia/Germany⁹¹⁹, sa
from Ethiopia

Teff (*Eragrostis tef*) is an annual grass.
The seeds are similar to quinoa and millet
in cooking.

Tiger-nuts see Nut (tiger-nuts)

Tilsit cheese see Cheese (Tilsit
cheese)

Toast see Bread

Tobacco may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/40, conc.: 15.5 µg/kg,
sample year: unknown, country: Egypt¹⁰⁷²

AFLATOXIN B₂

incidence: 1/40, conc.: 20.7 µg/kg, sample
year: unknown, country: Egypt¹⁰⁷²

Fusarium Toxins

T-2 TOXIN

incidence: 1/40, conc.: 2.8 µg/kg,
sample year: unknown, country:
Egypt¹⁰⁷²

ZEARALENONE

incidence: 1/40, conc.: 5.5 µg/kg, sample
year: unknown, country: Egypt¹⁰⁷²

Tofu may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/24*, conc. range: 1.7–6.3 µg/
kg, Ø conc.: 4.03 µg/kg, sample year:
1988/1989, country: China/USA¹³⁵², sa from
China, *partially-dried tofu

Tomato may contain the following
mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 4/19, conc. range: ≤1,100 µg/kg,
sample year: unknown, country: USA³⁴⁴

ALTERNARIOL

incidence: 1/2, conc.: 1,274 µg/kg, sample
year: unknown, country: Italy³⁴⁰ (1 sa co-
contaminated with AME, AOH, and TA)

incidence: 6/19, conc. range: ≤5,300 µg/kg,
sample year: unknown, country: USA³⁴⁴

incidence: 3/13*, conc. range: 4–7 µg/kg,
sample year: 2010, country:
Switzerland¹²⁷¹, *tomatoes peeled, minced

ALTERNARIOL METHYL ETHER

incidence: 2/2, conc. range: 37–268 µg/
kg, Ø conc.: 152.5 µg/kg, sample year:
unknown, country: Italy³⁴⁰ (1 sa co-
contaminated with AME, AOH, and TA,
1 sa co-contaminated with AME and TA)
incidence: 5/19, conc. range: ≤800 µg/
kg, sample year: unknown, country:
USA³⁴⁴

incidence: 1/13*, conc.: 1 µg/kg, sample
year: 2010, country: Switzerland¹²⁷¹,
*tomatoes peeled, minced

TENTOXIN

incidence: 1/13*, conc.: 2 µg/kg, sample
year: 2010, country: Switzerland¹²⁷¹,
*tomatoes peeled, minced

TENUAZONIC ACID

incidence: 2/2, conc. range: 24–7,210 µg/kg, Ø conc.: 3,617 µg/kg, sample year: unknown, country: Italy³⁴⁰ (1 sa co-contaminated with AME, AOH, and TA, 1 sa co-contaminated with AME and TA)
 incidence: 73/146*, conc. range: 400–69,700 µg/kg, Ø conc.: 4,940 µg/kg, sample year: 1983, country: USA³⁴¹, *fresh tomatoes used for catsup production
 incidence: 73/142, conc. range: 400–1,900 µg/kg (28 sa), 2,000–70,000 µg/kg (45 sa), sample year: unknown, country: USA³⁴³
 incidence: 11/19, conc. range: ≤139,000 µg/kg, sample year: unknown, country: USA³⁴⁴
 incidence: 1/4*, conc.: 37 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *fresh and whole tomatoes
 incidence: 13/13*, conc. range: 25–200 µg/kg, Ø conc.: 81 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹, *tomatoes peeled, minced

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/11*, conc. range: tr–1.44 µg/kg, sample year: unknown, country: Germany²⁸⁹, *moldy

Tomato juice see Juice (tomato juice)

Tomato ketchup may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 18/18, conc. range: 1.0–5.0 µg/kg, Ø conc.: 2.5 µg/kg, sample year: 2009/2010, country: Germany¹⁰³⁸
 incidence: 1/1, conc.: 2.6 µg/kg, sample year: unknown, country: Germany¹²¹² (1 sa co-contaminated with AME and AOH)
 incidence: 3/19, conc. range: 4–5 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹

ALTERNARIOL METHYL ETHER

incidence: 1/1, conc.: 0.4 µg/kg, sample year: unknown, country: Germany¹²¹² (1 sa co-contaminated with AME and AOH)
 incidence: 3/19, conc. range: 1 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹

TENUAZONIC ACID

incidence: 2/18, conc. range: 55–67 µg/l, Ø conc.: 61 µg/kg, sample year: unknown, country: Germany/Indonesia¹²¹¹, sa from Germany
 incidence: 19/19, conc. range: 3–141 µg/kg, Ø conc.: 37 µg/kg, sample year: 2010, country: Switzerland¹²⁷¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 18/57, conc. range: ≤3.8 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and imported?

Tomato paste see Paste (tomato paste)

Tomato puree see Puree

Tomato pulp see Pulp (tomato pulp)

Tomato sauce see Sauce (tomato sauce)

Tortellini see Pasta

Tortilla chips see Chips (tortilla chips)

Tortilla may contain the following mycotoxins:

Fusarium ToxinsFUMONISIN B₁

incidence: 7/7, conc. range: 210–1,070 µg/kg, Ø conc.: 601 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico (4 sa co-contaminated with FB₁, HFB₁, and FB₂, 1 sa co-contaminated with FB₁ and HFB₁, 2 sa co-contaminated with FB₁ and FB₂)

incidence: 1/1*, conc.: 230 µg/kg, sample year: 1991, country: USA³⁸⁴, *corn tortilla mix

incidence: 2/2*, conc. range: 13–19 µg/kg, Ø conc.: 16 µg/kg, sample year: 1996, country: Denmark³⁸⁵, *taco shells

incidence: 9/11*, conc. range: 24–612 µg/kg, Ø conc.: 227.3 µg/kg, sample year: unknown, country: Canada⁴⁰⁵, *corn tortillas, dried

incidence: 46/48*, conc. range: 12–672 µg/kg, Ø conc.: 192.7 µg/kg, sample year: unknown, country: USA/Mexico⁴⁰⁹, *white tortilla type (44 sa co-contaminated with FB₁ and HFB₁, 2 sa contaminated solely with FB₁)

incidence: 4/4*, conc. range: 120–190 µg/kg, Ø conc.: 152.5 µg/kg, sample year: unknown, country: USA/Mexico⁴⁰⁹, *yellow tortilla type (4 sa co-contaminated with FB₁ and HFB₁)

incidence: 1/2, conc.: 120 µg/kg, sample year: 1990, country: USA⁴¹⁰ (1 sa co-contaminated with FB₁ and FB₂)

incidence: ?/73, conc. range: 400–11,600 µg/kg*, sample year: 1995, country: USA/Guatemala⁶⁶⁸, sa from Guatemala, *dry weight

incidence: 2/4, conc. range: 112.9–175 µg/kg, Ø conc.: 144 µg/kg, sample year: 2001, country: USA⁸⁶⁹

HYDROLYZED FUMONISIN B₁

incidence: 5/7, conc. range: 10–50 µg/kg, Ø conc.: 22 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico (4 sa co-contaminated with FB₁, HFB₁, and FB₂, 1 sa co-contaminated with FB₁ and HFB₁)

incidence: 44/48*, conc. range: 8–204 µg/kg, Ø conc.: 61.7 µg/kg, sample year: unknown, country: USA/Mexico⁴⁰⁹, *white tortilla type (44 sa co-contaminated with FB₁ and HFB₁)

incidence: 4/4*, conc. range: 16–103 µg/kg, Ø conc.: 66.3 µg/kg, sample year:

unknown, country: USA/Mexico⁴⁰⁹, *yellow tortilla type (4 sa co-contaminated with FB₁ and HFB₁)

incidence: ?/73, conc. range: 400–185,100 µg/kg*, sample year: 1995, country: USA/Guatemala⁶⁶⁸, sa from Guatemala, *dry weight

FUMONISIN B₂

incidence: 6/7, conc. range: 50–180 µg/kg, Ø conc.: 88.3 µg/kg, sample year: unknown, country: USA³⁶⁴, sa from Mexico (4 sa co-contaminated with FB₁, HFB₁, and FB₂, 2 sa co-contamination with FB₁ and FB₂)

incidence: 2/2*, conc. range: 7 µg/kg, Ø conc.: 7 µg/kg, sample year: 1996, country: Denmark³⁸⁵, *taco shells

incidence: 6/11*, conc. range: 26–218 µg/kg, Ø conc.: 73.5 µg/kg, sample year: unknown, country: Canada⁴⁰⁵, *corn tortillas, dried

incidence: 1/2, conc.: 30 µg/kg, sample year: 1990, country: USA⁴¹⁰ (1 sa co-contaminated with FB₁ and FB₂)

FUMONISINS (B₁, B₂, B₃)

incidence: 6/20*, conc. range: 10–31 µg/kg, sample year: 1994/1995, country: UK³⁸³, *included tortilla, tacos, and enchiladas

FUMONISINS

incidence: 4/?/5, conc. range: ≤800 µg/kg, sample year: unknown, country: USA³⁵⁷

ZEARALENONE

incidence: ?/7*, conc. range: ≤3.1 µg/kg, sample year: unknown, country: USA¹⁶⁶², *white tortilla (2 sa >2 µg/kg)

incidence: ?/8*, conc. range: ≤6.8 µg/kg, sample year: unknown, country: USA¹⁶⁶², *yellow tortilla (4 sa >2 µg/kg)

Traditional herbal medicines see Medicinal plant

Triticale may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 4/6*, conc. range: 20–80 µg/kg, Ø conc.: 52.5 µg/kg, sample year: 1991, country: Poland¹⁶⁶⁴, *triticale kernels with “black point” symptoms (1 sa co-contaminated with AME and AOH, 3 sa contaminated solely with AOH)

ALTERNARIOL METHYL ETHER

incidence: 1/7*, conc.: 20 µg/kg, sample year: 1990, country: Poland¹⁶⁶⁴, *triticale kernels with “black point” symptoms (1 sa co-contaminated with AME and AOH)

Aspergillus Toxins

AFLATOXIN G₁

incidence: 4/4*, conc. range: 1.12–5.76 µg/kg, Ø conc.: 3.51 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (2 sa co-contaminated with AFG₁ and AFG₂, 2 sa contaminated solely with AFG₁)

AFLATOXIN G₂

incidence: 2/4*, conc. range: 0.89–2.2 µg/kg, Ø conc.: 1.55 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (2 sa co-contaminated with AFG₁ and AFG₂)

Claviceps Toxins

ERGOCORNINE

incidence: 2/2*, conc. range: 20–26 µg/kg, Ø conc.: 23 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *triticale mix (2 sa co-contaminated with ERC, ERCR, ERM, ERS, ERT, and α-ERC)

ERGOCRISTINE

incidence: 2/2*, conc. range: 88–99 µg/kg, Ø conc.: 93.5 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *triticale mix (2 sa co-contaminated with ERC, ERCR, ERM, ERS, ERT, and α-ERC)

ERGOMETRINE

incidence: 2/2*, conc. range: 15–16 µg/kg, Ø conc.: 15.5 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *triticale mix (2 sa co-contaminated with ERC, ERCR, ERM, ERS, ERT, and α-ERC)

ERGOSINE

incidence: 2/2*, conc. range: 13–18 µg/kg, Ø conc.: 15.5 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *triticale mix (2 sa co-contaminated with ERC, ERCR, ERM, ERS, ERT, and α-ERC)

ERGOTAMINE

incidence: 2/2*, conc. range: 41–53 µg/kg, Ø conc.: 47 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *triticale mix (2 sa co-contaminated with ERC, ERCR, ERM, ERS, ERT, and α-ERC)

α-ERGOCRYPTINE

incidence: 2/2*, conc. range: 20–29 µg/kg, Ø conc.: 24.5 µg/kg, sample year: unknown, country: Canada⁸⁰⁶, *triticale mix (2 sa co-contaminated with ERC, ERCR, ERM, ERS, ERT, and α-ERC)

Fusarium Toxins

DEOXYNIVALENOL

incidence: 5/5*, conc. range: 168–427 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed
 incidence: 4/7*, conc. range: tr–370 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed
 incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring triticale, **conventional
 incidence: 1/1* **, conc.: 913.6 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring triticale, **organic
 incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring triticale, **conventional

incidence: 1/1* **, conc.: 189.5 µg/kg,
sample year: 2006, country: Lithuania/
Denmark¹⁴⁴², sa from Lithuania, *spring
triticale, **organic

incidence: 0/0* **, no sa investigated,
sample year: 2005, country: Lithuania/
Denmark¹⁴⁴², *winter triticale,
**conventional

incidence: 2/2* **, Ø conc.: 197.00 µg/kg,
sample year: 2005, country: Lithuania/
Denmark¹⁴⁴², sa from Lithuania, *winter
triticale, **organic

incidence: 0/0* **, no sa investigated,
sample year: 2006, country: Lithuania/
Denmark¹⁴⁴², *winter triticale,
**conventional

incidence: 2/2* **, Ø conc.: 178.85 µg/kg,
sample year: 2006, country: Lithuania/
Denmark¹⁴⁴², sa from Lithuania, *winter
triticale, **organic

MONILIFORMIN

incidence: 3/3* **, conc. range: 2,400–
5,100 µg/kg, Ø conc.: 3,533 µg/kg, sample
year: 1988, country: Austria/Poland⁴⁹³, sa
from Poland, *ncac, ***Fusarium* damaged
kernels

incidence: 1/1* **, conc.: 250 µg/kg,
sample year: 1988, country: Austria/
Poland⁴⁹³, sa from Poland, * ncac,
**healthy looking kernels

incidence: 3/3* **, conc. range: 2,600–
15,700 µg/kg, Ø conc.: 8,700 µg/kg,
sample year: probably 1985–1989,
country: UK/Poland⁵²⁴, sa from Poland,
*ncac, ***Fusarium* damaged kernels

ZEARALENONE

incidence: 2/7*, conc. range: tr, sample
year: 2005, country: Lithuania¹²⁵⁴, *for
food and feed

incidence: 0/0* **, no sa investigated,
sample year: 2006, country: Lithuania/
Denmark¹⁴⁴², *spring triticale,
**conventional

incidence: 1/1* **, conc.: 38.5 µg/kg,
sample year: 2006, country: Lithuania/

Denmark¹⁴⁴², sa from Lithuania, *spring
triticale, **organic

incidence: 0/0* **, no sa investigated,
sample year: 2006, country: Lithuania/
Denmark¹⁴⁴², *winter triticale,
**conventional

incidence: 2/2* **, Ø conc.: 11.85 µg/kg,
sample year: 2006, country: Lithuania/
Denmark¹⁴⁴², sa from Lithuania, *winter
triticale, **organic

Triticale flour see Flour (triticale
flour)

Tuber may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 6/59*, conc. range: >30 to ≤440 µg/
kg, sample year: 1967–1969, country: USA³²,
sa from Philippines, *included ubi, gabi, tugi,
singkamas, and sweet potatoes

incidence: 31/37*, Ø conc.: 60.6 µg/kg**,
sample year: unknown, country:
Philippines⁹⁵⁶, *sweet potatoe and sweet
potatoe products, **of pos sa?

Tugi see Tuber

Tulum cheese see Cheese (Tulum
cheese)

Turkey may contain the following
mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 10/17, conc. range: ≤0.11 µg/
kg, sample year: 1993/1994, country:
Denmark⁶²⁴

Turkey liver see Liver (turkey liver)

Turmeric see Spice (turmeric)

Ubi see Tuber

UHT milk see Milk, UHT milk

Umqomboti see Beer

Utshwala see Beer

Vegetables may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/12*, conc. range: 7–28 µg/kg, Ø conc.: 20 µg/kg, sample year: unknown, country: USA/Egypt¹⁶², sa from Egypt, *dried vegetables

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 1/140*, conc.: 46 µg/kg, Ø conc.: 30 µg/kg?, sample year: 1967–1969, country: Thailand¹⁶³, *fresh vegetables

incidence: 3/100*, conc. range: 2–20 µg/kg (2 sa), >20 µg/kg (1 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *dried vegetables

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/7*, conc. range: 245–7,444 µg/kg, sample year: unknown, country: Tunisia/France⁶³⁴, sa from Tunisia, *dried vegetables (chickpea, bean, lentil)

Fusarium Toxins

ZEARALENONE

incidence: 1/99*, conc.: >200 µg/kg (1 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *dried vegetables

Vermouth see Wine

Vine fruit (dried) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6*/27, conc. range: <LOQ–9.87 µg/kg*, sample year: 2008/2009, country: Italy¹⁶⁰¹, *contaminated sa from Chile (1) and Turkey (5)

see also currant, raisin and sultana

Vinegar may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/18*, conc.: <0.01 µg/l, sample year: unknown, country: Germany⁶³⁹, *apple and fruit vinegars

incidence: 19/38*, conc. range: ≤1.9 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and imported?, *wine vinegar

incidence: 24/29*, conc. range: ≤4.35 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and imported?, *balsamico vinegar

incidence: 15/15*, conc. range: 0.008–0.046 µg/l (12 sa), 0.102–0.252 µg/l (3 sa**), sample year: 1999, country: Greece/France⁶⁴³, **balsamico vinegar

incidence: 1/6, conc.: 0.80 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

OCHRATOXIN B

incidence: 1/6, conc.: 0.29 µg/kg, sample year: unknown, country: Japan¹⁰²⁵

PATULIN

incidence: 1/2, conc.: 14.2 µg/l, sample year: unknown, country: Taiwan⁷⁰⁷

incidence: 0/2* **, conc. range: no contamination, sample year: 2003/2004, country: Italy¹³²⁷, *apple vinegar, **conventional

incidence: 2/6* **, conc. range: >LOQ to <10 µg/kg (2 sa, maximum: 4.2 µg/kg), sample year: 2003/2004, country: Italy¹³²⁷, *apple vinegar, **organic

Walnuts see Nut (walnuts)

Weaning foods see Food

Wensleydale cheese see Cheese (Wensleydale cheese)

Wheat may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 2/15, Ø conc.: 1,480 µg/kg,

sample year: unknown, country: Egypt²⁹¹

incidence: 56/56*, conc. range: 14.5–41 µg/kg, Ø conc.: 25 µg/kg, sample year: 2003, country: Czech Republic¹⁰¹², *winter wheat

ALTERNARIOL

incidence: 3/4*, conc. range: 210–340 µg/kg, Ø conc.: 260 µg/kg, sample year: 2008, country: Estonia²⁷⁶, *ncac

incidence: 4/15, Ø conc.: 2,320 µg/kg, sample year: unknown, country: Egypt²⁹¹

incidence: 20/22* **, conc. range: 116–731 µg/kg, Ø conc.: 335 µg/kg, sample year: 1998, country: Japan³⁰⁹, sa from China, *for food and feed, **weather-damaged wheat (20 sa co-contaminated with AME, AOH, and TA)

incidence: 4/64, conc. range: 645–1,388 µg/kg, Ø conc.: 1,054 µg/kg, sample year: 2004/2005, country: Argentina⁹²³

incidence: 16/56*, conc. range: 6.3–22.1 µg/kg, sample year: 2003, country: Czech Republic¹⁰¹², *winter wheat

incidence: ?/68*, conc. range: tr, sample year: 1992–1994, country: Australia¹³³⁸, *ncac

incidence: 2/26, conc. range: 37–71 µg/kg, Ø conc.: 54 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁶⁴, sa from Kenya (1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA, 1 sa co-contaminated with AME, AOH, DON, ENB, FUS-X, and OTA)

incidence: 3/8*, conc. range: 10–600 µg/kg, Ø conc.: 220 µg/kg, sample year: 1990, country: Poland¹⁶⁶⁴, *wheat kernels with “black point” symptoms

(1 sa co-contaminated with AME and AOH, 2 sa contaminated solely with AOH) incidence: 1/7*, conc.: 60 µg/kg, sample year: 1991, country: Poland¹⁶⁶⁴, *wheat kernels with “black point” symptoms

ALTERNARIOL METHYL ETHER

incidence: 2/15, Ø conc.: 1,890 µg/kg, sample year: unknown, country: Egypt²⁹¹

incidence: 21/22*, conc. range: 52–1,426 µg/kg, Ø conc.: 443 µg/kg, sample year: 1998, country: Japan³⁰⁹, sa from China, *for food and feed, **weather-damaged wheat (20 sa co-contaminated with AME, AOH, and TA, 1 sa co-contaminated with AME and TA)

incidence: 15/64, conc. range: 566–7,451 µg/kg, Ø conc.: 2,118 µg/kg, sample year: 2004/2005, country: Argentina⁹²³

incidence: 3/158* **, conc. range: 45–83 µg/kg, sample year: 2000/2001, country: Germany¹⁰⁴⁴, *ncac, **winter wheat

incidence: 5/68*, conc. range: pr, sample year: 1992–1994, country: Australia¹³³⁸, *ncac

incidence: 7/26, conc. range: 3–174 µg/kg, Ø conc.: 14.4 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁶⁴, sa from Kenya

(1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA, 1 sa co-contaminated with AME, AOH, DON, ENB, FUS-X, and OTA,

1 sa co-contaminated with AME, DON, 3-AcDON, and ENB, 1 sa co-contaminated with AME, 3-AcDON, and OTA, 1 sa co-contaminated with AME, ENB, and ZEA, 1 sa co-contaminated with AME and DON, 1 sa co-contaminated with AME and ENB)

incidence: 1/8, conc.: 400 µg/kg, sample year: 1990, country: Poland¹⁶⁶⁴, *wheat kernels with “black point” symptoms (1 sa co-contaminated with AME and AOH)

ALBERTOXIN I

incidence: 2/15, Ø conc.: 1,678 µg/kg, sample year: unknown, country: Egypt²⁹¹

TENTOTOXIN

incidence: 58/58* **, conc. range: ≤ 13 $\mu\text{g}/\text{kg}$, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by *fusarium* head blight

TENUAZONIC ACID

incidence: 5/15, \emptyset conc.: 658 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt²⁹¹
 incidence: 22/22*, conc. range: 260–6,432 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,419 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Japan³⁰⁹, sa from China, *for food and feed, **weather-damaged wheat (20 sa co-contaminated with AME, AOH, and TA, 1 sa co-contaminated with AME and TA)
 incidence: 12/64, conc. range: 1,001–8,814 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,313 $\mu\text{g}/\text{kg}$, sample year: 2004/2005, country: Argentina⁹²³

incidence: 7/158* **, conc. range: 44–105 $\mu\text{g}/\text{kg}$, sample year: 2000/2001, country: Germany¹⁰⁴⁴, *ncac, **winter wheat

incidence: ?/68*, conc. range: ≤ 70 $\mu\text{g}/\text{kg}$, sample year: 1992–1994, country: Australia¹³³⁸, *ncac

incidence: ?/79*, conc. range: ≤ 163 $\mu\text{g}/\text{kg}$, sample year: 1992–1994, country: Australia¹³³⁸, sa from North America, *ncac

Aspergillus ToxinsAFLATOXIN B₁

incidence: 125?/501, conc. range: 1–10 $\mu\text{g}/\text{kg}$ (25 sa), >10 –20 $\mu\text{g}/\text{kg}$ (14 sa), >20 –50 $\mu\text{g}/\text{kg}$ (5 sa), >50 –100 $\mu\text{g}/\text{kg}$ (2 sa), >100 –500 $\mu\text{g}/\text{kg}$ (2 sa), >500 –2,000 $\mu\text{g}/\text{kg}$ (2 sa), sample year: during the 1990s, country: Cuba⁴⁷

incidence: 3*/7, conc. range: 10–15 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Germany⁶⁷, *moldy

incidence: 1/26, conc.: 1,387.5 $\mu\text{g}/\text{kg}$, sample year: 1978/1979, country: Egypt¹⁴⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 18/579, conc. range: ≤ 18 $\mu\text{g}/\text{kg}$, sample year: unknown, country: USSR¹⁹¹, sa imported

incidence: 16/1,100, conc. range: ≤ 2.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: USSR¹⁹¹

incidence: 17/79*, conc. range: 34–1,240 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India³⁹⁰, *ncac

incidence: 26/37, conc. range: <20 $\mu\text{g}/\text{kg}$ (2 sa), 21–100 $\mu\text{g}/\text{kg}$ (2 sa), 101–500 $\mu\text{g}/\text{kg}$ (15 sa), 501–1,000 $\mu\text{g}/\text{kg}$ (4 sa), $>1,000$ $\mu\text{g}/\text{kg}$ (3 sa, maximum: 1,348 $\mu\text{g}/\text{kg}$), sample year: 1987, country: India³⁹⁸

incidence: 19/25* **, conc. range: 85–1,248 $\mu\text{g}/\text{kg}$, sample year: 1987, country: India⁴⁷⁷, *ncac, **insect damaged sa

incidence: 2/25* **, conc. range: 85–113 $\mu\text{g}/\text{kg}$, \emptyset conc.: 99 $\mu\text{g}/\text{kg}$, sample year: 1987, country: India⁴⁷⁷, *ncac, **insect free sa

incidence: 23/31* **, conc. range: 0.8–17 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.54 $\mu\text{g}/\text{kg}$, sample year: 1982, country: USA⁷⁷⁰, *ncac, **scabby wheat (2 sa co-contaminated with AFB₁, DON, and ZEA, 19 sa co-contaminated with AFB₁ and DON, 2 sa contaminated solely with AFB₁)

incidence: 5/120, conc. range: tr (1 sa), 5 to <10 $\mu\text{g}/\text{kg}$ (2 sa), 10 to ≤ 12.3 $\mu\text{g}/\text{kg}$ (2 sa), \emptyset conc.: 8.7 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 23/50*, conc. range: ≤ 7 $\mu\text{g}/\text{kg}$, sample year: 2004, country: Kenia/Germany⁹⁸⁴, sa from Kenia, *ncac

incidence: 17/41, conc. range: 0.0104–0.1442 $\mu\text{g}/\text{kg}$, sample year: 2002/2003, country: Turkey¹⁰¹⁹ (5 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 1 sa co-contaminated with AFB₁ and AFB₂, 6 sa co-contaminated with AFB₁ and AFG₁, 5 sa contaminated solely with AFB₁)

incidence: 50/140, conc. range: $\leq 1,400$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 43.00 $\mu\text{g}/\text{kg}$, sample year: unknown, country: India¹⁰²³

incidence: 4/46, conc. range: 0.12–18.0 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 3 sa co-contaminated with AFB₁ and AFB₂)

incidence: 3/5*, conc. range: 0.87–3.41 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.88 $\mu\text{g}/\text{kg}$, sample year: 2004, country: Algeria/France¹³⁶¹, sa from Algeria, *field wheat

incidence: 14/23*, conc. range: 0.21–13.96 $\mu\text{g}/\text{kg}$, sample year: 2006, country: Algeria/France¹³⁶¹, sa from Algeria, *field wheat

incidence: 11/17*, conc. range: 0.13–37.42 $\mu\text{g}/\text{kg}$, sample year: 2004/2006, country: Algeria/France¹³⁶¹, sa from Algeria, *stored wheat from silos

incidence: 9/24*, conc. range: 3.15–5.7 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.76 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 7 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₁ and AFG₁)

incidence: 3/35*, conc. range: >5 –6.4 $\mu\text{g}/\text{kg}$, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 9/9*, conc. range: 17.10–20.53 $\mu\text{g}/\text{kg}$, \emptyset conc.: 19.00 $\mu\text{g}/\text{kg}$, sample year: 2004/2005, country: Nigeria¹⁴⁷⁹, *sa from markets

incidence: 3/15, conc. range: 0.42–1.89 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1.14 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Malaysia¹⁶²⁵, sa from India

AFLATOXIN B₂

incidence: 1/26, conc.: 101.6 $\mu\text{g}/\text{kg}$, sample year: 1978/1979, country: Egypt¹⁴⁴ (1 sa co-contaminated with AFB₁ and AFB₂)

incidence: 3/21, conc. range: 6.7–26.0 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 5/41, conc. range: 0.0129–0.0364 $\mu\text{g}/\text{kg}$, sample year: 2002/2003, country: Turkey¹⁰¹⁹ (1 sa co-contaminated with AFB₁ and AFB₂, 1 sa co-contaminated with AFB₂ and AFG₁, 3 sa contaminated solely with AFB₂)

incidence: 4/46, conc. range: <LOQ–0.3 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁, 3 sa co-contaminated with AFB₁ and AFB₂)

incidence: 9/24*, conc. range: 0.89–3.99 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.2 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 7 sa co-contaminated with AFB₁ and AFB₂, 1 sa contaminated solely with AFB₂)

AFLATOXIN G₁

incidence: 15/41, conc. range: 0.021–0.4461 $\mu\text{g}/\text{kg}$, sample year: 2002/2003, country: Turkey¹⁰¹⁹ (5 sa co-contaminated with AFB₁, AFG₁, and AFG₂, 6 sa co-contaminated with AFB₁ and AFG₁, 1 sa co-contaminated with AFB₂ and AFG₁, 3 sa contaminated solely with AFG₁)

incidence: 1/46, conc.: 0.13 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Tunisia¹⁰⁹⁹ (1 sa co-contaminated with AFB₁, AFB₂, and AFG₁)

incidence: 4/24*, conc. range: 2.0–5.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.35 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFG₁, AFG₂ and OTA, 1 sa co-contaminated with AFB₁ and AFG₁, 1 sa co-contaminated with AFG₁ and AFG₂, 1 sa co-contaminated with AFG₁ and OTA)

AFLATOXIN G₂

incidence: 5/41, conc. range: 0.0272–0.1287 $\mu\text{g}/\text{kg}$, sample year: 2002/2003, country: Turkey¹⁰¹⁹ (5 sa co-contaminated with AFB₁, AFG₁, and AFG₂)

incidence: 4/24*, conc. range: 0.93–1.8 µg/kg, Ø conc.: 1.23 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFG₁ and AFG₂,

2 sa contaminated solely with AFG₂)

incidence: 4/34, conc. range: 5.2–8.7 µg/kg, Ø conc.: 6.6 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia

incidence: 3/26, conc. range: 76–103 µg/kg, Ø conc.: 91.7 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, NEO, and ZEA)

AFLATOXINS (B₁, B₂, G₁, G₂)

incidence: 2/6, conc. range: 0.1–5.93 µg/kg, Ø conc.: 2.97 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

incidence: 29/123* **, conc. range: 2–20 µg/kg (28 sa), >20 µg/kg (1 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac, **wheat and by-products

incidence: 1/6* **, conc.: 2.6 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 3/10, conc. range: 2.90–3.98 µg/kg, Ø conc.: 3.16 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

incidence: 15/20, conc. range: 0.2–3.2 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

AFLATOXINS

incidence: 10/30*, conc. range: 15–263 µg AFB₁/kg, 10–107 µg AFB₂/kg, 12–95 µg AFG₁/kg, 22–90 µg AFG₂/kg, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 1/209*, conc.: tr, sample year: 1989, country: Saudi Arabia⁸⁴⁹, *ncac

STERIGMATOCYSTIN

incidence: 9/50, conc. range: 0.5–25 µg/kg (5 sa), 25–200 µg/kg (4 sa), sample year: 2006, country: Latvia⁸¹

incidence: 8/20, conc. range: 0.5–25 µg/kg (2 sa), 25–200 µg/kg (6 sa), sample year: 2007, country: Latvia⁸¹

incidence: 2/30*, conc. range: 110–145 µg/kg, Ø conc.: 128 µg/kg, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 7/11* **, conc. range: tr–400 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

Aspergillus and *Penicillium* Toxins

CITRININ

incidence: 11/11* **, conc. range: tr–4,800 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

incidence: 3/27*, conc. range: 20–420 µg/kg, Ø conc.: 174.3 µg/kg, sample year: 1998, country: Bulgaria/Germany⁸²⁸, sa from Bulgaria, *BEN area (3 sa co-contaminated with CIT and OTA)

incidence: 2/11*, conc. range: <LOQ, sample year: 2005–2007, country: Czech Republic/France¹³⁴⁰, sa from Czech Republic, *bread wheat (2 sa co-contaminated with CIT and OTA)

OCHRATOXIN A

incidence: 42/110, conc. range: 11–250 µg/kg, Ø conc.: 55 µg/kg, sample year: unknown, country: Tunisia¹⁰²

incidence: 1/6, conc.: 0.1 µg/kg, sample year: 2009, country: Malaysia¹¹⁵

incidence: 9/14, conc. range: ≤1.12 µg/kg, Ø conc.: 0.43 µg/kg, sample year: unknown, country: Spain²¹⁰

incidence: 7/8*, conc. range: ≤0.24 µg/kg, Ø conc.: 0.16 µg/kg, sample year: unknown, country: Spain²¹⁰, *wheat and rice

incidence: 31/65* **, conc. range: LOD–4.9 µg/kg (29 sa), 5.0–25 µg/kg (2 sa, maximum: 9.3 µg/kg), sample year: 1992, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 1/2* **, conc.: 0.08 µg/kg, sample year: 1992, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 39/56* **, conc. range: LOD–4.9 µg/kg (38 sa), 32 µg/kg (1 sa), sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 2/3* **, conc. range: LOD–4.9 µg/kg (maximum: 1.4 µg/kg), sample year: 1993, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 43/67* **, conc. range: LOD–4.9 µg/kg (maximum: 0.5 µg/kg), sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **conventional

incidence: 2/2* **, conc. range: LOD–4.9 µg/kg (2 sa, maximum: 0.2 µg/kg), sample year: 1994, country: Denmark²⁶⁵, *dry harvest conditions, **organic

incidence: 10/51* **, conc. range: LOD–4.9 µg/kg (maximum: 0.6 µg/kg), sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 0/0* **, no sa investigated, sample year: 1995, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 21/46* **, conc. range: LOD–4.9 µg/kg (20 sa), 8.0 µg/kg (1 sa), sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 0/0* **, no sa investigated, sample year: 1996, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 24/48* **, conc. range: LOD–4.9 µg/kg (maximum: 0.4 µg/kg), sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **conventional

incidence: 1/1* **, conc.: 0.2 µg/kg sample year: 1997, country: Denmark²⁶⁵, *very dry harvest conditions, **organic

incidence: 14/47* **, conc. range: LOD–4.9 µg/kg (13 sa), 16 µg/kg (1 sa), sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **conventional

incidence: 1/3* **, conc.: 0.8 µg/kg, sample year: 1998, country: Denmark²⁶⁵, *wet harvest conditions, **organic

incidence: 6/25* **, conc. range: LOD–4.9 µg/kg (maximum: 1.1 µg/kg), sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **conventional

incidence: 1/3* **, conc.: 1.6 µg/kg, sample year: 1999, country: Denmark²⁶⁵, *average harvest conditions, **organic

incidence: 2/17*, conc. range: 28.2–30.6 µg/kg, Ø conc.: 29.4 µg/kg, sample year: unknown, country: Morocco/France/Belgium²⁶⁷, sa from Morocco, *stored wheat grain

incidence: 0/32* **, conc. range: no contamination, sample year: 1997, country: Poland⁵⁸⁷, *ncac, **conventional

incidence: 3/39* **, conc. range: 0.48–1.20 µg/kg, Ø conc.: 0.83 µg/kg**, sample year: 1997, country: Poland⁵⁸⁷, *ncac, **organic

incidence: 18/37* **, conc. range: 0.60–1,024 µg/kg, Ø conc.: 267 µg/kg**, sample year: 1998, country: Poland⁵⁸⁸, *ncac, **conventional

incidence: 8/34* **, conc. range: 0.8–1.60 µg/kg, Ø conc.: 1.17 µg/kg**, sample year: 1998, country: Poland⁵⁸⁸, *ncac, **organic

incidence: 3/36, conc. range: 0.12–0.5 µg/kg, Ø conc.: 0.29 µg/kg, sample year: 2001, country: Hungary⁵⁹³

incidence: 18/25*, conc. range: 1–5 µg/kg (9 sa), 5–20 µg/kg (6 sa), >20 µg/kg (3 sa), sample year: unknown, country: Czechoslovakia⁵⁹⁵, *ncac

incidence: 28/61* **, conc. range: 0.05–4.9 µg/kg (25 sa), 5–25 µg/kg (3 sa, maximum: 24 µg/kg), sample year: 1986, country: Denmark⁶²⁵, *average harvest climate, **conventional

incidence: 5/10* **, conc. range: 0.05–4.9 µg/kg (maximum: 4.9 µg/kg), sample

year: 1986, country: Denmark⁶²⁵, *average harvest climate, ** organic

incidence: 26/41* **, conc. range: 0.05–4.9 µg/kg (22 sa), 5–25 µg/kg (2 sa), >25 µg/kg (2 sa, maximum:

37 µg/kg), sample year: 1987, country: Denmark⁶²⁵, *very wet harvest climate, **conventional

incidence: 6/10* **, conc. range: 0.05–4.9 µg/kg (4 sa), 5.0–25 µg/kg (2 sa, maximum: 21 µg/kg), sample year: 1987, country: Denmark⁶²⁵, *very wet harvest climate, ** organic

incidence: 13/63* **, conc. range: 0.05–4.9 µg/kg (maximum: 2.6 µg/kg), sample year: 1988, country: Denmark⁶²⁵, *dry harvest climate, **conventional

incidence: 2/8* **, conc. range: 0.05–4.9 µg/kg (maximum: 1.2 µg/kg), sample year: 1988, country: Denmark⁶²⁵, *dry harvest climate, ** organic

incidence: 19/68* **, conc. range: 0.05–4.9 µg/kg (17 sa), 5–25 µg/kg (1 sa), 51 µg/kg (1 sa), sample year: 1989, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 3/17* **, conc. range: 0.05–4.9 µg/kg (maximum: 2.9 µg/kg), sample year: 1989, country: Denmark⁶²⁵, *very dry harvest climate, ** organic

incidence: 7/63* **, conc. range: 0.05–4.9 µg/kg (maximum: 4.7 µg/kg), sample year: 1990, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 7/11* **, conc. range: 0.05–4.9 µg/kg (6 sa), 36 µg/kg (1 sa), sample year: 1990, country: Denmark⁶²⁵, *very dry harvest climate, ** organic

incidence: 22/69* **, conc. range: 0.05–4.9 µg/kg (maximum: 1.7 µg/kg), sample year: 1991, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 6/16* **, conc. range: 0.05–4.9 µg/kg (5 sa), 6.8 µg/kg (1 sa), sample year: 1991, country: Denmark⁶²⁵, *very dry harvest climate, ** organic

incidence: 4/32* **, conc. range: 0.05–4.9 µg/kg (maximum: 4.0 µg/kg), sample year: 1992, country: Denmark⁶²⁵, *very dry harvest climate, **conventional

incidence: 0/1* **, conc.: no contamination, sample year: 1992, country: Denmark⁶²⁵, *very dry harvest climate, **organic

incidence: 17/45*, conc. range: 0.05–4.9 µg/kg (16 sa), 13 µg/kg (1 sa), sample year: 1986–1992, country: Denmark⁶²⁵, sa imported, *conventional

incidence: 0/0*, no sa investigated, sample year: 1986–1992, country: Denmark⁶²⁵, *organic

incidence: 3/28*, conc. range: 12–55 µg/kg, Ø conc.: 34.3 µg/kg, sample year: 1971–1975, country: Denmark/Yugoslavia⁶²⁹, sa from Yugoslavia, *EN area

incidence: 43/44*, conc. range: 0.1–11,064 µg/kg, sample year: unknown, country: Tunisia/France⁶³⁴, sa from Tunisia, *wheat and derived food

incidence: 2/8, conc. range: 1–5 µg/kg (2 sa, maximum: 2 µg/kg), sample year: 1990, country: UK⁶³⁶

incidence: 8/57*, conc. range: ≤1.7 µg/kg, Ø conc.: 0.6 µg/kg, sample year: 1997/1998, country: UK⁶³⁷, *wheat used for bread production

incidence: 2/13*, conc. range: ≤6.3 µg/kg, Ø conc.: 3.2 µg/kg, sample year: 1997/1998, country: UK⁶³⁷, *wheat used for biscuit production

incidence: 74/92*, conc. range: 0.02–160.00 µg/kg, sample year: 1999/2000, country: Croatia⁶⁵⁵, *ncac

incidence: 2/24, conc. range: 30–50 µg/kg, Ø conc.: 40 µg/kg, sample year: unknown, country: India⁶⁵⁶

incidence: 1/1*, conc.: 13.7 µg/kg, sample year: unknown, country: UK⁶⁶¹, *ncac

incidence: 2/34*, conc. range: 188–430 µg/kg, Ø conc.: 309 µg/kg, sample year: unknown, country: Italy⁶⁶⁵, *ncac

incidence: 56/383, conc. range: 0.03–0.1 µg/kg (8 sa), 0.2–1.0 µg/kg (26 sa), 1.1–2.0 µg/kg (11 sa), 2.1–2.9 µg/kg (3 sa), 3.1–4.0 µg/kg (2 sa), 4.7 µg/kg (2 sa), 5.6–31.4 µg/kg (4 sa), Ø conc.: 2.0 µg/kg, sample year: unknown, country: USA⁶⁸⁵

incidence: 14/35, conc. range: ≤0.650 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰

incidence: 2/17*, conc. range: ≤0.100 µg/kg, sample year: 1996–1998, country: Germany⁶⁹⁰, *unripe spelt wheat

incidence: 2/538*, conc. range: 15 µg/kg, Ø conc.: 15 µg/kg, sample year: 1992/1993, country: UK⁷²⁹, *ncac

incidence: 22/250*, conc. range: 1–5 µg/kg (15 sa), 5–10 µg/kg (3 sa), >10 to ≤32 µg/kg (4 sa), sample year: 1994, country: UK⁷³³, *purchased by UK millers

incidence: 0/0* **, no sa investigated, sample year: 1997, country: Germany⁷⁶⁰, *freshly harvested wheat, **conventional

incidence: 2/14* ** ***, conc. range: 0.6–0.7 µg/kg Ø conc.: 0.65 µg/kg, sample year: 1997, country: Germany⁷⁶⁰, *ncac, **freshly harvested wheat, ***organic

incidence: 0/0* **, no sa investigated, sample year: 1998, country: Germany⁷⁶⁰, *freshly harvested wheat, **conventional

incidence: 7/29* ** ***, conc. range: 0.6–0.8 µg/kg Ø conc.: 0.6 µg/kg, sample year: 1998, country: Germany⁷⁶⁰, *ncac, **freshly harvested wheat, ***organic

incidence: 15/101*, conc. range: ≤2,700 µg/kg, sample year: unknown, country: UK⁷⁶¹, *ncac

incidence: 1/4, conc.: 40 µg/kg, sample year: 1988, country: Brazil⁷⁶⁶

incidence: 1/177, conc.: 0.7 µg/kg, sample year: 1994, country: Switzerland⁷⁷⁹

incidence: 15/28, conc. range: 0.1–2 µg/kg (12 sa), >2 to ≤10 µg/kg (3 sa), sample year: unknown, country: Switzerland⁷⁷⁹, sa imported

incidence: 1/30*, conc.: pr, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

incidence: 6/10*, conc. range: 0.5–4 µg/kg, Ø conc.: 1.43 µg/kg, sample year: unknown, country: Poland⁷⁹³, *ncac (1 sa co-contaminated with DON, MON, NIV, and OTA, 1 sa co-contaminated with DON, MON, and OTA, 1 sa co-contaminated with DON, NIV, and OTA, 1 sa co-contaminated with MON, NIV, and OTA, 2 sa contaminated solely with OTA)

incidence: 9/11* **, conc. range: <50–3,500 µg/kg, Ø conc.: 962 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

incidence: 3/291* **, conc. range: tr–35 µg/kg, sample year: 1970–1971, country: USA⁸¹⁰, *ncac, **hard red winter wheat

incidence: 8/286* **, conc. range: tr–115 µg/kg, sample year: 1970–1971, country: USA⁸¹⁰, *ncac, **hard red spring wheat

incidence: 4/27*, conc. range: 0.98–31 µg/kg, sample year: 1998, country: Bulgaria/Germany⁸²⁸, sa from Bulgaria, *BEN area (3 sa co-contaminated with CIT and OTA, 1 sa contaminated solely with OTA)

incidence: 34/115, conc. range: 0.2–2.5 µg/kg, Ø conc.: 0.66 µg/kg, sample year: 2004, country: UK⁸⁴⁰

incidence: 1/209*, conc.: 1.8 µg/kg, sample year: 1989, country: Saudi Arabia⁸⁴⁹, *ncac

incidence: 8/20, conc. range: ≤1.73 µg/kg, Ø conc.: 0.42 µg/kg, sample year: unknown, country: Morocco⁸⁶⁶

incidence: 5/17, conc. range: 2.04–2.56 µg/kg, Ø conc.: 2.26 µg/kg, sample year: 2008/2009, country: Jordan⁹⁰⁸

incidence: 4/32, Ø conc.: 0.15 µg/kg, sample year: unknown, country: Lebanon⁹¹¹

incidence: 25/107, conc. range: 1 to <5 µg/kg (1 sa), 5 to <50 µg/kg (22 sa), 50 to ≤66 µg/kg (2 sa), ∅ conc.: 19.6 µg/kg, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 21/46*, conc. range: 0.11–17.7 µg/kg, sample year: 2005/2006, country: Tunisia⁹³⁹, *wheat and derived products

incidence: 1/62, conc.: 160 µg/kg, sample year: 1990–1994, country: EU¹⁰³⁴, sa from Austria

incidence: 7/70, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 1.5 µg/kg), sample year: 1990, country: EU¹⁰³⁴, sa from Norway

incidence: 5/7, conc. range: LOD/LOQ–4.9 µg/kg (4 sa), 5.1 µg/kg (1 sa), sample year: 1993, country: EU¹⁰³⁴, sa from Norway

incidence: 11/37, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 3.4 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa from Norway

incidence: 5/16, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 3.8 µg/kg), sample year: 1990, country: EU¹⁰³⁴, sa imported to Norway

incidence: 4/10, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 4.9 µg/kg), sample year: 1993, country: EU¹⁰³⁴, sa imported to Norway

incidence: 7/17, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 2.6 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa imported to Norway

incidence: 5/5, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 0.8 µg/kg), sample year: 1992, country: EU¹⁰³⁴, sa from Spain

incidence: 2/129*, conc. range: 10.0–24.9 µg/kg (maximum: 15 µg/kg), sample year: 1993, country: EU¹⁰³⁴, sa from UK, *stored wheat

incidence: 20/250*, conc. range: LOD/LOQ–4.9 µg/kg (15 sa), 5.0–9.9 µg/kg (3 sa), 10.0–24.9 µg/kg (2 sa, maximum:

31.6 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa from UK, *stored wheat

incidence: 11/18, conc. range: LOD/LOQ–4.9 µg/kg (10 sa), 12 µg/kg (1 sa), sample year: 1991, country: EU¹⁰³⁴, sa from UK

incidence: 10/30, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 1.2 µg/kg), sample year: 1992, country: EU¹⁰³⁴, sa from UK

incidence: 9/25, conc. range: LOD/LOQ–4.9 µg/kg (8 sa), 13.9 µg/kg (1 sa), sample year: 1993, country: EU¹⁰³⁴, sa from UK

incidence: 2/9, conc. range: LOD/LOQ–4.9 µg/kg (maximum: 0.2 µg/kg), sample year: 1994, country: EU¹⁰³⁴, sa from UK

incidence: 1/22*, conc.: 0.015 µg/kg, sample year: 2001, country: Slovakia/Poland¹⁰⁴⁷, sa from Poland, *ncac

incidence: 6/48*, conc. range: ≤2,940 µg/kg, sample year: 2001, country: Slovakia/Poland¹⁰⁴⁷, sa from Slovakia, *ncac

incidence: 88/199, conc. range: 0.35–980 µg/kg, sample year: 1996, country: Poland¹¹⁵⁶

incidence: 116/301, conc. range: 0.5–1,047 µg/kg, sample year: 1997, country: Poland¹¹⁵⁶

incidence: 84/268, conc. range: 0.5–850 µg/kg, sample year: 1998, country: Poland¹¹⁵⁶

incidence: 149/365, conc. range: 0.2–845 µg/kg, sample year: 1999, country: Poland¹¹⁵⁶

incidence: 31/130, conc. range: 0.5–60 µg/kg, sample year: 2000, country: Poland¹¹⁵⁶

incidence: 7/13, conc. range: 0.20–0.90 µg/kg, sample year: 2005, country: Portugal/Spain¹¹⁸¹, sa from Spain

incidence: 2/8, conc. range: 0.27–7.97 µg/kg, ∅ conc.: 4.12 µg/kg, sample year: 2005, country: Portugal/Spain¹¹⁸¹, sa from Portugal

incidence: 15/95* **, conc. range: LOD–0.9 µg/kg (13 sa), 1.0–4.9 µg/kg (2 sa), maximum: 3.9 µg/kg, sample year: unknown, country: Italy¹²⁹⁰, *ncac, **durum wheat

incidence: 6/15*, conc. range: 0.02–0.1 µg/kg (3 sa), 0.1–0.2 µg/kg (2 sa), 0.53 µg/kg (1 sa), sample year: unknown, country: Italy¹³²⁹, *conventional

incidence: 9/20*, conc. range: 0.02–0.1 µg/kg (6 sa), 0.1–0.2 µg/kg (3 sa), sample year: unknown, country: Italy¹³²⁹, *organic

incidence: 36/346, conc. range: 2–30 µg/kg (32 sa), 31–90 µg/kg (1 sa), 91–140 µg/kg (3 sa), sample year: 1972–1978, country: Yugoslavia/Sweden/USA¹³³⁹, sa from Yugoslavia

incidence: 3/11*, conc. range: 0.30–6.03 µg/kg, Ø conc.: 3.43 µg/kg, sample year: 2005–2007, country: Czech Republic/France¹³⁴⁰, sa from Czech Republic, *bread wheat (2 sa co-contaminated with CIT and OTA, 1 sa contaminated solely with OTA)

incidence: 5/20*, conc. range: tr (1 sa), 0.045–1.097 µg/kg (4 sa), sample year: 2002/2003, country: Belgium¹³⁵¹, *conventional

incidence: 11/20*, conc. range: tr (1 sa), 0.037–0.0303 µg/kg (10 sa), sample year: 2002/2003, country: Belgium¹³⁵¹, *organic

incidence: 3/24*, conc. range: 6.57–31.3 µg/kg, Ø conc.: 22.6 µg/kg, sample year: 2005, country: Romania¹³⁷⁶, *for food and feed (1 sa co-contaminated with AFB₁, AFB₂, and OTA, 1 sa co-contaminated with AFG₁, AFG₂, and OTA, 1 sa co-contaminated with AFG₁ and OTA)

incidence: 1/6* **, conc.: 2.6 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages

incidence: 1/10, conc.: 0.09 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

incidence: 2/10, conc. range: 0.08–0.12 µg/kg, Ø conc.: 0.10 µg/kg, sample year: unknown, country: China¹⁵⁵⁴

incidence: 15/57, conc. range: 0.1–5 µg/kg, sample year: 1996–1998, country: Sweden¹⁵⁶⁵

incidence: 7/26, conc. range: 8–285 µg/kg, Ø conc.: 60.7 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA, 1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA, 1 sa co-contaminated with AME, AOH, DON, ENB, FUS-X, and OTA, 1 sa co-contaminated with AME 3-AcDON, and OTA, 1 sa co-contaminated with DON, 3-AcDON, and OTA, 1 sa co-contaminated with DON, FUS-X, and OTA, 1 sa co-contaminated with DON and OTA)

incidence: 15/20, conc. range: 0.15–2.11 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

VIOMELLEIN

incidence: 7/11* **, conc. range: 300–1,800 µg/kg, Ø conc.: 962 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

VIOXANTHIN

incidence: 7/11* **, conc. range: 200–1,200 µg/kg, Ø conc.: 443 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

XANTHOMEGNIN

incidence: 7/11* **, conc. range: 120–1,100 µg/kg, Ø conc.: 390 µg/kg, sample year: unknown, country: UK⁸⁰⁷, *ncac, **moldy

Claviceps Toxins

ERGOCORNINE

incidence: 1/25*, conc.: 76 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *winter wheat (1 sa co-contaminated with DON, ERC, and HT-2)

incidence: 3/15*, conc. range: 89–354 µg/kg, Ø conc.: 213.7 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat (2 sa co-contaminated with DON,

3-AcDON + 15-AcDON, ERT, ERC, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERC, HT-2, T-2, ZEA, and α -ZEL)

ERGOTAMINE

incidence: 1/25*, conc.: 638 μ g/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *winter wheat (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, T-2, and ZEA)

incidence: 3/15*, conc. range: 88–146 μ g/kg, \emptyset conc.: 126 μ g/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat (2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, ERC, HT-2, and T-2, 1 sa co-contaminated with DON, ADON, ERT, HT-2, and T-2)

ERGOT ALKALOIDS

incidence: 10/26* **, conc. range: 150–450 μ g/kg (9 sa), 450–750 μ g/kg (1 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac, **wheat and by-products

Fusarium Toxins

BEAUVERICIN

incidence: 7/25*, conc. range: \leq 4,000 μ g/kg, \emptyset conc.: 2,000 μ g/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 6/7* **, conc. range: tr, sample year: 2001, country: Finland⁴⁵⁹, *ncac, **spring and winter wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENB, and ENB₁)

incidence: 7/7* **, conc. range: tr, sample year: 2002, country: Finland⁴⁵⁹, *ncac, **spring wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA₁, ENB,

ENB₁, and MON, 1 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 13/13* **, conc. range: 640–3,500 μ g/kg, \emptyset conc.: 2,089 μ g/kg, sample year: 1998, country: Italy/Finland⁴⁹⁶, sa from Finland, *ncac, **sa affected by head blight (8 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁, 2 sa co-contaminated with BEA, ENA₁, and ENB, 2 sa co-contaminated with BEA and ENB, 1 sa contaminated solely with BEA)

incidence: 3/21, conc. range: 2.4–61.4 μ g/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 9/21, conc. range: \leq 3,500 μ g/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 53/86* **, conc. range: 1.7–69 μ g/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **winter wheat

incidence: 11/21* **, conc. range: 0.9–13 μ g/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **preharvest winter wheat (paired sa)

incidence: 9/58* **, conc. range: $<$ 0.3–4.2 μ g/kg, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

incidence: 2/26, conc. range: 13–15 μ g/kg, \emptyset conc.: 14 μ g/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA, 1 sa co-contaminated with BEA, DON, and ENB)

DEOXYNIVALENOL

incidence: 53/84*, conc. range: \leq 202 μ g/kg, \emptyset conc.: 64 μ g/kg, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 28/46*, conc. range: tr–580 μ g/kg, \emptyset conc.: 30 μ g/kg, sample year: 1996, country: France²⁰⁴, *ncac

incidence: 62/69*, conc. range: tr–650 μ g/kg, \emptyset conc.: 80 μ g/kg, sample year: 1997, country: France²⁰⁴, *ncac

incidence: 24/27, conc. range: 5–100 µg/kg (22 sa), 100–500 µg/kg (2 sa), sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON and ZEA, 1 sa co-contaminated with DON and ZEA; no further information available)

incidence: 9/16, conc. range: ≤445 µg/kg, sample year: 2004, country: Germany²⁴⁴

incidence: 107/120*, conc. range: 7–2,788 µg/kg, Ø conc.: 461.7 µg/kg, sample year: 2003/2004, country: Argentina²⁴⁹, *freshly harvested bread wheat sa

incidence: 7/17, conc. range: ≤128 µg/kg, Ø conc.: 65.9 µg/kg, sample year: unknown, country: Morocco/France/Belgium²⁶⁷, sa from Morocco, *stored wheat grain

incidence: 21/25*, conc. range: 9–193 µg/kg, Ø conc.: 83 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 8/15*, conc. range: 15–125 µg/kg, Ø conc.: 40 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 251/251*, conc. range: 100–5,800 µg/kg, sample year: 1989, country: Russia³¹², *stored wheat

incidence: 124/214*, conc. range: 100–3,520 µg/kg, sample year: 1990, country: Russia³¹², *stored wheat

incidence: 120/159*, conc. range: 70–3,800 µg/kg, sample year: 1991, country: Russia³¹², *stored wheat

incidence: 308/311*, conc. range: 100–8,600 µg/kg, sample year: 1992, country: Russia³¹², *stored wheat

incidence: 539/543*, conc. range: 100–4,000 µg/kg, sample year: 1993, country: Russia³¹², *stored wheat

incidence: 36/154*, conc. range: 100–950 µg/kg, sample year: 1994, country: Russia³¹², *stored wheat

incidence: 8/63*, conc. range: 200–1,800 µg/kg, sample year: 1995, country: Russia³¹², *stored wheat

incidence: 7/42*, conc. range: 160–340 µg/kg, sample year: 1996, country: Russia³¹², *stored wheat

incidence: 16/56*, conc. range: 50–2,000 µg/kg, sample year: 1997, country: Russia³¹², *stored wheat

incidence: 27/68*, conc. range: 50–2,230 µg/kg, sample year: 1998, country: Russia³¹², *stored wheat

incidence: 10/40*, conc. range: 50–420 µg/kg, sample year: 2000, country: Russia³¹², *stored wheat

incidence: 49/167*, conc. range: 50–1,590 µg/kg, sample year: 2001, country: Russia³¹², *stored wheat

incidence: 3/59*, conc. range: 150–390 µg/kg, sample year: 2002, country: Russia³¹², *stored wheat

incidence: 15/57*, conc. range: 50–6,650 µg/kg, sample year: 1989, country: Russia³¹², *freshly harvested wheat

incidence: 4/57*, conc. range: 50–740 µg/kg, sample year: 1990–1991, country: Russia³¹², *freshly harvested wheat

incidence: 72/190*, conc. range: 50–5,630 µg/kg, sample year: 1992, country: Russia³¹², *freshly harvested wheat

incidence: 39/169*, conc. range: 100–3,950 µg/kg, sample year: 1993, country: Russia³¹², *freshly harvested wheat

incidence: 18/267*, conc. range: 170–1,130 µg/kg, sample year: 1994, country: Russia³¹², *freshly harvested wheat

incidence: 11/169*, conc. range: 70–700 µg/kg, sample year: 1995, country: Russia³¹², *freshly harvested wheat

incidence: 15/120*, conc. range: 60–700 µg/kg, sample year: 1996, country: Russia³¹², *freshly harvested wheat

incidence: 15/137*, conc. range: 50–1,140 µg/kg, sample year: 1997, country: Russia³¹², *freshly harvested wheat

incidence: 12/126*, conc. range: 50–1,090 µg/kg, sample year: 1998, country: Russia³¹², *freshly harvested wheat

incidence: 1/132*, conc.: 50 µg/kg, sample year: 1999, country: Russia³¹², *freshly harvested wheat

incidence: 6/222*, conc. range: 90–770 µg/kg, sample year: 2000, country: Russia³¹², *freshly harvested wheat

incidence: 12/252*, conc. range: 50–620 µg/kg, sample year: 2001, country: Russia³¹², *freshly harvested wheat

incidence: 32/44*, conc. range: 101–1,000 µg/kg (26 sa), 1001–5,000 µg/kg (6 sa), sample year: unknown, country: Portugal³¹⁵, *wheat and fruits for breakfast

incidence: 24/25*, conc. range: ≤371 µg/kg, Ø conc.: 104 µg/kg, sample year: 1993, country: Poland³²⁴, *ncac

incidence: 8/8, conc. range: 16–51,450 µg/kg, Ø conc.: 7,043.8 µg/kg, sample year: 1991, country: China³⁴² (1 sa co-contaminated DON, 3-AcDON, NIV, and ZEA, 5 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 28/28*, conc. range: 150–8,800 µg/kg, Ø conc.: 3,030 µg/kg, sample year: unknown, country: USA³⁷³, *ncac

incidence: 33/44*, conc. range: 200–30,000 µg/kg, Ø conc.: 3,476 µg/kg, sample year: 1993, country: Argentina³⁸⁹, *ncac

incidence: 88/123*, conc. range: 260–1,730 µg/kg, Ø conc.: 798.0 µg/kg, sample year: 1985, country: Argentina³⁹⁵, *ncac

incidence: 179/261*, conc. range: 50–2,400 µg/kg, Ø conc.: 480.5 µg/kg, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 23/102*, conc. range: 100–400 µg/kg, Ø conc.: 210.8 µg/kg, sample year: 1989, country: Argentina³⁹⁵, *ncac

incidence: 104/159*, conc. range: 30–672.5 µg/kg, Ø conc.: 223.0 µg/kg, sample year: 1990, country: Argentina³⁹⁵, *ncac

incidence: 47/189*, conc. range: 54–515 µg/kg, Ø conc.: 219.8 µg/kg, sample year: 1991, country: Argentina³⁹⁵, *ncac

incidence: 83/222*, conc. range: 71.5–505 µg/kg, Ø conc.: 201.3 µg/kg, sample year: 1992, country: Argentina³⁹⁵, *ncac

incidence: 1/12, conc.: 1,900 µg/kg, sample year: 1989, country: USA⁴²⁴

incidence: 5/40, conc. range: 103–287 µg/kg, sample year: unknown, country: Egypt⁴²⁷

incidence: 1/17, conc.: 50 µg/kg, sample year: unknown, country: Poland⁴³⁹

incidence: 32/40, conc. range: 300–4,500 µg/kg, Ø conc.: 1,060 µg/kg, sample year: 1993/1994, country: Argentina⁴⁴⁰

incidence: 104/150* **, conc. range: ≤11,660 µg/kg, Ø conc.: 1,540 µg/kg, sample year: 1998, country: Germany⁴⁴¹, *ncac, **conventional

incidence: 25/46* **, conc. range: ≤4,220 µg/kg, Ø conc.: 760 µg/kg, sample year: 1998, country: Germany⁴⁴¹, *ncac, **organic

incidence: 226/283*, conc. range: >10 to ≤5,175 µg/kg, Ø conc.: 100 µg/kg, sample year: 2001, country: UK⁴⁴², *ncac

incidence: 54/57* **, conc. range: 200–9,000 µg/kg, Ø conc.: 3,600 µg/kg, sample year: unknown, country: USA⁴⁴⁶, *ncac, **winter wheat

incidence: 21/81* **, conc. range: ≤9,330 µg/kg, sample year: 1991, country: USA⁴⁴⁷, *ncac, **winter and spring wheat

incidence: 2/17*, conc. range: 90–280 µg/kg, Ø conc.: 185 µg/kg, sample year: unknown, country: Japan⁴⁴⁸, *ncac

incidence: 39/78*, conc. range: ≤102 µg/kg, Ø conc.: 21 µg/kg, sample year: 1993, country: Poland⁴⁵², *ncac

incidence: 37/40, conc. range: 8–356 µg/kg, Ø conc.: 81 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 8/10, conc. range: 10–68 µg/kg, Ø conc.: 35 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵, sa from Canada, Germany, Hungary, Saudi-Arabia, and USA

incidence: 15?/18*, conc. range: tr–4,700 µg/kg, sample year: unknown, country: Japan⁴⁶¹, *ncac

incidence: 36/67*, conc. range: 30–450 µg/kg, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac

incidence: 2/2*, conc. range: 540–1,100 µg/kg, Ø conc.: 820 µg/kg, sample year: 1993, country: Norway/Germany⁴⁶⁵, sa from Norway, *ncac

incidence: 24/169*, conc. range: >20–350 µg/kg, Ø conc.: 53 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 2/10* **, conc. range: 18–95 µg/kg, Ø conc.: 56.5 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *for food and feed, **polished wheat (1 sa co-contaminated with DON, NIV and ZEA, 1 sa co-contaminated with DON and NIV)

incidence: 5/9*, conc. range: 6–173 µg/kg, Ø conc.: 41.6 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **husked wheat (3 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 19/22*, conc. range: 76–1,654 µg/kg, Ø conc.: 452.8 µg/kg, sample year: 1999, country: Netherlands⁴⁷⁴, sa from Canada, France, Germany, Netherlands, and UK, *ncac

incidence: 7/15*, conc. range: 9–309 µg/kg, Ø conc.: 59 µg/kg, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *high EC area

incidence: ?/15*, conc. range: 7–36 µg/kg, Ø conc.: 18 µg/kg, sample year: 1989,

country: Japan⁴⁹⁷, sa from China, *low EC area

incidence: 5/5*, conc. range: 343–1,051 µg/kg, Ø conc.: 514 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 5/5*, conc. range: 73–410 µg/kg, Ø conc.: 184 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *low incidence of Kashin-Beck disease

incidence: 32/199, conc. range: 20–400 µg/kg, sample year: 1980–1982, country: UK⁵⁰⁴

incidence: 23/33, conc. range: 20–1,320 µg/kg, sample year: 1980–1982, country: UK⁵⁰⁴, sa from Canada, USA, and different European countries

incidence: 11/11* **, conc. range: 15,900–39,600 µg/kg, Ø conc.: 28,190 µg/kg, sample year: 1988, country: Poland⁵¹², *ncac, ***Fusarium* damaged kernels (9 sa co-contaminated with DON and 3-AcDON, 2 sa co-contaminated solely with DON)

incidence: 10/10* **, conc. range: 400–3,600 µg/kg, Ø conc.: 1,700 µg/kg, sample year: 1988, country: Poland⁵¹², *ncac, **healthy looking kernels

incidence: 4/4* **, conc. range: 5–130 µg/kg, Ø conc.: 60 µg/kg, sample year: 1979, country: Canada⁵²¹, *ncac, **soft winter wheat

incidence: 48/49* **, conc. range: 10–3,580 µg/kg, Ø conc.: 430 µg/kg, sample year: 1980, country: Canada⁵²¹, *ncac, **soft winter wheat

incidence: 101/101* **, conc. range: 20–3,240 µg/kg, Ø conc.: 250 µg/kg, sample year: 1981, country: Canada⁵²¹, *ncac, **soft winter wheat

incidence: 128/129* **, conc. range: 30–5,670 µg/kg, Ø conc.: 750 µg/kg, sample year: 1982, country: Canada⁵²¹, *ncac, **soft winter wheat

incidence: 6/13* **, conc. range: 40–110 µg/kg, Ø conc.: 70 µg/kg, sample

year: 1983, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 19/22* **, conc. range:
10–830 µg/kg, Ø conc.: 150 µg/kg, sample
year: 1984, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 10/45* **, conc. range:
30–160 µg/kg, Ø conc.: 70 µg/kg, sample
year: 1985, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 12/25* **, conc. range: 110–
1,730 µg/kg, Ø conc.: 570 µg/kg, sample
year: 1986, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 10/24* **, conc. range: 100–
1,650 µg/kg, Ø conc.: 750 µg/kg, sample
year: 1987, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 15/28* **, conc. range: 140–
1,360 µg/kg, Ø conc.: 490 µg/kg, sample
year: 1989, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 9/28* **, conc. range: 110–
170 µg/kg, Ø conc.: 130 µg/kg, sample
year: 1990, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 14/22* **, conc. range: 130–
1,160 µg/kg, Ø conc.: 320 µg/kg, sample
year: 1991, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 9/17* **, conc. range: 120–
390 µg/kg, Ø conc.: 240 µg/kg, sample
year: 1992, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 14/15* **, conc. range: 130–
910 µg/kg, Ø conc.: 340 µg/kg, sample
year: 1993, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 13/18* **, conc. range: 110–
1,540 µg/kg, Ø conc.: 470 µg/kg, sample
year: 1994, country: Canada⁵²¹, *ncac,
**soft winter wheat

incidence: 25/49* **, conc. range:
30–1,040 µg/kg, Ø conc.: 180 µg/kg,
sample year: 1981, country: Canada⁵²¹,
*ncac, **soft spring wheat

incidence: 8/35* **, conc. range: 10–70 µg/
kg, Ø conc.: 130 µg/kg?, sample year: 1982,
country: Canada⁵²¹, *ncac, **soft spring
wheat

incidence: 2/15* **, conc. range: 50–60 µg/kg,
Ø conc.: 60 µg/kg, sample year: 1983, country:
Canada⁵²¹, *ncac, **soft spring wheat

incidence: 11/20* **, conc. range:
30–280 µg/kg, Ø conc.: 90 µg/kg, sample
year: 1984, country: Canada⁵²¹, *ncac,
**soft spring wheat

incidence: 5/14* **, conc. range:
50–260 µg/kg, Ø conc.: 110 µg/kg, sample
year: 1985, country: Canada⁵²¹, *ncac,
**soft spring wheat

incidence: 2/16* **, conc. range: 230–
1,050 µg/kg, Ø conc.: 640 µg/kg, sample
year: 1986, country: Canada⁵²¹, *ncac,
**soft spring wheat

incidence: 3/15* **, conc. range:
30–100 µg/kg, Ø conc.: 70 µg/kg, sample
year: 1987, country: Canada⁵²¹, *ncac,
**soft spring wheat

incidence: 10/29* **, conc. range:
60–240 µg/kg, Ø conc.: 150 µg/kg, sample
year: 1989, country: Canada⁵²¹, *ncac,
**soft spring wheat

incidence: 6/16* **, conc. range: 150–
1,510 µg/kg, Ø conc.: 410 µg/kg, sample
year: 1990, country: Canada⁵²¹, *ncac,
**soft spring wheat

incidence: 1/15* **, conc.: 190 µg/kg,
sample year: 1991, country: Canada⁵²¹,
*ncac, **soft spring wheat

incidence: 13/18* **, conc. range:
20–1,300 µg/kg, Ø conc.: 370 µg/kg,
sample year: 1993, country: Canada⁵²¹,
*ncac, **soft spring wheat

incidence: 2/19* **, conc. range: 20–60 µg/
kg, Ø conc.: 40 µg/kg, sample year: 1979,
country: Canada⁵²¹, *hard wheat,
**included durum, red spring wheat and
other varieties

incidence: 4/67* **, conc. range: 10–35 µg/
kg, Ø conc.: 20 µg/kg, sample year: 1980,
country: Canada⁵²¹, *hard wheat,

**included durum, red spring wheat and other varieties

incidence: 2/66* **, conc. range: 20–60 µg/kg, Ø conc.: 40 µg/kg, sample year: 1979, country: Canada⁵²¹, *hard wheat,

**included durum, red spring wheat and other varieties

incidence: 87/201* **, conc. range: 10–10,500 µg/kg, Ø conc.: 310 µg/kg, sample year: 1984, country: Canada⁵²¹,

*hard wheat, **included durum, red spring wheat and other varieties

incidence: 33/142* **, conc. range: 50–3,800 µg/kg, Ø conc.: 250 µg/kg, sample year: 1985, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 53/147* **, conc. range: 100–7,120 µg/kg, Ø conc.: 740 µg/kg, sample year: 1986, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 21/121* **, conc. range: 110–2,100 µg/kg, Ø conc.: 470 µg/kg, sample year: 1987, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 1/80* **, conc.: 190 µg/kg, sample year: 1989, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 19/97* **, conc. range: 60–3,380 µg/kg, Ø conc.: 470 µg/kg, sample year: 1991, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 17/70* **, conc. range: 70–1,170 µg/kg, Ø conc.: 310 µg/kg, sample year: 1992, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 21/91* **, conc. range: 50–2,800 µg/kg, Ø conc.: 590 µg/kg, sample year: 1993, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 8/43* **, conc. range: 60–1,800 µg/kg, Ø conc.: 580 µg/kg, sample year: 1994, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 2/6* **, conc. range: 270–480 µg/kg, Ø conc.: 380 µg/kg, sample year: 1995, country: Canada⁵²¹, *hard wheat, **included durum, red spring wheat and other varieties

incidence: 145/157* **, conc. range: >100–300 µg/kg (17 sa), >300–1,000 µg/kg (37 sa), >1,000–2,000 µg/kg (41 sa), >2,000–4,000 µg/kg (35 sa), >4,000–8,000 µg/kg (15 sa, maximum: 7,240 µg/kg), sample year: 1982, country: USA⁵²⁵, *ncac, **hard red winter wheat

incidence: 9/13*, conc. range: 30–1,280 µg/kg, Ø conc.: 513 µg/kg, sample year: 1991, country: Japan⁵²⁸, *ncac (1 sa co-contaminated with DON, FUS-X, and ZEA, 1 sa co-contaminated with DON, NIV, and 15-AcDON, 1 sa co-contaminated with DON and NIV, 3 sa co-contaminated with DON and ZEA, 3 sa contaminated solely with DON)

incidence: 32/53*, conc. range: 8–3,193 µg/kg, Ø conc.: 349.5 µg/kg, sample year: 1984, country: Norway/Japan⁵²⁹, sa from Norway, *ncac

incidence: 87/222*, Ø conc.: 488 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 3/13*, conc. range: 66–740 µg/kg, Ø conc.: 299 µg/kg, sample year: unknown, country: Japan⁵³², sa from Japan, Canada, and USA, *ncac (2 sa co-contaminated with DON and NIV, 1 sa contaminated solely with DON)

incidence: 20/31*, conc. range: 4–312 µg/kg, Ø conc.: 31 µg/kg, sample year: 1984, country: Japan⁵³³, sa from UK, *ncac (1 sa co-contaminated with DON, NIV, and ZEA, 11 sa co-contaminated with DON and NIV, 8 sa contaminated solely with DON)

incidence: 1/2*, conc.: 26 µg/kg, sample year: 1984, country: Japan⁵³³, sa from Scotland, *ncac (1 sa co-contaminated with DON and ZEA)

incidence: 18/18* **, conc. range: 704–6,920 µg/kg, Ø conc.: 3,812 µg/kg, sample year: 1984, country: Japan⁵³⁴, *ncac, **scabby wheat stored for about 4 months (11 sa co-contaminated with DON and ZEA, 7 sa co-contaminated with DON, NIV, and ZEA)

incidence: 13/13*, conc. range: 20–512 µg/kg, Ø conc.: 115 µg/kg, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (6 sa co-contaminated with DON, NIV, and ZEA, 6 sa co-contaminated with DON and NIV, 1 sa co-contaminated with DON and ZEA)

incidence: 9/10, conc. range: 25–3,475 µg/kg, Ø conc.: 1,257 µg/kg, sample year: 1980–1984, country: Japan⁵³⁷, sa from Canada, *ncac (4 sa co-contaminated with DON, NIV, and ZEA, 5 sa co-contaminated with DON and ZEA)

incidence: 3/20*, Ø conc.: 15 µg/kg, sample year: 1983, country: Japan⁵³⁸, sa from Argentina, *ncac

incidence: 3/4*, Ø conc.: 360 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa Austria/ Poland, *ncac

incidence: 1/2*, conc.: 211 µg/kg, sample year: 1983, country: Japan⁵³⁸, sa from Bulgaria, *ncac

incidence: 4/4*, Ø conc.: 4,284 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from China, *ncac

incidence: 1/2*, conc.: 86 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa France/ Poland, *ncac

incidence: 2/8*, Ø conc.: 712 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 1/1*, conc.: 9 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Greece/Poland, *ncac

incidence: 2/2*, Ø conc.: 671 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Hungary/Poland, *ncac

incidence: 1/12*, conc.: 120 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Italy, *ncac

incidence: 1/10*, conc.: 61 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 1/7*, conc.: 5 µg/kg, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 8/8* **, conc. range: 90–450 µg/kg, Ø conc.: 218 µg/kg, sample year: 1986, country: Canada⁵³⁹, *ncac, **soft white winter wheat

incidence: 3/3*, conc. range: 350–910 µg/kg, Ø conc.: 553 µg/kg, sample year: unknown, country: Canada⁵⁴⁰, *ncac

incidence: 1/6*, conc.: 1,200 µg/kg, sample year: unknown, country: Argentina⁵⁴², *ncac

incidence: 41/276*, conc. range: ≤5,500 µg/kg, sample year: 1993, country: USA⁵⁴³, *hard red winter wheat

incidence: 333/483* **, conc. range: ≤18,400 µg/kg, country: USA⁵⁴⁴, *ncac, **included hard spring, hard winter, mixed, soft winter, soft white wheat

incidence: 180/201*, conc. range: ≤18,400 µg/kg, sample year: 1993, country: USA⁵⁴⁴, *hard spring wheat

incidence: 94/194*, conc. range: ≤7,600 µg/kg, sample year: 1993, country: USA⁵⁴⁴, *hard winter wheat

incidence: 1/1*, conc.: 2,300 µg/kg, sample year: 1993, country: USA⁵⁴⁴, *mixed wheat

incidence: 50/59*, conc. range: ≤14,600 µg/kg, sample year: 1993, country: USA⁵⁴⁴, *soft winter wheat

incidence: 8/28*, conc. range: ≤700 µg/kg, sample year: 1993, country: USA⁵⁴⁴, *soft white wheat

incidence: 13/42*, conc. range: 7–309 µg/kg, Ø conc.: 94.7 µg/kg, sample year: 1985, country: Poland⁵⁴⁸, *ncac (1 sa co-contaminated with DON, NIV, and ZEA, 12 sa co-contaminated with DON and NIV)

incidence: 9/15*, conc. range: 9–1,285 µg/kg, Ø conc.: 335 µg/kg, sample year: unknown, country: Poland⁵⁴⁸, sa from different European countries, *ncac (6 sa co-contaminated with DON and NIV, 3 sa contaminated with solely DON)

incidence: 2/2*, conc. range: 36–370 µg/kg, Ø conc.: 203 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Germany, Italy, USA, and unknown origin, *conventional (1 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with ZEA)

incidence: 7/10*, conc. range: 37–340 µg/kg, Ø conc.: 175 µg/kg, sample year: 1997, country: Germany⁵⁶², sa from Germany, Italy, USA, and unknown origin, *organic

incidence: 94/140, conc. range: ≤1,800 µg/kg, Ø conc.: 180 µg/kg, sample year: 1995, country: Bulgaria/Germany⁵⁶⁴, sa from Bulgaria

incidence: 821/821*, conc. range: 210–30,400 µg/kg, sample year: unknown, country: Italy/Poland⁵⁶⁶, sa from Poland, *ncac

incidence: 75/123*, conc. range: 100–2,290 µg/kg, sample year: 1984, country: USA⁵⁶⁹

incidence: 57/124*, conc. range: 100–2,650 µg/kg, sample year: 1985, country: USA⁵⁶⁹

incidence: 82/151*, conc. range: 5–1,620 µg/kg, sample year: 1984–1994, country: Japan⁵⁷¹, *ncac (75 sa co-contamination with DON and NIV, 7 sa contaminated with solely DON)

incidence: 1/1*, conc.: 3,450 µg/kg, sample year: 1976, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)

incidence: 7/7*, conc. range: 29–1,150 µg/kg, Ø conc.: 447.9 µg/kg, sample year: 1990, country: Japan⁵⁷³, *ncac

(3 sa co-contaminated with DON, 3-AcDON, and NIV, 1 sa co-contaminated with DON, FUS-X, and NIV, 1 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 9/9*, conc. range: 523–11,700 µg/kg, Ø conc.: 2,313.9 µg/kg, sample year: 1991, country: Japan⁵⁷³, *ncac (2 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and NIV, 3 sa co-contaminated with DON, 3-AcDON, and NIV, 1 sa co-contaminated with DON, 15-AcDON, and NIV, 2 sa co-contaminated with DON and NIV)

incidence: 1/1* **, conc.: 1,820 µg/kg, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *ncac, **coarse ground wheat

incidence: 6/8, conc. range: ≤430 µg/kg, Ø conc.: 280 µg/kg, sample year: 1999, country: Germany⁵⁷⁷

incidence: 6/27*, conc. range: 20–60 µg/kg, Ø conc.: 35 µg/kg, sample year: 1990, country: Japan⁶¹⁰, *ncac (6 sa co-contaminated with DON and NIV)

incidence: 0/0* **, no sa investigated, sample year: 1997, country: Germany⁷⁶⁰, *freshly harvested wheat, **conventional

incidence: 47/47* ** ***, conc. range: <100 µg/kg (30 sa), 100–250 µg/kg (14 sa), 250–500 µg/kg (3 sa, maximum: 415 µg/kg), Ø conc.: 111 µg/kg, sample year: 1997, country: Germany⁷⁶⁰, *ncac, **freshly harvested wheat, ***organic

incidence: 0/0* **, no sa investigated, sample year: 1998, country: Germany⁷⁶⁰, *freshly harvested wheat, **conventional

incidence: 58/58* ** ***, conc. range: <100 µg/kg (7 sa), 100–250 µg/kg (25 sa), 250–500 µg/kg (21 sa), 500–1,000 µg/kg (4 sa), 1,020 µg/kg (1 sa), Ø conc.: 280 µg/kg, sample year: 1998, country: Germany⁷⁶⁰, *ncac, **freshly harvested wheat, ***organic

incidence: 2/4, conc. range: 5–50 µg/kg
(2 sa), sample year: 1998?, country:
Finland⁷⁶⁵

incidence: 1/3, conc.: 400 µg/kg, sample
year: 1990, country: Brazil⁷⁶⁶

incidence: 4/20*, conc. range: 470–590 µg/
kg, Ø conc.: 550 µg/kg, sample year: 1990,
country: Brazil⁷⁶⁷, *ncac

incidence: 31/33* **, conc. range: 120–
5,500 µg/kg, Ø conc.: 1,897 µg/kg,
country: USA⁷⁷⁰, *ncac, **scabby wheat (2
sa co-contaminated with AFB₁, DON, and
ZEA, 19 sa co-contaminated with AFB₁
and DON, 1 sa co-contaminated with
DON and ZEA, 9 sa contaminated solely
with DON)

incidence: 4/4*, conc. range: 20–49 µg/kg
(1 sa), 50–99 µg/kg (1 sa), 100–249 µg/kg
(2 sa, maximum: 110 µg/kg), sample year:
2000, country: UK⁷⁷⁴, *malting-wheat

incidence: 10/11*, conc. range: ≤215 µg/
kg, sample year: unknown, country:
France⁷⁷⁶, *conventional

incidence: 6/11*, conc. range: ≤494 µg/kg,
sample year: unknown, country: France⁷⁷⁶,
*organic

incidence: 150/177, conc. range:
≤1,000 µg/kg, sample year: 1993–1995,
country: Switzerland⁷⁷⁹

incidence: 28/28, conc. range: ≤3,100 µg/
kg, sample year: unknown, country:
Switzerland⁷⁷⁹, sa imported

incidence: 65/116* **, conc. range:
80–500 µg/kg (56 sa), 500–1,000 µg/kg
(5 sa), >1,000 µg/kg (4 sa), sample year:
1993–1995, country: Uruguay⁷⁸⁷, *ncac,
**wheat and by-products

incidence: 1/58, conc.: 310 µg/kg, sample
year: unknown, country: India⁷⁸⁸

incidence: 4/10*, conc. range: 110–950 µg/
kg, Ø conc.: 378 µg/kg, sample year:
unknown, country: Poland⁷⁹³, *ncac (1 sa
co-contaminated with DON, MON, NIV,
and OTA, 1 sa co-contaminated with
DON, MON, and OTA, 1 sa
co-contaminated with DON, NIV, and
OTA, 1 sa contaminated solely with DON)

incidence: 14/14, conc. range: 300–
2,510 µg/kg, sample year: 1986, country:
USSR⁸⁵³

incidence: 56/90, conc. range: 100–9,090 µg/
kg, sample year: 1987, country: USSR⁸⁵³

incidence: 112/120, conc. range: 170–
13,900 µg/kg, sample year: 1988, country:
USSR⁸⁵³

incidence: 13/56*, conc. range: 200**–
740 µg/kg, sample year: 2000, country:
Czech Republic⁸⁹⁸, *sa from 21 cultivars,
**LOQ

incidence: 13/55*, conc. range: 200**–
2,490 µg/kg, sample year: 2001, country:
Czech Republic⁸⁹⁸, *sa from 14 cultivars,
**LOQ

incidence: 13/95*, conc. range: 200**–
1,450 µg/kg, sample year: 2002, country:
Czech Republic⁸⁹⁸, *sa from 19 cultivars,
**LOQ

incidence: 8/39*, conc. range: 200**–
3,790 µg/kg, sample year: 2005, country:
Czech Republic⁸⁹⁸, *sa from 11 cultivars,
**LOQ

incidence: 20/100*, conc. range: 200**–
4,590 µg/kg, sample year: 2006, country:
Czech Republic⁸⁹⁸, *sa from 10 cultivars,
**LOQ

incidence: 106/139* **, conc. range: 200–
7,300 µg/kg, sample year: 2004/2006, country:
Slovakia⁹⁰⁹, *ncac, **mature wheat

incidence: 4/23, conc. range: 50–110 µg/
kg, Ø conc.: 85 µg/kg, sample year: 1999,
country: Ethiopia/Germany⁹¹⁹, sa from
Ethiopia

incidence: 23/23, conc. range: 203–
4,130 µg/kg, Ø conc.: 1,500 µg/kg, sample
year: 2005, country: Austria⁹³³,
sa from Austria, Germany, and Slovakia
(23 sa co-contaminated with DON and
DON3G)

incidence: 2/4*, conc. range: 630–1,840 µg/
kg, sample year: 2004, Ø conc.: 1,235 µg/
kg, country: Serbia⁹³⁷, *ncac

incidence: 4/12*, conc. range: 57–423 µg/
kg, sample year: 2005, Ø conc.: 182 µg/kg,
country: Serbia⁹³⁷, *ncac

incidence: 24/41, conc. range: 14.3–353.6 µg/kg, Ø conc.: 55.9 µg/kg, sample year: 2007/2008, country: Korea⁹³⁸

incidence: 9/27, conc. range: 200–800 µg/kg, sample year: 1996, country: Bulgaria⁹⁷⁹

incidence: 4/21, conc. range: 200–700 µg/kg, sample year: 1997, country: Bulgaria⁹⁷⁹

incidence: 6/28, conc. range: 300–800 µg/kg, sample year: 1998, country: Bulgaria⁹⁷⁹

incidence: 3/25, conc. range: 200–300 µg/kg, sample year: 1999, country: Bulgaria⁹⁷⁹

incidence: 11/32, conc. range: 200–1,000 µg/kg, sample year: 2000, country: Bulgaria⁹⁷⁹

incidence: 10/30, conc. range: 200–1,500 µg/kg, sample year: 2001, country: Bulgaria⁹⁷⁹

incidence: 56/82*, conc. range: 105–303 µg/kg, sample year: 2004, country: Kenya/Germany⁹⁸⁴, sa from Kenya, *ncac

incidence: 37/44*, conc. range: 5–137 µg/kg, Ø conc.: 42.68 µg/kg, sample year: unknown, country: Japan/Bulgaria⁹⁹², sa from Bulgaria, *bread wheat (4 sa co-contaminated with DON and NIV, 33 sa contaminated solely with DON)

incidence: 42/42*, conc. range: 250–3,500 µg/kg, Ø conc.: 330 µg/kg, sample year: 2003, country: Czech Republic¹⁰¹², *winter wheat

incidence: 13/14* **, conc. range: 70–11,900 µg/kg, Ø conc.: 6,159.2 µg/kg, country: USA¹⁰¹⁸, *ncac, **bulk sa

incidence: 13/14* **, conc. range: 220–11,600 µg/kg, Ø conc.: 6,011.5 µg/kg, country: USA¹⁰¹⁸, *ncac, **substream sa

incidence: 21/30*, conc. range: 155.3–9,906.0 µg/kg, Ø conc.: 2,027.5 µg/kg, sample year: 2006–2008, country: Brazil/Japan¹⁰²⁸, sa from Brazil, *ncac

incidence: 15/19* **, conc. range: 300–70,000 µg/kg, Ø conc.: 9,873.3 µg/kg, country: Argentina/Italy¹⁰²⁹, sa from Argentina, *ncac, **affected by head blight

incidence: 54/65*, conc. range: 7,200–54,000 µg/kg, country: Tunisia¹⁰⁴², *durum wheat

incidence: 7/22*, conc. range: <100 µg/kg (1 sa), ≥100–970 µg/kg (6 sa), sample year: 2001, country: Slovakia/Poland¹⁰⁴⁷, sa from Poland, *ncac

incidence: 13/48*, conc. range: ≥100–2,770 µg/kg, sample year: 2001, country: Slovakia/Poland¹⁰⁴⁷, sa from Slovakia, *ncac

incidence: 6/14, conc. range: ≤355 µg/kg, sample year: unknown, country: Italy¹⁰⁵⁵ (1 sa co-contaminated with DAS, DON, and T-2, 1 sa co-contaminated with DON and FUS-X, 1 sa co-contaminated with DON and T-2, 3 sa contaminated solely with DON)

incidence: 1,397/1,624, conc. range: ≤20,333 µg/kg, sample year: 2001–2005, country: UK¹⁰⁶⁷

incidence: 15/19* **, conc. range: 300–70,000 µg/kg, sample year: 2000–2002, country: Argentina/Italy¹⁰⁸⁶, sa from Argentina, *ncac, **affected by head-blight (2 sa co-contaminated with DON and NIV, 13 sa contaminated solely with DON)

incidence: 15/23*, conc. range: ≤142 µg/kg, Ø conc.: 29 µg/kg, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac

incidence: 52/52, conc. range: ≤235 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 48/48*, conc. range: 17.0–2,265.2 µg/kg, Ø conc.: 252.3 µg/kg, sample year: 1999, country: Czech Republic¹¹²⁷, *ncac

incidence: 43/47*, conc. range: 22.8–804.9 µg/kg, Ø conc.: 74.1 µg/kg, sample year: 2000, country: Czech Republic¹¹²⁷, *ncac

incidence: 44/55*, conc. range: 18.6–721.9 µg/kg, Ø conc.: 77.4 µg/kg, sample year: 2001, country: Czech Republic¹¹²⁷, *ncac

incidence: 40?/41*, conc. range: 6.8–702.0 µg/kg, Ø conc.: 99.3 µg/kg, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, and T-2, 4 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, and NIV, 1 sa co-contaminated with DON, HT-2, and T-2, 8 sa co-contaminated with DON, NIV, and T-2, 1 sa co-contaminated with DON and 3-AcDON + 15-AcDON, 21 sa co-contaminated with DON and NIV, 1 sa co-contaminated with DON and T-2, 3 sa contaminated solely with DON)

incidence: 6/9* **, conc. range: 100–1,000 µg/kg, sample year: 2003, country: Netherlands¹¹⁵¹, *winter wheat, **conventional

incidence: 0/9* **, conc. range: no contamination, sample year: 2003, country: Netherlands¹¹⁵¹, *winter wheat, **organic

incidence: 9/14* **, conc. range: 100–400 µg/kg, sample year: 2004 (until 24 August), country: Netherlands¹¹⁵¹, *winter wheat, **conventional

incidence: 0/0* **, no sa investigated, sample year: 2004 (until 24 August), country: Netherlands¹¹⁵¹, *winter wheat, **organic

incidence: 8/11* **, conc. range: 100–1,500 µg/kg, sample year: 2004 (until 24 August), country: Netherlands¹¹⁵¹, *summer wheat, **conventional

incidence: 5/7* **, conc. range: 100–1,800 µg/kg, sample year: 2004 (until 24 August), country: Netherlands¹¹⁵¹, *summer wheat, **organic

incidence: 6/6* **, conc. range: 500–6,300 µg/kg, sample year: 2004 (after 24 August), country: Netherlands¹¹⁵¹, *summer wheat, **conventional

incidence: 15/15* **, conc. range: 100–11,000 µg/kg, sample year: 2004 (after 24 August), country: Netherlands¹¹⁵¹, *summer wheat, **organic

incidence: 2/2, conc. range: 63–118 µg/kg, Ø conc.: 91 µg/kg, sample year: 2004, country: UK¹¹⁶⁴

incidence: 12/12, conc. range: 22–481 µg/kg, Ø conc.: 140 µg/kg, sample year: 2004, country: UK¹¹⁶⁴

incidence: 15/15, conc. range: 16–113 µg/kg, Ø conc.: 45 µg/kg, sample year: 2004, country: UK¹¹⁶⁴

incidence: 6/6, conc. range: 208–382 µg/kg, Ø conc.: 292 µg/kg, sample year: 2004, country: UK¹¹⁶⁴

incidence: 22/40*, conc. range: ≤3,040 µg/kg, Ø conc.: 972.7 µg/kg, sample year: unknown, country: Argentina¹²¹³, *durum wheat

incidence: 47/60*, conc. range: ≤8,440 µg/kg, Ø conc.: 2,074.5 µg/kg, sample year: unknown, country: Argentina¹²¹³, *durum wheat

incidence: 10/57*, conc. range: 3.3–17.3 µg/kg, Ø conc.: 7.7 µg/kg, sample year: 2005/2006, country: Italy¹²²⁰, *ground durum wheat

incidence: 30/31, conc. range: 177–14,000 µg/kg, Ø conc.: 2,850 µg/kg, sample year: 1998, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode

incidence: 29/34, conc. range: 94–941 µg/kg, Ø conc.: 294 µg/kg, sample year: 1999, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode

incidence: 25/28, conc. range: 53–1,240 µg/kg, Ø conc.: 223 µg/kg, sample year: 1998, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode

incidence: 46/47* **, conc. range: tr–242 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed, **winter wheat

incidence: 15/15* **, conc. range: tr–642 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed, **spring wheat

incidence: 83/88*, conc. range: tr–1,121 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed

incidence: 3/63, conc. range: 50–280 µg/kg, Ø conc.: 140 µg/kg, sample year: 2000, country: Germany¹²⁶⁵

incidence: 13/59, conc. range: 50–1,350 µg/kg, Ø conc.: 290 µg/kg, sample year: 2001, country: Germany¹²⁶⁵

incidence: 37/60, conc. range: 50–4,870 µg/kg, Ø conc.: 410 µg/kg, sample year: 2002, country: Germany¹²⁶⁵

incidence: 9/56, conc. range: 60–540 µg/kg, Ø conc.: 140 µg/kg, sample year: 2003, country: Germany¹²⁶⁵

incidence: 239/638, conc. range: 50 to <500 µg/kg (212 sa), 500 to <1,000 µg/kg (19 sa), 1,000 to <2,000 µg/kg (7 sa), >2,000 µg/kg (1 sa), sample year: 2002–2004, country: Japan¹²⁹⁴, sa from Japan and imported

incidence: 24/41, Ø conc.: 56 µg/kg, sample year 2005–2008, country: Korea¹³⁰³

incidence: 25/26* **, conc. range: 2–1,800 µg/kg, Ø conc.: 278.3 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (6 sa co-contaminated with DON, NIV, and ZEA, 9 sa co-contaminated with DON and NIV, 6 sa co-contaminated with DON and ZEA, 4 sa contaminated solely with DON)

incidence: 14/20* ** ***, conc. range: 11–997 µg/kg, Ø conc.: 237.4 µg/kg, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, *ncac, **winter and spring wheat, ***conventional (1 sa co-contaminated with DON, 3-AcDON, HT-2, and NIV, 2 sa co-contaminated with DON, 3-AcDON, and NIV, 2 sa co-contaminated with DON, HT-2, and NIV, 2 sa co-contaminated with

DON and HT-2, 3 sa co-contaminated with DON and NIV, 4 sa contaminated solely with DON)

incidence: 5/12* ** ***, conc. range: 7–380 µg/kg, Ø conc.: 95 µg/kg, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, * ncac, **winter and spring wheat, ***organic

incidence: 15/15*, conc. range: ≤219.1 µg/kg, sample year: unknown, country: Italy¹³²⁹, *conventional

incidence: 5/20*, conc. range: ≤17.1 µg/kg, sample year: unknown, country: Italy¹³²⁹, *organic

incidence: 20/20*, conc. range: tr (2 sa), 100–250 µg/kg (6 sa), 250.1–500 µg/kg (4 sa), 500.1–750 µg/kg (1 sa), 750.1–1,250 µg/kg (4 sa), 1,250.1–1,750 µg/kg (1 sa), >1,750 µg/kg (2 sa, maximum: 2,842 µg/kg), sample year: 2002, country:

Belgium¹³⁵¹, *conventional

incidence: 24/25*, conc. range: tr (7 sa), 100–250 µg/kg (8 sa), 250.1–500 µg/kg (5 sa), 500.1–750 µg/kg (1 sa), 750.1–1,250 µg/kg (3 sa, maximum: 1,184 µg/kg), sample year: 2003, country: Belgium¹³⁵¹, *organic

incidence: 22/22*, conc. range: tr (3 sa), 79–250 µg/kg (8 sa), 250.1–500 µg/kg (9 sa), 500.1–750 µg/kg (1 sa), 1,503 µg/kg (1 sa), sample year: 2002, country: Belgium¹³⁵¹, *conventional

incidence: 25/26*, conc. range: tr (6 sa), 10–250 µg/kg (19 sa, maximum: 226 µg/kg), sample year: 2002, country: Belgium¹³⁵¹, *organic

incidence: 12/15* **, conc. range: 100–10,300 µg/kg, Ø conc.: 4,216.6 µg/kg, sample year: unknown, country: USA¹³⁹⁰, * ncac, **selected hard red winter wheat (7 sa co-contaminated with DON and DON3G, 5 sa contaminated solely with DON)

incidence: 18/28* **, conc. range: 200–10,000 µg/kg, Ø conc.: 2,188.9 µg/kg, sample year: unknown, country: USA¹³⁹⁰, * ncac, **randomly selected hard red

winter wheat (4 sa co-contaminated with DON and DON3G, 14 sa contaminated solely with DON)

incidence: 1/1* **, conc.: 287 µg/kg, sample year: unknown, country:

Austria¹⁴⁰⁴, *ncac, **durum wheat

incidence: 3/10, conc. range: 48.85–82.73 µg/kg, Ø conc.: 65.79 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

incidence: 14/35*, conc. range: >1,750–3,600 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring wheat, **conventional

incidence: 3/3* **, conc. range: 184.80–212.50 µg/kg, Ø conc.: 197.47 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring wheat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring wheat, **conventional

incidence: 3/3* **, conc. range: 191.30–204.00 µg/kg, Ø conc.: 196.40 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring wheat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *winter wheat, **conventional

incidence: 10/10* **, conc. range: 114.70–454.30 µg/kg, Ø conc.: 224.47 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter wheat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter wheat, **conventional

incidence: 10/10* **, conc. range: 107.00–175.10 µg/kg, Ø conc.: 136.16 µg/kg, sample year: 2006, country: Lithuania/

Denmark¹⁴⁴², sa from Lithuania, *winter wheat, **organic

incidence: 1/1*, conc.: 168 µg/kg, sample year: 1984, country: Japan¹⁴⁴³, *please see also **Flour (wheat) 1st–3rd break flour, Deoxynivalenol**, no¹⁴⁴³, as well as **Flour (wheat) 1st–3rd middling flour, Deoxynivalenol**, no¹⁴⁴³

incidence: 5/5, conc. range: 15–2,300 µg/kg, Ø conc.: 935.8 µg/kg, sample year: unknown, country: Japan/UK¹⁴⁴⁵, sa from Japan (1 sa co-contaminated with DON, HT-2, T-2, and ZEA, 3 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with DON)

incidence: 18/18*, conc. range: 880–5,340 µg/kg, Ø conc.: 2,564 µg/kg, sample year: 1996, country: Canada¹⁴⁵⁰, *wheat for loaf breads, frozen dough, flat breads, oriental noodles, and pasta products

incidence: 5/6*, conc. range: ≤150 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, T-2, ZEA, ZEA4S, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, HT-2, T-2, ZEA, and α-ZEL,

1 sa co-contaminated with DON, DON3G, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, DON3G, ZEA, and ZEA4G)

incidence: 10/10*, conc. range: 13,400–52,700 µg/kg, Ø conc.: 30,800 µg/kg, sample year: 2009, country: Poland/Austria¹⁴⁶⁸, sa from Poland, *ncac (10 sa co-contaminated with DON and DON3G)

incidence: 25/25*, conc. range: 111–3,402 µg/kg, Ø conc.: 1,127.6 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *winter wheat (1 sa co-contaminated with DON, ADON, ERT, HT-2, T-2, and ZEA, 2 sa co-contaminated with DON, ADON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, ADON, T-2, and ZEA, 1 sa

co-contaminated with DON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, ADON, and T-2, 4 sa co-contaminated with DON, ADON, and ZEA, 3 sa co-contaminated with DON, HT-2, and T-2, 1 sa co-contaminated with DON, HT-2, and ZEA, 1 sa co-contaminated with DON, ERC, and HT-2, 2 sa co-contaminated with DON, T-2, and ZEA, 1 sa co-contaminated with DON and ADON, 1 sa co-contaminated with DON and HT-2, 5 sa co-contaminated with DON and ZEA, 1 sa contaminated solely with DON)

incidence: 15/15*, conc. range: 54–8,792 µg/kg, Ø conc.: 4,336.7 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat (2 sa co-contaminated with DON, ADON, ERT, ERC, HT-2, and T-2, 1 sa co-contaminated with DON, ADON, ERC, HT-2, T-2, ZEA, and α-ZEL, 3 sa co-contaminated with DON, ADON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, ADON, ERT, HT-2, and T-2, 6 sa co-contaminated with DON, ADON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, ADON, HT-2, T-2, and α-ZEL, 1 sa co-contaminated with DON, ADON, HT-2, and T-2)

incidence: 57/86* **, conc. range: 25–2,524 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **winter wheat

incidence: 15/21* **, conc. range: 18–691 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **preharvest winter wheat (paired sa)

incidence: 41/58* **, conc. range: <20–2,064 µg/kg, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

incidence: 17/40, conc. range: ≤95.7 µg/kg, Ø conc.: 41.2 µg/kg, sample year: 2008, country: Romania¹⁵²⁵

incidence: 3/4*, conc. range: 31–534 µg/kg, Ø conc.: 218.6 µg/kg, sample year:

unknown, country: China/Belgium¹⁵⁴⁴, *ncac

incidence: 4/4* **, conc. range: 97–215 µg/kg, Ø conc.: 159 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac, **wheat kernels and whole wheat (4 sa co-contaminated with DON and DON3G)

incidence: 1/1*, conc.: 603 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac (1 sa co-contaminated with DON and DON3G)

incidence: 24/53*, conc. range: 430–9,500 µg/kg, Ø conc.: 2,704.2 µg/kg, sample year: 2006, country: Argentina/Italia¹⁵⁷³, sa from Argentina, *moldy wheat

incidence: 24/28*, conc. range: 52–3,306 µg/kg, Ø conc.: 605.52 µg/kg, sample year: 2005, country: Serbia¹⁵⁸², *winter wheat

incidence: 70/75*, conc. range: 50–1,090 µg/kg, Ø conc.: 282.84 µg/kg, sample year: 2007, country: Serbia¹⁵⁸², *winter wheat

incidence: 46/114*, conc. range: 100–7,900 µg/kg, Ø conc.: 1,141 µg/kg, sample year: 2000–2002, country: Canada¹⁶⁴⁵, *western red spring wheat

incidence: 33/78*, conc. range: 100–4,200 µg/kg, Ø conc.: 1,045 µg/kg, sample year: 2000–2002, country: Canada¹⁶⁴⁵, *western amber durum wheat

incidence: 18/26, conc. range: 25–1,310 µg/kg, Ø conc.: 353 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, NEO, and ZEA, 1 sa co-contaminated with AME, AOH, DON, ENB, FUS-X, and OTA, 1 sa co-contaminated with AME, DON, 3-AcDON, and ENB, 1 sa co-contaminated

with DON, 3-AcDON, ENB, and MON, 1 sa co-contaminated with BEA, DON, and ENB, 1 sa co-contaminated with DON, 3-AcDON, and ENB, 1 sa co-contaminated with DON, 3-AcDON, and OTA, 1 sa co-contaminated with DON, FUS-X, and OTA, 1 sa co-contaminated with AME and DON, 3 sa co-contaminated with DON and ENB, 1 sa co-contaminated with DON and OTA, 3 sa contaminated solely with DON)

incidence: 10/20, conc. range: 22.8–112.5 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

3-ACETYLDEOXYNIVALENOL

incidence: 1/27, conc. range: 5–100 µg/kg, sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON and ZEA)

incidence: 26/120*, conc. range: 14–43 µg/kg, Ø conc.: 20.4 µg/kg, sample year: 2003/2004, country: Argentina²⁴⁹, *freshly harvested bread wheat sa

incidence: 1/8, conc.: 2,544 µg/kg, sample year: 1991, country: China³⁴² (1 sa co-contaminated DON, 3-AcDON, NIV, and ZEA)

incidence: 14/261*, Ø conc.: 760.4 µg/kg, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 2/102*, Ø conc.: 792.5 µg/kg, sample year: 1989, country: Argentina³⁹⁵, *ncac

incidence: 6/189*, Ø conc.: 147.2 µg/kg, sample year: 1991, country: Argentina³⁹⁵, *ncac

incidence: 9/40, conc. range: 12–67 µg/kg, Ø conc.: 31 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 5/5*, conc. range: 15–731 µg/kg, Ø conc.: 363 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 9/11* **, conc. range: 300–3,000 µg/kg, Ø conc.: 1,420 µg/kg, sample year: 1988, country: Poland⁵¹², *ncac,

***Fusarium* damaged kernels

(9 sa co-contaminated with DON and 3-AcDON)

incidence: 3/140, conc. range: ≤104 µg/kg, Ø conc.: 70 µg/kg, sample year: 1995, country: Bulgaria/Germany⁵⁶⁴, sa from Bulgaria

incidence: 657/821* **, conc. range: 540–29,540 µg/kg, sample year: unknown, country: Italy/Poland⁵⁶⁶, sa from Poland, *ncac

incidence: 1/1*, conc.: 281 µg/kg, sample year: 1976, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)

incidence: 3/7*, conc. range: tr–41 µg/kg, sample year: 1990, country: Japan⁵⁷³, *ncac (3 sa co-contaminated with DON, 3-AcDON, and NIV)

incidence: 6/9*, conc. range: tr–920 µg/kg, sample year: 1991, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and NIV, 2 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA, 3 sa co-contaminated with DON, 3-AcDON, and NIV)

incidence: 0/11*, conc. range: no contamination, sample year: unknown, country: France⁷⁷⁶, *conventional

incidence: 1/11*, conc.: 17 µg/kg, sample year: unknown, country: France⁷⁷⁶, *organic

incidence: 7/23, conc. range: pr, sample year: 2005, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 20/1,624, conc. range: ≤44 µg/kg, sample year: 2001–2005, country: UK¹⁰⁶⁷

incidence: 35/52, conc. range: ≤3.8 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 3/20* ** ***, conc. range: 18–37 µg/kg, Ø conc.: 24.7 µg/kg, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, *ncac, **winter and spring wheat, ***conventional (1 sa

co-contaminated with DON, 3-AcDON, HT-2, and NIV, 2 sa co-contaminated with DON, 3-AcDON, and NIV)

incidence: 1/12* **, conc.: 181 µg/kg, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, * ncac, **winter and spring wheat, ***organic

incidence: 3/6*, conc. range: ≤17 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, T-2, ZEA, ZEA4S, and β-ZEL, 1 sa co-contaminated with 3-AcDON, HT-2, T-2, ZEA4G, ZEA4S, and α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, HT-2, T-2, ZEA, and α-ZEL)

incidence: 9/26, conc. range: 80–1,445 µg/kg, Ø conc.: 534 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA, 1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, NEO, and ZEA, 1 sa co-contaminated with AME, DON, 3-AcDON, and ENB, 1 sa co-contaminated with DON, 3-AcDON, ENB, and MON, 1 sa co-contaminated with AME, 3-AcDON, and OTA, 1 sa co-contaminated with DON, 3-AcDON, and ENB, 1 sa co-contaminated with DON, 3-AcDON, and OTA)

15-ACETYLDEOXYNIVALENOL

incidence: 2/283*, conc. range: 14–22 µg/kg, Ø conc.: 18 µg/kg, sample year: 2001, country: UK⁴⁴², *ncac

incidence: 1/13*, conc.: 130 µg/kg, sample year: 1991, country: Japan⁵²⁸, *ncac (1 sa co-contaminated with DON, 15-AcDON, and NIV)

incidence: 1/140, conc.: 99 µg/kg, sample year: 1995, country: Bulgaria/Germany⁵⁶⁴, sa from Bulgaria

incidence: 2/9*, conc. range: tr–10 µg/kg, sample year: 1991, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, and NIV, 1 sa co-contaminated with DON, 15-AcDON, and NIV)

incidence: 15/23, conc. range: pr, sample year: 2005, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 44/1,624, conc. range: ≤217 µg/kg, sample year: 2001–2005, country: UK¹⁰⁶⁷

incidence: 37/52, conc. range: ≤6.1 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 20/31, conc. range: 59–1,800 µg/kg, Ø conc.: 365 µg/kg, sample year: 1998, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode

incidence: 1/6*, conc.: <LOQ, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, T-2, ZEA, ZEA4S, and β-ZEL)

3-ACETYLDEOXYNIVALENOL + 15-ACETYLDEOXYNIVALENOL

incidence: 3/41*, conc. range: 12.6–26.6 µg/kg, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, and NIV, 1 sa co-contaminated with DON and 3-AcDON + 15-AcDON)

incidence: 10/25*, conc. range: 20–45 µg/kg, Ø conc.: 26.8 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *winter wheat (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, T-2, and ZEA, 2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, T-2, and ZEA, 1 sa co-contaminated with DON,

3-AcDON + 15-AcDON, and T-2, 4 sa co-contaminated with DON,
3-AcDON + 15-AcDON, and ZEA, 1 sa co-contaminated with DON and 3-AcDON + 15-AcDON)

incidence: 15/15*, conc. range: 31–80 µg/kg, Ø conc.: 50.1 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat (2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, ERC, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERC, HT-2, T-2, ZEA, and α-ZEL, 3 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, and T-2, 6 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, and T-2)

ACETYLDEOXYNIVALENOL

incidence: 12/25*, conc. range: ≤38 µg/kg, Ø conc.: 16 µg/kg, sample year: 1993, country: Poland³²⁴, *ncac

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 23/23, conc. range: 76–1,070 µg/kg, Ø conc.: 393 µg/kg, sample year: 2005, country: Austria⁹³³, sa from Austria, Germany, and Slovakia (23 sa co-contaminated with DON and DON3G)

incidence: 10/15* **, conc. range: 300–27,400 µg/kg, Ø conc.: 5,730 µg/kg, sample year: unknown, country: USA¹³⁹⁰, *ncac, **selected hard red winter wheat (7 sa co-contaminated with DON and DON3G, 3 sa contaminated solely with DON3G)

incidence: 6/28* **, conc. range: 100–5,400 µg/kg, Ø conc.: 1,083.3 µg/kg, sample year: unknown, country: USA¹³⁹⁰, *ncac, **randomly selected hard red winter wheat (4 sa co-contamination with DON and DON3G, 2 sa contaminated solely with DON3G)

incidence: 2/6*, conc. range: 18 µg/kg, Ø conc.: 18 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, DON3G, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, DON3G, ZEA, and ZEA4G)

incidence: 10/10*, conc. range: 1,600–7,400 µg/kg, Ø conc.: 4,800 µg/kg, sample year: 2009, country: Poland/Austria¹⁴⁶⁸, sa from Poland, *ncac (10 sa co-contaminated with DON and DON3G)

incidence: 40/58* **, conc. range: <2.4–292 µg/kg, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

incidence: 4/4* **, conc. range: 8.0–18 µg/kg, Ø conc.: 12 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac, **wheat kernels and whole wheat (4 sa co-contaminated with DON and DON3G)

incidence: 1/1*, conc.: 74 µg/kg, sample year: 2009, country: Switzerland¹⁵⁶⁸, sa from Germany, *ncac (1 sa co-contaminated with DON and DON3G)

ENNIATIN A

incidence: 1/25*, conc.: 34 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 4/7* **, conc. range: 3–490 µg/kg, Ø conc.: 128.5 µg/kg, sample year: 2001, country: Finland¹⁴⁵⁹, *ncac, **spring and winter wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁)

incidence: 3/7* **, conc. range: tr–5 µg/kg, sample year: 2002, country: Finland¹⁴⁵⁹, *ncac, **spring wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON)

incidence: 13?/13, conc. range: $\leq 75,100 \mu\text{g}/\text{kg}$, \emptyset conc.: $48,900 \mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 23?/23*, conc. range: $\leq 121,300 \mu\text{g}/\text{kg}$, \emptyset conc.: $54,500 \mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia, *processed wheat

ENNIATIN A₁

incidence: 12?/25*, conc. range: $\leq 209 \mu\text{g}/\text{kg}$, \emptyset conc.: $105 \mu\text{g}/\text{kg}$, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 5/7* **, conc. range: tr-940 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Finland⁴⁵⁹, *ncac, **spring and winter wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

incidence: 7/7* **, conc. range: tr-15 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Finland⁴⁵⁹, *ncac, **spring wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENN A1, ENN B, and ENN B1)

incidence: 10/13* **, conc. range: tr-6,900 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Italy/Finland⁴⁹⁶, sa from Finland, *ncac, **sa affected by head blight (8 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁, 2 sa co-contaminated with BEA, ENA₁)

incidence: 13/21, conc. range: $\leq 634,850 \mu\text{g}/\text{kg}$, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

incidence: 13?/13, conc. range: $\leq 177,000 \mu\text{g}/\text{kg}$, \emptyset conc.: $90,200 \mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 23?/23*, conc. range: $\leq 369,100 \mu\text{g}/\text{kg}$, \emptyset conc.: $78,200 \mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia, *processed wheat

ENNIATIN A + ENNIATIN A₁

incidence: 49/58* **, conc. range: $< 0.3-100 \mu\text{g}/\text{kg}$, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

ENNIATIN B

incidence: 12?/25*, conc. range: $\leq 11 \mu\text{g}/\text{kg}$, \emptyset conc.: $5 \mu\text{g}/\text{kg}$, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 7/7* **, conc. range: tr-18,300 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Finland⁴⁵⁹, *ncac, **spring and winter wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with ENB and ENB₁)

incidence: 7/7* **, conc. range: 31-160 $\mu\text{g}/\text{kg}$, \emptyset conc.: $94.3 \mu\text{g}/\text{kg}$, sample year: 2002, country: Finland⁴⁵⁹, *ncac, **spring wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 12/13* **, conc. range: tr-4,800 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Italy/Finland⁴⁹⁶, sa from Finland, *ncac, **sa affected by head blight (8 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁, 2 sa co-contaminated with BEA, ENA₁, and ENB, 2 sa co-contaminated with BEA and ENB)

incidence: 13?/13, conc. range: $\leq 180,600 \mu\text{g}/\text{kg}$, \emptyset conc.: $75,300 \mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 23?/23*, conc. range: $\leq 295,000$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 51,500 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia, *processed wheat

incidence: 58/58* **, conc. range: 1.6–796 $\mu\text{g}/\text{kg}$, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

incidence: 13/26, conc. range: 2–256 $\mu\text{g}/\text{kg}$, \emptyset conc.: 74.5 $\mu\text{g}/\text{kg}$, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA, 1 sa co-contaminated with AME, AOH, DON, ENB, FUS-X, and OTA, 1 sa co-contaminated with AME, DON, 3-AcDON, and ENB, 1 sa co-contaminated with DON, 3-AcDON, ENB, and MON, 1 sa co-contaminated with BEA, DON, and ENB, 1 sa co-contaminated with DON, 3-AcDON, and ENB, 1 sa co-contaminated with ENB, MON, and ZEA, 1 sa co-contaminated with AME and ENB, 3 sa co-contaminated with DON and ENB, 1 sa co-contaminated with ENB and ZEA, 1 sa contaminated solely with ENB)

ENNIATIN B₁

incidence: 12?/25*, conc. range: ≤ 19 $\mu\text{g}/\text{kg}$, \emptyset conc.: 19 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 7/7* **, conc. range: tr–5,100 $\mu\text{g}/\text{kg}$, sample year: 2001, country: Finland⁴⁵⁹, *ncac, **spring and winter wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA, ENA₁, ENB, and ENB₁, 1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENB, and ENB₁, 1 sa co-contaminated with ENB and ENB₁)

incidence: 7/7* **, conc. range: tr–67 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Finland⁴⁵⁹, *ncac, **spring wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa

co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 8/13* **, conc. range: tr–1,900 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Italy/Finland⁴⁹⁶, sa from Finland, *ncac, **sa affected by head blight (8 sa co-contaminated with BEA, ENA₁, ENB, and ENB₁)

incidence: 13?/13, conc. range: $\leq 58,500$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 30,600 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia

incidence: 23?/23*, conc. range: $\leq 84,500$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 30,600 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Tunisia/Spain¹⁴⁶⁶, sa from Tunisia, *processed wheat

incidence: 58/58* **, conc. range: 0.7–320 $\mu\text{g}/\text{kg}$, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

FUMONISIN B₁

incidence: 9/43*, conc. range: 5–2,210 $\mu\text{g}/\text{kg}$, \emptyset conc.: 464.1 $\mu\text{g}/\text{kg}$, sample year: unknown, country: USA¹⁴⁰, *sa with kernel black point disease (3 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁ and FB₂, 5 sa contaminated solely with FB₁)

incidence: 8/17*, conc. range: 200–8,800 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,900 $\mu\text{g}/\text{kg}$, sample year: 1994–1996, country: Spain³⁵⁵, *ncac (1 sa co-contaminated with FB₁ and FB₂, 7 sa contaminated solely with FB₁)

incidence: 5/5, conc. range: 2,500–6,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,200 $\mu\text{g}/\text{kg}$, sample year: 1995–1997, country: Zimbabwe/Belgium³⁶⁵, sa from Zimbabwe

incidence: 1/13, conc.: 24,350 $\mu\text{g}/\text{kg}$, sample year: 1996/1998, country: Brazil⁹⁷⁰

incidence: 2/46, conc. range: 70–380 $\mu\text{g}/\text{kg}$, \emptyset conc.: 225.0 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Tunisia¹⁰⁹⁷

incidence: 1/47, conc.: tr, sample year: 2004/2005, country: Japan¹²¹⁶

incidence: 23/28*, conc. range: 750–5,400 µg/kg, Ø conc.: 2,079.45 µg/kg, sample year: 2005, country: Serbia¹⁵⁸², *winter wheat

incidence: 69/75*, conc. range: 750–4,900 µg/kg, Ø conc.: 918.76 µg/kg, sample year: 2007, country: Serbia¹⁵⁸², *winter wheat

incidence: 56/82*, conc. range: 15–155 µg/kg, sample year: unknown, country: Iran¹⁵⁸⁵, *stored wheat

incidence: 29/30*, conc. range: 10.5–987.2 µg/kg, Ø conc.: 193.7 µg/kg, sample year: 2007, country: Argentina¹⁶⁰⁹, *durum wheat (25 sa co-contaminated with FB₁ and FB₂, 4 contaminated solely with FB₁)

incidence: 3/20, conc. range: 42.5–69.1 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₂

incidence: 4/43*, conc. range: 2–249 µg/kg, Ø conc.: 121.25 µg/kg, sample year: unknown, country: USA¹⁴⁰, *sa with kernel black point disease (3 sa co-contaminated with FB₁, FB₂, and FB₃, 1 sa co-contaminated with FB₁ and FB₂)

incidence: 1/17*, conc.: 200 µg/kg, sample year: 1994–1996, country: Spain³⁵⁵, *ncac (1 sa co-contaminated with FB₁ and FB₂)

incidence: 2/21, conc. range: 121.0–158.0 µg/kg, Ø conc.: 139.5 µg/kg, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 1/34, conc.: 8.7 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia

incidence: 35/82*, conc. range: 12–86 µg/kg, sample year: unknown, country: Iran¹⁵⁸⁵, *stored wheat

incidence: 25/30*, conc. range: 15.9–258.5 µg/kg, Ø conc.: 66.15 µg/kg, sample year: 2007, country: Argentina¹⁶⁰⁹, *durum wheat (25 sa co-contaminated with FB₁ and FB₂)

incidence: 3/20, conc. range: 42.0–75.3 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

FUMONISIN B₃

incidence: 3/43*, conc. range: 2–163 µg/kg, Ø conc.: 85.7 µg/kg, sample year: unknown, country: USA¹⁴⁰, *sa with kernel black point disease (3 sa co-contaminated with FB₁, FB₂, and FB₃)

incidence: 26/82*, conc. range: 13–64 µg/kg, sample year: unknown, country: Iran¹⁵⁸⁵, *stored wheat

FUMONISINS (B₁, B₂, B₃)

incidence: 1/10, conc.: 80.63 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

FUSAPROLIFERIN

incidence: 4/25*, conc. range: ≤2,000 µg/kg, Ø conc.: 2,000 µg/kg, sample year: unknown, country: Morocco/Spain⁸⁸, sa from Morocco, *ncac

incidence: 3/21, conc. range: ≤6,630 µg/kg, sample year: unknown, country: Spain/Morocco¹²⁶², sa from Spain

FUSARENON-X (4-ACETYLNIVALENOL)

incidence: 3/13*, conc. range: 20 µg/kg, Ø conc.: 20 µg/kg, sample year: 1991, country: Japan⁵²⁸, *ncac (1 sa co-contaminated with DON, FUS-X, and ZEA, 2 sa co-contaminated with FUS-X and ZEA)

incidence: 1/7*, conc.: tr, sample year: 1990, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, FUS-X, and NIV)

incidence: 2/14, conc. range: ≤210 µg/kg, sample year: unknown, country: Italy¹⁰⁵⁵ (1 sa co-contaminated with DON and FUS-X, 1 sa contaminated solely with FUS-X)

incidence: 6/52, conc. range: ≤0.93 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 4/26, conc. range: 14–294 µg/kg, Ø conc.: 123 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, NEO, and

ZEA, 1 sa co-contaminated with AME, AOH, DON, ENB, FUS-X, and OTA, 1 sa co-contaminated with DON, FUS-X, and OTA)

HT-2 Toxin

incidence: 20/84*, conc. range: ≤ 110 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 34 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 27/120*, conc. range: 10–41 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 13.0 $\mu\text{g}/\text{kg}$, sample year: 2003/2004, country: Argentina²⁴⁹, *freshly harvested bread wheat sa

incidence: 18/261*, $\bar{\varnothing}$ conc.: 316.4 $\mu\text{g}/\text{kg}$, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 82/283*, conc. range: >10 to ≤ 193 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 25 $\mu\text{g}/\text{kg}$, sample year: 2001, country: UK⁴⁴², *ncac

incidence: 2/169*, conc. range: 20 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 20 $\mu\text{g}/\text{kg}$, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 10/16* **, conc. range: 60–590 $\mu\text{g}/\text{kg}$, sample year: 1986, country: Canada⁵²¹, *ncac, **durum wheat, HY-320 wheat

incidence: 14/29* **, conc. range: 80–320 $\mu\text{g}/\text{kg}$, year: 1987, country: Canada⁵²¹, *ncac, **durum wheat

incidence: 1/17* **, conc.: 100 $\mu\text{g}/\text{kg}$, sample year: 1988, country: Canada⁵²¹, *ncac, **soft winter wheat

incidence: 2/108* **, conc. range: 200–310 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 255 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Canada⁵²¹, *ncac, **western hard wheat

incidence: 0/11*, conc. range: no contamination, sample year: unknown, country: France⁷⁷⁶, *conventional

incidence: 1/11*, conc.: 456 $\mu\text{g}/\text{kg}$, sample year: unknown, country: France⁷⁷⁶, *organic

incidence: 503/1,624, conc. range: ≤ 193 $\mu\text{g}/\text{kg}$, sample year: 2001–2005, country: UK¹⁰⁶⁷

incidence: 52/52, conc. range: ≤ 5.8 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

incidence: 6/41*, conc. range: 12.7–18.3 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, and T-2, 4 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with DON, HT-2, and T-2)

incidence: 4/35, conc. range: ≤ 13 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 12 $\mu\text{g}/\text{kg}$, sample year: 2004–2007, country: UK¹¹⁶⁴

incidence: 25/57*, conc. range: 0.8–14.1 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 3.4 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Italy¹²²⁰, *ground durum wheat

incidence: 6/20* ** ***, conc. range: 4–66 $\mu\text{g}/\text{kg}$, $\bar{\varnothing}$ conc.: 17.6 $\mu\text{g}/\text{kg}$, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, *ncac, **winter and spring wheat, ***conventional (1 sa co-contaminated with DON, 3-AcDON, HT-2, and NIV, 2 sa co-contaminated with DON, HT-2, and NIV, 2 sa co-contaminated with DON and HT-2, 1 sa co-contaminated with HT-2 and NIV)

incidence: 1/12* **, conc.: 8 $\mu\text{g}/\text{kg}$, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, *ncac, **winter and spring wheat, ***organic (1 sa co-contaminated with HT-2 and NIV)

incidence: 1/10, conc.: 70.18 $\mu\text{g}/\text{kg}$, sample year: 2009, country: Malaysia¹⁴²³

incidence: 1/5, conc.: 27 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan/UK¹⁴⁴⁵, sa from Japan (1 sa co-contaminated with DON, HT-2, T-2, and ZEA)

incidence: 4/6*, conc. range: ≤ 14 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, HT-2, T-2, ZEA, and α -ZEL, 1 sa co-contaminated with DON, DON3G, HT-2, T-2, and ZEA, 1 sa co-contaminated with 3-AcDON, ZEA4G, ZEA4S, α -ZEL, and β -ZEL, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA)

incidence: 10/25*, conc. range: 15–89 µg/kg, Ø conc.: 29.8 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *winter wheat (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, T-2, and ZEA, 2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA, 3 sa co-contaminated with DON, HT-2, and T-2, 1 sa co-contaminated with DON, HT-2, and ZEA, 1 sa co-contaminated with DON, ERC, and HT-2, 1 sa co-contaminated with DON and HT-2)

incidence: 15/15*, conc. range: 28–280 µg/kg, Ø conc.: 97.5 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat (2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, ERC, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERC, HT-2, T-2, ZEA, and α-ZEL, 3 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, and T-2, 6 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, and T-2)

incidence: 4/34, conc. range: 5.35–7.1 µg/kg, Ø conc.: 5.8 µg/kg, sample year: 2009, country: Tunisia/Spain¹⁴⁸¹, sa from Tunisia

incidence: 9/86* **, conc. range: 11–33 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **winter wheat

incidence: 3/21* **, conc. range: 7.0–18 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **preharvest winter wheat (paired sa)

incidence: 10/14, conc. range: 10–71 µg/kg, Ø conc.: 23 µg/kg, sample year: unknown, country: Italy¹⁶⁴⁰ (3 sa co-contaminated with HT-2 and T-2, 7 sa

contaminated solely with HT-2)

incidence: 7/78*, conc. range: 100–200 µg/kg, Ø conc.: 128.6 µg/kg, sample year: 2000–2002, country: Canada¹⁶⁴⁵, *western amber durum wheat

incidence: 3/26, conc. range: 124–239 µg/kg, Ø conc.: 175 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, NEO, and ZEA)

incidence: 3/20, conc. range: 9.3–18.7 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

MONILIFORMIN

incidence: 7/25*, conc. range: ≤198 µg/kg, Ø conc.: 63 µg/kg, sample year: 1993, country: Poland³²⁴, *ncac

incidence: 48/78*, conc. range: ≤495 µg/kg, Ø conc.: 182 µg/kg, sample year: 1993, country: Poland⁴⁵², *ncac

incidence: 3/4* **, conc. range: 58–810 µg/kg, Ø conc.: 372.7 µg/kg, sample year: 2001, country: Finland⁴⁵⁸, *ncac, **spring wheat

incidence: 1/3* **, conc.: <20 µg/kg, sample year: 2001, country: Finland⁴⁵⁸, *ncac, **winter wheat

incidence: 4/7* **, conc. range: tr–810 µg/kg, sample year: 2001, country: Finland⁴⁵⁹, *ncac, **spring and winter wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 1 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

incidence: 6/7* **, conc. range: 30–96 µg/kg, Ø conc.: 71.5 µg/kg, sample year: 2002, country: Finland⁴⁵⁹, *ncac, **spring wheat (3 sa co-contaminated with BEA, ENA, ENA₁, ENB, ENB₁, and MON, 3 sa co-contaminated with BEA, ENA₁, ENB, ENB₁, and MON)

incidence: 5/5* **, conc. range: 7,200–25,200 µg/kg, Ø conc.: 15,900 µg/kg, sample year: 1988, country: Austria/Poland⁴⁹³, sa from Poland, *ncac, ***Fusarium* damaged kernels

incidence: 5/5* **, conc. range: 250–700 µg/kg, Ø conc.: 420 µg/kg, sample year: 1988, country: Austria/Poland⁴⁹³, sa from Poland, *ncac, **healthy looking kernels

incidence: 6/6* **, conc. range: 500–17,100 µg/kg, Ø conc.: 8,660 µg/kg, sample year: probably 1985–1989, country: UK/Poland⁵²⁴, sa from Poland, *ncac, ***Fusarium* damaged kernels

incidence: 6/13*, conc. range: tr–87 µg/kg, sample year: 2000, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 27/35*, conc. range: tr–420 µg/kg, sample year: 2001, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 30/35*, conc. range: tr–950 µg/kg, sample year: 2002, country: Norway/Austria⁵⁵⁰, *ncac, sa from Norway

incidence: 4/10*, conc. range: 2.5–200 µg/kg, Ø conc.: 128 µg/kg, sample year: unknown, country: Poland⁷⁹³, *ncac (1 sa co-contaminated with DON, MON, NIV, and OTA, 1 sa co-contaminated with DON, MON, and OTA, 1 sa co-contaminated with MON, NIV, and OTA, 1 sa co-contaminated with NIV and MON)

incidence: 13/23, conc. range: pr, sample year: 2005, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 1/3, conc.: 7.0 µg/kg, sample year: unknown, country: Germany¹⁴⁶¹

incidence: 23/86* **, conc. range: 6.8–326 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **winter wheat

incidence: 5/21* **, conc. range: 5.1–97 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **preharvest winter wheat (paired sa)

incidence: 27/58* **, conc. range: <30–224 µg/kg, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

incidence: 1/114*, conc.: 70 µg/kg, sample year: 2000–2002, country: Canada¹⁶⁴⁵, *western red spring wheat

incidence: 9/78*, conc. range: 40–130 µg/kg, Ø conc.: 73.3 µg/kg, sample year: 2000–2002, country: Canada¹⁶⁴⁵, *western amber durum wheat

incidence: 2/26, conc. range: 5–17 µg/kg, Ø conc.: 11 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with DON, 3-AcDON, ENB, and MON, 1 sa co-contaminated with ENB and MON)

NEOSOLANOL

incidence: 16/261*, Ø conc.: 172.5 µg/kg, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 27/35*, conc. range: 144.6–853.7 µg/kg, Ø conc.: 476 µg/kg, sample year: 1996, country: Iran⁵⁷⁰, *ncac

incidence: 21/52, conc. range: ≤0.15 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 3/26, conc. range: 20–51 µg/kg, Ø conc.: 33 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, NEO, and ZEA)

NIVALENOL

incidence: 1/120*, conc.: 50 µg/kg, sample year: 2003/2004, country: Argentina²⁴⁹, *freshly harvested bread wheat sa

incidence: 9/25*, conc. range: 13–50 µg/kg, Ø conc.: 29 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 3/15*, conc. range: 4–22 µg/kg, Ø conc.: 12 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

incidence: 19/25*, conc. range: ≤ 453 $\mu\text{g}/\text{kg}$, \emptyset conc.: 97 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Poland³²⁴, *ncac

incidence: 8/8, conc. range: 10–6,935 $\mu\text{g}/\text{kg}$, \emptyset conc.: 907.8 $\mu\text{g}/\text{kg}$, sample year: 1991, country: China³⁴² (1 sa co-contaminated DON, 3-AcDON, NIV, and ZEA, 5 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV)

incidence: 2/17, conc. range: 100 $\mu\text{g}/\text{kg}$, \emptyset conc.: 100 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Poland⁴³⁹

incidence: 226/283*, conc. range: > 10 to ≤ 428 $\mu\text{g}/\text{kg}$, \emptyset conc.: 42 $\mu\text{g}/\text{kg}$, sample year: 2001, country: UK⁴⁴², *ncac

incidence: 4/17*, conc. range: 20–580 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁴⁴⁸, *ncac

incidence: 23/78*, conc. range: ≤ 99 $\mu\text{g}/\text{kg}$, \emptyset conc.: 34 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Poland⁴⁵², *ncac

incidence: 15?/18*, conc. range: tr–7,800 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁴⁶¹, *ncac

incidence: 3/737*, conc. range: ≤ 54 $\mu\text{g}/\text{kg}$, \emptyset conc.: 54 $\mu\text{g}/\text{kg}$, sample year: 1988–1994, country: Norway⁴⁶⁴, *ncac

incidence: 9/10* **, conc. range: 28–632 $\mu\text{g}/\text{kg}$, \emptyset conc.: 149.9 $\mu\text{g}/\text{kg}$, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *for food and feed, **polished wheat (1 sa co-contaminated with DON, NIV and ZEA, 8 sa contaminated solely with NIV)

incidence: 9/9* **, conc. range: 82–3,169 $\mu\text{g}/\text{kg}$, \emptyset conc.: 535 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **husked wheat (3 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with DON and NIV, 2 sa co-contaminated with NIV and ZEA, 2 sa contaminated solely with NIV)

incidence: 7/15*, conc. range: 13–21 $\mu\text{g}/\text{kg}$, \emptyset conc.: 15 $\mu\text{g}/\text{kg}$, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *low EC area

incidence: 5/5*, conc. range: 17–373 $\mu\text{g}/\text{kg}$, \emptyset conc.: 183 $\mu\text{g}/\text{kg}$, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 3/5*, conc. range: 8–13 $\mu\text{g}/\text{kg}$, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *low incidence of Kashin-Beck disease

incidence: 1/29* **, conc.: 90 $\mu\text{g}/\text{kg}$, sample year: 1987, country: Canada⁵²¹, *ncac, **durum wheat

incidence: 2/6* **, conc. range: 280–740 $\mu\text{g}/\text{kg}$, \emptyset conc.: 510 $\mu\text{g}/\text{kg}$, sample year: 1990, country: Canada⁵²¹, *ncac, **Nova Scotia wheat

incidence: 6/6* **, conc. range: 130–650 $\mu\text{g}/\text{kg}$, sample year: 1990, country: Canada⁵²¹, *ncac, **Quebec hard wheat

incidence: 2/13*, conc. range: 40–1,220 $\mu\text{g}/\text{kg}$, \emptyset conc.: 630 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Japan⁵²⁸, *ncac (1 sa co-contaminated with DON, 15-AcDON, and NIV, 1 sa co-contaminated with DON and NIV)

incidence: 53/53*, conc. range: 15–887 $\mu\text{g}/\text{kg}$, \emptyset conc.: 59.2 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Norway/Japan⁵²⁹, sa from Norway, *ncac

incidence: 111/222*, \emptyset conc.: 127 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 2/13*, conc. range: 260–1,630 $\mu\text{g}/\text{kg}$, \emptyset conc.: 945 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁵³², sa from Japan, Canada, and USA, *ncac (2 sa co-contaminated with DON and NIV)

incidence: 17/31*, conc. range: 4–670 $\mu\text{g}/\text{kg}$, \emptyset conc.: 101 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³³, sa from UK, *ncac (1 sa co-contaminated with DON, NIV, and ZEA, 11 sa co-contaminated with DON and NIV, 2 sa co-contaminated with NIV and ZEA, 3 sa contaminated solely with NIV)

incidence: 7/18* **, conc. range: 47–435 $\mu\text{g}/\text{kg}$, \emptyset conc.: 205 $\mu\text{g}/\text{kg}$, sample

year: 1984, country: Japan⁵³⁴, *ncac,
**scabby wheat stored for about 4 months
(7 sa co-contaminated with DON, NIV,
and ZEA)

incidence: 12/13*, conc. range: 7–203 µg/
kg, Ø conc.: 38 µg/kg, sample year:
1984/1985, country: Japan/Netherlands⁵³⁶,
sa from Netherlands, *ncac (6 sa
co-contaminated with DON, NIV,
and ZEA, 6 sa co-contaminated with
DON and NIV)

incidence: 4/10, conc. range: 4–40 µg/kg,
Ø conc.: 23 µg/kg, sample year: 1980–
1984, country: Japan⁵³⁷, sa from Canada,
*ncac (4 sa co-contaminated with DON,
NIV, and ZEA)

incidence: 3/4*, Ø conc.: 25 µg/kg, sample
year: 1983, country: Japan⁵³⁸,
sa Austria/Poland, *ncac

incidence: 1/2*, conc.: 32 µg/kg, sample
year: 1983, country: Japan⁵³⁸,
sa from Bulgaria, *ncac

incidence: 3/4*, Ø conc.: 162 µg/kg,
sample year: 1984, country: Japan⁵³⁸, sa
from China, *ncac

incidence: 2/2*, Ø conc.: 42 µg/kg, sample
year: 1984, country: Japan⁵³⁸,
sa France/Poland, *ncac

incidence: 2/8*, Ø conc.: 274 µg/kg,
sample year: 1984, country: Japan⁵³⁸, sa
from Germany, *ncac

incidence: 1/1*, conc.: 2 µg/kg, sample
year: 1984, country: Japan⁵³⁸,
sa Greece/Poland, *ncac

incidence: 1/2*, conc.: 4 µg/kg, sample
year: 1984, country: Japan⁵³⁸,
sa Hungary/Poland, *ncac

incidence: 5/10*, Ø conc.: 70 µg/kg,
sample year: 1984, country: Japan⁵³⁸, sa
from Nepal, *ncac

incidence: 37/42*, conc. range: 3–350 µg/
kg, Ø conc.: 47.9 µg/kg, sample year: 1985,
country: Poland⁵⁴⁸, *ncac (1 sa
co-contaminated with DON, NIV and ZEA,
12 sa co-contaminated with DON and NIV,
24 sa contaminated solely with NIV)

incidence: 9/15*, conc. range: 2–60 µg/kg,
Ø conc.: 23 µg/kg, sample year: unknown,
country: Poland⁵⁴⁸, sa from different
European countries, *ncac (6 sa
co-contaminated with DON and NIV, 3 sa
contaminated solely with NIV)

incidence: 34/35*, conc. range: 49.1–
1,119.1 µg/kg, Ø conc.: 577 µg/kg, sample
year: 1996, country: Iran⁵⁷⁰, *ncac

incidence: 100/151*, conc. range:
5–4,390 µg/kg, sample year: 1984–1994,
country: Japan⁵⁷¹, *ncac (75 sa
co-contaminated with DON and NIV, 25
sa contaminated with solely NIV)

incidence: 1/1*, conc.: 3,280 µg/kg, sample
year: 1976, country: Japan⁵⁷³, *ncac (1 sa
co-contaminated with DON, 3-AcDON,
NIV, and ZEA)

incidence: 7/7*, conc. range: 10–645 µg/kg,
Ø conc.: 202 µg/kg, sample year: 1990,
country: Japan⁵⁷³, *ncac (3 sa
co-contaminated with DON, 3-AcDON,
and NIV, 1 sa co-contaminated with DON,
FUS-X, and NIV, 1 sa co-contaminated
with DON, NIV, and ZEA, 2 sa
co-contaminated with DON, and NIV)

incidence: 9/9*, conc. range: 16–4,390 µg/
kg, Ø conc.: 742.8 µg/kg, sample year:
1991, country: Japan⁵⁷³, *ncac (2 sa
co-contaminated with DON, 3-AcDON,
NIV, and ZEA, 1 sa co-contaminated with
DON, 3-AcDON, 15-AcDON, and NIV, 3 sa
co-contaminated with DON, 3-AcDON,
and NIV, 1 sa co-contaminated with DON,
15-AcDON, and NIV, 2 sa
co-contaminated with DON and NIV)

incidence: 14/27*, conc. range: 20–120 µg/
kg, Ø conc.: 52.9 µg/kg, sample year: 1990,
country: Japan⁶¹⁰, *ncac (6 sa
co-contaminated with DON and NIV, 8 sa
contaminated with solely NIV)

incidence: 3/20*, conc. range: 160–400 µg/
kg, Ø conc.: 320 µg/kg, sample year: 1990,
country: Brazil⁷⁶⁷, *ncac

incidence: 0/11*, conc. range: no
contamination, sample year: unknown,
country: France⁷⁷⁶, *conventional

incidence: 10/11*, conc. range: ≤ 98 $\mu\text{g}/\text{kg}$, sample year: unknown, country: France⁷⁷⁶, *organic

incidence: 5/10*, conc. range: 15–1,280 $\mu\text{g}/\text{kg}$, \emptyset conc.: 332 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Poland⁷⁹³, *ncac (1 sa co-contaminated with DON, MON, NIV, and OTA, 1 sa co-contaminated with DON, NIV, and OTA, 1 sa co-contaminated with MON, NIV, and OTA, 1 sa co-contaminated with MON and NIV, 1 sa contaminated solely with NIV)

incidence: 8/12, conc. range: 6.0–35.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 16.3 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan⁸⁴³, sa imported

incidence: 1/23, conc.: 40 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Ethiopia/Germany⁹¹⁹, sa from Ethiopia

incidence: 7/23, conc. range: pr, sample year: 2005, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 11/21, conc. range: 339–679 $\mu\text{g}/\text{kg}$, sample year: 2010, country: Spain⁹⁷⁴, sa from Mediterranean area

incidence: 4/44*, conc. range: tr–374 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Japan/Bulgaria⁹⁹², sa from Bulgaria, *bread wheat (4 sa co-contaminated with DON)

incidence: 2/19* **, conc. range: 50–100 $\mu\text{g}/\text{kg}$, \emptyset conc.: 75 $\mu\text{g}/\text{kg}$, country: Argentina/Italy¹⁰²⁹, sa from Argentina, *ncac, **affected by head blight

incidence: 3/14, conc. range: ≤ 189 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Italy¹⁰⁵⁵ (1 sa co-contaminated with DAS and NIV, 2 sa contaminated solely with NIV)

incidence: 1,088/1,624, conc. range: ≤ 430 $\mu\text{g}/\text{kg}$, sample year: 2001–2005, country: UK¹⁰⁶⁷

incidence: 2/19* **, conc. range: 50–100 $\mu\text{g}/\text{kg}$, \emptyset conc.: 75 $\mu\text{g}/\text{kg}$, sample year: 2000–2002, country: Argentina/Italy¹⁰⁸⁶, sa from Argentina, *ncac,

**affected by head-blight (2 sa co-contaminated with DON and NIV)

incidence: 3/23*, conc. range: ≤ 41 $\mu\text{g}/\text{kg}$, \emptyset conc.: 22 $\mu\text{g}/\text{kg}$, sample year: 1999, country: Lithuania¹⁰⁹⁶, *ncac

incidence: 40/52, conc. range: ≤ 31 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Germany¹¹²²

incidence: 32/41*, conc. range: 15.4–25.9 $\mu\text{g}/\text{kg}$, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac

(1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, NIV, and T-2, 4 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, and NIV, 8 sa co-contaminated with DON, NIV, and T-2, 21 sa co-contaminated with DON and NIV)

incidence: 15/35, conc. range: ≤ 29 $\mu\text{g}/\text{kg}$, \emptyset conc.: 17 $\mu\text{g}/\text{kg}$, sample year: 2004–2007, country: UK¹¹⁶⁴

incidence: 1/57*, conc.: 63.5 $\mu\text{g}/\text{kg}$, sample year: 2005/2006, country: Italy¹²²⁰, *ground durum wheat

incidence: 1/31, conc.: 578 $\mu\text{g}/\text{kg}$, sample year: 1998, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode

incidence: 15/26* **, conc. range: 6–96 $\mu\text{g}/\text{kg}$, \emptyset conc.: 19.7 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (6 sa co-contaminated with DON, NIV, and ZEA, 9 sa co-contaminated with DON and NIV)

incidence: 12/20* ** ***, conc. range: 7–80 $\mu\text{g}/\text{kg}$, \emptyset conc.: 34.8 $\mu\text{g}/\text{kg}$, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, *ncac, **winter and spring wheat, ***conventional (3 sa co-contaminated with DON and NIV, 1 sa co-contamination with HT-2 and NIV, 2 sa co-contaminated with DON, 3-AcDON, and NIV, 2 sa co-contaminated with DON, HT-2, and NIV, 1 sa co-contaminated with DON, 3-AcDON, HT-2, and NIV, 3 sa contaminated solely with NIV)

incidence: 2/12* **, conc. range: 13–28 µg/kg, Ø conc.: 20.5 µg/kg, sample year: 2003, country: Poland/Austria¹³²⁵, sa from Poland, *ncac, **winter and spring wheat, ***organic (1 sa co-contaminated with HT-2 and NIV, 1 sa contaminated solely with NIV)

incidence: 1/1*, conc.: 510 µg/kg, sample year: 1984, country: Japan¹⁴⁴³, *please see also **Flour (wheat) 1st–3rd break flour, Nivalenol**, no¹⁴⁴³, as well as **Flour (wheat) 1st–3rd middling flour, Nivalenol**, no¹⁴⁴³

incidence: 24/58* **, conc. range: <12–99 µg/kg, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

incidence: 10/53*, conc. range: 100–600 µg/kg, Ø conc.: 218 µg/kg, sample year: 2006, country: Argentina/Italia¹⁵⁷³, sa from Argentina, *moldy wheat

incidence: 2/26, conc. range: 25–60 µg/kg, Ø conc.: 42.5 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA, 1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA)

MONOACETOXYSCIRPENOL

incidence: 51/52, conc. range: ≤0.86 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 2/26, conc. range: 42–107 µg/kg, Ø conc.: 74.5 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁴⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, HT-2, MAS, NEO, NIV, and OTA)

DIACETOXYSCIRPENOL

incidence: 26/261*, Ø conc.: 792.5 µg/kg, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 1/4, conc.: 30 µg/kg, sample year: 1990, country: Brazil⁷⁶⁶, sa from Argentina

incidence: 1/20*, conc.: 600 µg/kg, sample year: 1990, country: Brazil⁷⁶⁷, *ncac

incidence: 3/14, conc. range: ≤180 µg/kg, sample year: unknown, country: Italy¹⁰⁵⁵ (1 sa co-contaminated with DAS, DON, and T-2, 1 sa co-contamination with DAS and NIV, 1 sa contaminated solely with DAS)

incidence: 1/52, conc.: 0.25 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

SCIRPENTRIOL

incidence: 2/248, conc. range: 10–30 µg/kg, Ø conc.: 20 µg/kg, sample year: 1996/1997, country: Poland¹¹⁸⁷

TRICHOHECENES

incidence: 23/25*, conc. range: 15–218 µg/kg, Ø conc.: 87 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 9/15*, conc. range: 15–125 µg/kg, Ø conc.: 40 µg/kg, sample year: 1995, country: China²⁸⁵, *sa from low-risk area of HEC

T-2 TOXIN

incidence: 8/84*, conc. range: ≤58 µg/kg, Ø conc.: 33 µg/kg, sample year: 1998, country: Lithuania²⁰³, *for food and feed

incidence: 20/261*, Ø conc.: 165.3 µg/kg, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 1/40, conc.: 2.9 µg/kg, sample year: unknown, country: Egypt⁴²⁷

incidence: 3/17, conc. range: 2,000–4,000 µg/kg, sample year: 1987, country: India⁴³⁰

incidence: 6/283*, conc. range: >10 to ≤21 µg/kg, Ø conc.: 16 µg/kg, sample year: 2001, country: UK⁴⁴², *ncac

incidence: 1/169*, conc.: 20 µg/kg, sample year: 1996–1998, country: Norway⁴⁶⁶, *for food and feed

incidence: 1/140, conc.: 55 µg/kg, sample year: 1995, country: Bulgaria/Germany⁵⁶⁴, sa from Bulgaria

incidence: 2/4, conc. range: 350–360 µg/kg, Ø conc.: 355 µg/kg, sample year: 1990, country: Brazil⁷⁶⁶, sa from Argentina

incidence: 2/20*, conc. range: 400–800 µg/kg, Ø conc.: 600 µg/kg, sample year: 1990, country: Brazil⁷⁶⁷, *ncac

incidence: 3/58, conc. range: 550–4,000 µg/kg, sample year: unknown, country: India⁷⁸⁸

incidence: 48/80*, conc. range: 20–66 µg/kg, sample year: 2004, country: Kenia/Germany⁹⁸⁴, sa from Kenia, *ncac

incidence: 26/292, conc. range: 0.8–2,000 µg/kg, sample year: 1980–1985, country: Japan⁹⁸³, sa from China, Finland, Germany, Italy, Korea, Nepal, Norway, Poland, Portugal, USA, and USSR; for detailed information please see the article

incidence: 264/330, conc. range: ≤1,064.4 µg/kg, sample year: unknown, country: China¹⁰⁰⁵

incidence: 42/42*, conc. range: 25–337 µg/kg, Ø conc.: 99 µg/kg, sample year: 2003, country: Czech Republic¹⁰¹², *winter wheat

incidence: 2/14, conc. range: ≤233 µg/kg, sample year: unknown, country: Italy¹⁰⁵⁵ (1 sa co-contaminated with DAS, DON, and T-2, 1 sa co-contaminated with DON)

incidence: 260/1,624, conc. range: ≤52 µg/kg, sample year: 2001–2005, country: UK¹⁰⁶⁷

incidence: 49/52, conc. range: ≤1.1 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

incidence: 16/41*, conc. range: 5.7–8.2 µg/kg, sample year: 2005, country: Czech Republic¹¹²⁷, *ncac (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, NIV, and T-2, 4 sa co-contaminated with DON, HT-2, NIV, and T-2, 1 sa

co-contaminated with DON, HT-2, and T-2, 8 sa co-contaminated with DON, NIV, and T-2, 1 sa co-contaminated with DON and T-2)

incidence: 4/35, conc. range: ≤12 µg/kg, Ø conc.: 11 µg/kg, sample year: 2004–2007, country: UK¹¹⁶⁴

incidence: 6/57*, conc. range: 0.5–1.9 µg/kg, Ø conc.: 1.3 µg/kg, sample year: 2005/2006, country: Italy¹²²⁰, *ground durum wheat

incidence: 1/10, conc.: 74.21 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *spring wheat, **conventional

incidence: 3/3* **, conc. range: 7.80–8.00 µg/kg, Ø conc.: 7.90 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring wheat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring wheat, **conventional

incidence: 2/3* **, conc. range: ≤10.10 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring wheat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², *winter wheat, **conventional

incidence: 6/6* **, conc. range: 8.50–9.20 µg/kg, Ø conc.: 8.95 µg/kg, sample year: 2005, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter wheat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter wheat, **conventional

incidence: 6/6* **, conc. range: 8.50–9.80 µg/kg, Ø conc.: 9.22 µg/kg, sample year: 2006, country: Lithuania/

Denmark¹⁴⁴², sa from Lithuania, *winter wheat, **organic

incidence: 1/5, conc.: 4 µg/kg, sample year: unknown, country: Japan/UK¹⁴⁴⁵, sa from Japan (1 sa co-contaminated with DON, HT-2, T-2, and ZEA)

incidence: 5/6*, conc. range: <LOQ, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, T-2, ZEA, ZEA4S, and β-ZEL, 1 sa co-contaminated with 3-AcDON, HT-2, T-2, ZEA4G, ZEA4S, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, DON3G, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA)

incidence: 11/25*, conc. range: <LOQ–22 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *winter wheat (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, T-2, and ZEA, 2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, and T-2, 3 sa co-contaminated with DON, HT-2, and T-2, 2 sa co-contaminated with DON, T-2, and ZEA)

incidence: 15/15*, conc. range: <LOQ–15 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat (2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, ERC, HT-2, and T-2, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERC, HT-2, T-2, ZEA, and α-ZEL, 3 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, and

T-2, 6 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and α-ZEL, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, and T-2)

incidence: 13/86* **, conc. range: 0.8–7.9 µg/kg, sample year: 2009, country:

Netherlands¹⁵⁰¹, *ncac, **winter wheat

incidence: 4/21* **, conc. range: 0.6–9.7 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **preharvest winter wheat (paired sa)

incidence: 21/28*, conc. range: 60–495 µg/kg, Ø conc.: 171.52 µg/kg, sample year: 2005, country: Serbia¹⁵⁸², *winter wheat

incidence: 45/75*, conc. range: 86–200 µg/kg, Ø conc.: 86.75 µg/kg, sample year: 2007, country: Serbia¹⁵⁸², *winter wheat

incidence: 3/14, conc. range: ≤12 µg/kg, sample year: unknown, country: Italy¹⁶⁴⁰ (3 sa co-contaminated with HT-2 and T-2)

incidence: 3/20, conc. range: 11.2–53.1 µg/kg, sample year: 2010, country: Malaysia¹⁶⁴⁸

T-2 TETRAOL

incidence: 1/4, conc.: 1,680 µg/kg, sample year: 1990, country: Brazil⁷⁶⁶, sa from Argentina

incidence: 41/52, conc. range: ≤10 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

T-2 TRIOL

incidence: 33/120*, conc. range: 21.0–123.0 µg/kg, Ø conc.: 45.9 µg/kg, sample year: 2003/2004, country: Argentina²⁴⁹, *freshly harvested bread wheat sa

incidence: 2/283*, conc. range: 13–15 µg/kg, Ø conc.: 14 µg/kg, sample year: 2001, country: UK⁴⁴², *ncac

incidence: 7/1,624, conc. range: ≤45 µg/kg, sample year: 2001–2005, country: UK¹⁰⁶⁷

incidence: 15/52, conc. range: ≤0.25 µg/kg, sample year: 2005/2006, country: Germany¹¹²²

α -ZEARALENOL

incidence: 2/6*, conc. range: 15–16 $\mu\text{g}/\text{kg}$, \emptyset conc.: 15.5 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, HT-2, T-2, ZEA4G, ZEA4S, α -ZEL, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, HT-2, T-2, ZEA, and α -ZEL)

incidence: 4/15*, conc. range: 31–50 $\mu\text{g}/\text{kg}$, \emptyset conc.: 38 $\mu\text{g}/\text{kg}$, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat

 β -ZEARALENOL

incidence: 2/6*, conc. range: ≤ 49 $\mu\text{g}/\text{kg}$, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, HT-2, T-2, ZEA4G, ZEA4S, α -ZEL, and β -ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, T-2, ZEA, ZEA4S, and β -ZEL)

ZEARALENONE

incidence: 9/14, conc. range: ≤ 38.61 $\mu\text{g}/\text{kg}$, \emptyset conc.: 22.80 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain²¹⁰

incidence: 4/8*, conc. range: ≤ 12.67 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5.22 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Spain²¹⁰, *wheat and rice

incidence: 2/27, conc. range: 2–8 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Finland²¹⁹ (1 sa co-contaminated with DON, 3-AcDON, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 1/15, conc.: 23 $\mu\text{g}/\text{kg}$, sample year: 2004, country: Germany²⁴⁴

incidence: 3/25*, conc. range: 11–24 $\mu\text{g}/\text{kg}$, \emptyset conc.: 16 $\mu\text{g}/\text{kg}$, sample year: 1995, country: China²⁸⁵, *sa from high-risk area of HEC

incidence: 41/60*, conc. range: 10–1,480 $\mu\text{g}/\text{kg}$, sample year: 1992, country: Russia³¹², *stored wheat

incidence: 3/154*, conc. range: 60–280 $\mu\text{g}/\text{kg}$, sample year: 1993, country: Russia³¹², *stored wheat

incidence: 13/56*, conc. range: 10–80 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Russia³¹², *stored wheat

incidence: 1/68*, conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Russia³¹², *stored wheat

incidence: 6/8, conc. range: 105–3,079 $\mu\text{g}/\text{kg}$, \emptyset conc.: 891.7 $\mu\text{g}/\text{kg}$, sample year: 1991, country: China³⁴² (1 sa co-contaminated DON, 3-AcDON, NIV, and ZEA, 5 sa co-contaminated with DON, NIV, and ZEA)

incidence: 65/261*, \emptyset conc.: 441.1 $\mu\text{g}/\text{kg}$, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 13/189*, \emptyset conc.: 240.7 $\mu\text{g}/\text{kg}$, sample year: 1986, country: Argentina³⁹⁵, *ncac

incidence: 2/12, conc. range: 27–30 $\mu\text{g}/\text{kg}$, \emptyset conc.: 28 $\mu\text{g}/\text{kg}$, sample year: 1989, country: USA⁴²⁴

incidence: 10/40, conc. range: 28–42 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁴²⁷

incidence: 10/135* **, conc. range: ≤ 250 $\mu\text{g}/\text{kg}$, \emptyset conc.: 74 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Germany⁴⁴¹, *ncac, **conventional

incidence: 2/46* **, conc. range: ≤ 55 $\mu\text{g}/\text{kg}$, \emptyset conc.: 47 $\mu\text{g}/\text{kg}$, sample year: 1998, country: Germany⁴⁴¹, *ncac, **organic

incidence: 17/283*, conc. range: >10–188 $\mu\text{g}/\text{kg}$, \emptyset conc.: 35 $\mu\text{g}/\text{kg}$, sample year: 2001, country: UK⁴⁴², *ncac

incidence: 2/2*, conc. range: 2,500–3,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,750 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Portugal⁴⁵¹, *ncac

incidence: 19/102* **, conc. range: 364–11,054 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,721.6 $\mu\text{g}/\text{kg}$, sample year: 1975, country: USA⁴⁵⁴, *ncac, **soft red and winter wheat

incidence: 2/40, conc. range: 12–32 µg/kg, Ø conc.: 22 µg/kg, sample year: 1987/1988, country: Finland⁴⁵⁵

incidence: 48/151*, conc. range: ≤460 µg/kg, sample year: 1986–1989, country: New Zealand⁴⁶⁸, *ncac

incidence: 2/10* **, conc. range: 8–40 µg/kg, Ø conc.: 24 µg/kg, sample year: 1983, country: Japan/Korea⁴⁶⁹, sa from Korea, *for food and feed, **polished wheat (1 sa co-contaminated with DON, NIV and ZEA, 1 sa contaminated solely with ZEA)

incidence: 5/9* **, conc. range: 3–1,254 µg/kg, sample year: 1984, country: Korea⁴⁷⁰, *ncac, **husked wheat (3 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with NIV and ZEA)

incidence: 6/15*, conc. range: tr, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *high EC area

incidence: 6/15*, conc. range: tr, sample year: 1989, country: Japan⁴⁹⁷, sa from China, *low EC area

incidence: 2/5*, conc. range: 15–25 µg/kg, Ø conc.: 15 µg/kg, sample year: 1989, country: Japan/China⁴⁹⁸, sa from China, *high incidence of Kashin-Beck disease

incidence: 5/13* **, conc. range: 100–1,800 µg/kg, Ø conc.: 760 µg/kg, sample year: 1988, country: Poland⁵¹², *ncac, ***Fusarium* damaged kernels

incidence: 22/24*, conc. range: 11–860 µg/kg, sample year: 1999, country: Germany⁵¹⁵, *ncac (10 sa co-contaminated with ZEA and ZEA4G, 12 sa contaminated solely with ZEA)

incidence: 9/95* **, conc. range: 5–33 µg/kg, Ø conc.: 14 µg/kg, sample year: 1986–1988, 1989–1993 (6 years), country: Canada⁵²¹, *ncac, **Ontario soft winter wheat

incidence: 1/188* **, conc.: 4 µg/kg, sample year: 1986–89, 1990–93 (6 years), country: Canada⁵²¹, *ncac, **western hard wheat

incidence: 6/13*, conc. range: 2–25 µg/kg, Ø conc.: 12.5 µg/kg, sample year: 1991, country: Japan⁵²⁸, *ncac (1 sa co-contaminated with DON, FUS-X, and ZEA, 3 sa co-contaminated with DON and ZEA, 2 sa co-contaminated with FUS-X and ZEA)

incidence: 3/49*, conc. range: 2–23 µg/kg, country: Ø conc.: 9.7 µg/kg, sample year: 1984, country: Norway/Japan⁵²⁹, sa from Norway, *ncac

incidence: 69/222*, Ø conc.: 23 µg/kg, sample year: unknown, country: Japan⁵³⁰, *ncac

incidence: 4/31*, conc. range: 1–3 µg/kg, Ø conc.: 1 µg/kg, sample year: 1984, country: Japan⁵³³, sa from UK, *ncac (1 sa co-contaminated with DON, NIV, and ZEA, 2 sa co-contaminated with NIV and ZEA, 1 sa contaminated solely with ZEA)

incidence: 2/2*, conc. range: 3–10 µg/kg, Ø conc.: 6.6 µg/kg, sample year: 1984, country: Japan⁵³³, sa from Scotland, *ncac (1 sa co-contamination with DON and ZEA)

incidence: 18/18* **, conc. range: 8–706 µg/kg, Ø conc.: 189 µg/kg, sample year: 1984, country: Japan⁵³⁴, *ncac, **scabby wheat stored for about 4 months (11 sa co-contaminated with DON and ZEA, 7 sa co-contaminated with DON, NIV, and ZEA)

incidence: 7/13*, conc. range: 2–174 µg/kg, Ø conc.: 45 µg/kg, sample year: 1984/1985, country: Japan/Netherlands⁵³⁶, sa from Netherlands, *ncac (6 sa co-contaminated with DON, NIV, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 9/10, conc. range: 2–21 µg/kg, Ø conc.: 9 µg/kg, sample year: 1980–1984, country: Japan⁵³⁷, sa from Canada, *ncac (4 sa co-contaminated with DON, NIV, and ZEA, 5 sa co-contaminated with DON and ZEA)

incidence: 20/20*, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1983, country: Japan⁵³⁸, sa from Argentina, *ncac

incidence: 4/4*, \emptyset conc.: 78 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from China, *ncac

incidence: 3/8*, \emptyset conc.: 3 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Germany, *ncac

incidence: 1/12*, conc.: 4 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Italy, *ncac

incidence: 2/10*, \emptyset conc.: 4 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Nepal, *ncac

incidence: 2/4*, \emptyset conc.: 16 $\mu\text{g}/\text{kg}$, sample year: 1985, country: Japan⁵³⁸, sa from Portugal, *ncac

incidence: 4/7*, \emptyset conc.: 2 $\mu\text{g}/\text{kg}$, sample year: 1984, country: Japan⁵³⁸, sa from Yemen, *ncac

incidence: 1/116*, conc.: 5,000 $\mu\text{g}/\text{kg}$, sample year: 1993, country: USA⁵⁴³, *hard red winter wheat

incidence: 1/42*, conc.: 76 $\mu\text{g}/\text{kg}$, sample year: 1985, country: Japan/Poland⁵⁴⁸, sa from Poland, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 1/2*, conc.: 10 $\mu\text{g}/\text{kg}$, sample year: 1997, country: Germany⁵⁶², sa from Germany, Italy, USA, and unknown origin, *conventional (1 sa co-contaminated with DON and ZEA)

incidence: 0/0*, no sa investigated, sample year: 1997, country: Germany⁵⁶², *organic

incidence: 97/140, conc. range: ≤ 120 $\mu\text{g}/\text{kg}$, \emptyset conc.: 17 $\mu\text{g}/\text{kg}$, sample year: 1995, country: Bulgaria/Germany⁵⁶⁴, sa from Bulgaria

incidence: 35/35*, conc. range: 1,266.6–5,487.5 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3,464 $\mu\text{g}/\text{kg}$, sample year: 1996, country: Iran⁵⁷⁰, *ncac

incidence: 1/1*, conc.: 1,690 $\mu\text{g}/\text{kg}$, sample year: 1976, country: Japan⁵⁷³,

*ncac (1 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)

incidence: 1/7*, conc.: 53 $\mu\text{g}/\text{kg}$, sample year: 1990, country: Japan⁵⁷³, *ncac (1 sa co-contaminated with DON, NIV, and ZEA)

incidence: 2/9*, conc. range: 459–505 $\mu\text{g}/\text{kg}$, \emptyset conc.: 500 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Japan⁵⁷³, *ncac (2 sa co-contaminated with DON, 3-AcDON, NIV, and ZEA)

incidence: 1/1* **, conc.: 1,040 $\mu\text{g}/\text{kg}$, sample year: 1991, country: Papua, New Guinea/Japan⁵⁷⁴, sa from Australia, *ncac, **coarse ground wheat

incidence: 3/20*, conc. range: 130–400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 246.7 $\mu\text{g}/\text{kg}$, sample year: 1990, country: Brazil⁷⁶⁷, *ncac

incidence: 3/33* **, conc. range: 35–115 $\mu\text{g}/\text{kg}$, \emptyset conc.: 80 $\mu\text{g}/\text{kg}$, sample year: 1982, country: USA⁷⁷⁰, *ncac, **scabby wheat (2 sa co-contaminated with AFB₁, DON, and ZEA, 1 sa co-contaminated with DON and ZEA)

incidence: 1/95, conc.: 18 $\mu\text{g}/\text{kg}$, sample year: 1995, country: Switzerland⁷⁷⁹

incidence: 4/28, conc. range: 14–17 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Switzerland⁷⁷⁹, sa imported

incidence: 5/106* **, conc. range: 100–200 $\mu\text{g}/\text{kg}$ (2 sa), >200 $\mu\text{g}/\text{kg}$ (3 sa), sample year: 1993–1995, country: Uruguay⁷⁸⁷, *ncac, **wheat and by-products

incidence: 5/40, conc. range: 4.9–12.7 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8.8 $\mu\text{g}/\text{kg}$, sample year: unknown, country: Egypt⁸⁷⁷

incidence: 4/4, conc. range: 0.21–2.13 $\mu\text{g}/\text{kg}$, sample year: 2002, country: Qatar⁸⁷⁸

incidence: 16/23, conc. range: pr, sample year: 2005, country: Austria⁹³³, sa from Austria, Germany, and Slovakia

incidence: 8/27, conc. range: 100–2,000 $\mu\text{g}/\text{kg}$, sample year: 1996, country: Bulgaria⁹⁷⁹

- incidence: 11/21, conc. range: 150–700 µg/kg, sample year: 1997, country: Bulgaria⁹⁷⁹
- incidence: 13/28, conc. range: 200–1,500 µg/kg, sample year: 1998, country: Bulgaria⁹⁷⁹
- incidence: 16/25, conc. range: 80–300 µg/kg, sample year: 1999, country: Bulgaria⁹⁷⁹
- incidence: 19/32, conc. range: 150–4,000 µg/kg, sample year: 2000, country: Bulgaria⁹⁷⁹
- incidence: 17/30, conc. range: 300–2,500 µg/kg, sample year: 2001, country: Bulgaria⁹⁷⁹
- incidence: 47/82*, conc. range: 1–96 µg/kg, sample year: 2004, country: Kenya/Germany⁹⁸⁴, sa from Kenya, *ncac
- incidence: 309/1,624, conc. range: ≤1,292 µg/kg, sample year: 2001–2005, country: UK¹⁰⁶⁷
- incidence: 7/34, conc. range: ≤34 µg/kg, Ø conc.: 10 µg/kg, sample year: 2004–2007, country: UK¹¹⁶⁴
- incidence: 21/31, conc. range: 9–1,400 µg/kg, Ø conc.: 209 µg/kg, sample year: 1998, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode
- incidence: 20/34, conc. range: 5–113 µg/kg, Ø conc.: 23 µg/kg, sample year: 1999, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode
- incidence: 7/28, conc. range: 10–217 µg/kg, Ø conc.: 108 µg/kg, sample year: 1998, country: China/Japan¹²²⁸, sa from China with a previous human red mold intoxication episode
- incidence: 10/39* **, conc. range: tr–16 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed, **winter wheat
- incidence: 6/12* **, conc. range: tr–95.6 µg/kg, sample year: 2004, country: Lithuania¹²⁵⁴, *for food and feed, **spring wheat
- incidence: 16/49*, conc. range: tr–33.4 µg/kg, sample year: 2005, country: Lithuania¹²⁵⁴, *for food and feed
- incidence: 1/54, conc.: 10.0 µg/kg, sample year: 2007, country: Bulgaria¹²⁵⁵
- incidence: 8/59, conc. range: 4–68 µg/kg, Ø conc.: 14 µg/kg, sample year: 2001, country: Germany¹²⁶⁵
- incidence: 27/60, conc. range: 3–447 µg/kg, Ø conc.: 43 µg/kg, sample year: 2002, country: Germany¹²⁶⁵
- incidence: 3/56, conc. range: 4–84 µg/kg, Ø conc.: 31 µg/kg, sample year: 2003, country: Germany¹²⁶⁵
- incidence: 12/26* **, conc. range: 1–133 µg/kg, Ø conc.: 13.8 µg/kg, sample year: unknown, country: Croatia/Japan¹³²³, sa from Croatia, *ncac, **sa from EN regions (6 sa co-contaminated with DON, NIV, and ZEA, 6 sa co-contaminated with DON and ZEA)
- incidence: 17/20*, conc. range: 4–50 µg/kg (7 sa), 50.1–75 µg/kg (2 sa), 75.1–100 µg/kg (2 sa), >100 µg/kg (6 sa, maximum: 86 µg/kg?), sample year: 2002, country: Belgium¹³⁵¹, *conventional
- incidence: 13/25*, conc. range: 4–50 µg/kg (8 sa), 50.1–75 µg/kg (3 sa), 75.1–100 µg/kg (2 sa, maximum: 232 µg/kg?), sample year: 2002, country: Belgium¹³⁵¹, *organic
- incidence: 2/22*, conc. range: 0.75–4 µg/kg, sample year: 2003, country: Belgium¹³⁵¹, *conventional
- incidence: 1/26*, conc.: 0.75–4 µg/kg, sample year: 2003, country: Belgium¹³⁵¹, *organic
- incidence: 4/6* **, conc. range: 12.5–50.4 µg/kg, Ø conc.: 29.1 µg/kg, sample year: 2007, country: Croatia¹⁴⁰³, *for food and feed, **collected from EN villages
- incidence: 3/10, conc. range: 2.98–6.73 µg/kg, Ø conc.: 5.11 µg/kg, sample year: 2009, country: Malaysia¹⁴²³

incidence: 14/35*, conc. range: >100–142 µg/kg, sample year: 2002–2004, country: Romania¹⁴³⁹, *ncac

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *spring wheat, **conventional

incidence: 3/3* **, conc. range: 34.60–40.40 µg/kg, Ø conc.: 37.40 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *spring wheat, **organic

incidence: 0/0* **, no sa investigated, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², *winter wheat, **conventional

incidence: 7/10* **, conc. range: ≤11.50 µg/kg, sample year: 2006, country: Lithuania/Denmark¹⁴⁴², sa from Lithuania, *winter wheat, **organic

incidence: 1/1*, conc.: 8 µg/kg, sample year: 1984, country: Japan¹⁴⁴³, *please see also **Flour (wheat) 3rd break flour, Zearalenone**, no¹⁴⁴³, as well as **Flour (wheat) 3rd middling flour, Zearalenone**, no¹⁴⁴³

incidence: 4/5, conc. range: 2–74 µg/kg, Ø conc.: 27.75 µg/kg, sample year: unknown, country: Japan/UK¹⁴⁴⁵, sa from Japan (1 sa co-contaminated with DON, HT-2, T-2, and ZEA, 3 sa co-contaminated with DON and ZEA)

incidence: 5/6*, conc. range: 12–109 µg/kg, Ø conc.: 50.6 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, T-2, ZEA, ZEA4S, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, HT-2, T-2, ZEA, and α-ZEL, 1 sa co-contaminated with DON, DON3G, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, DON3G, ZEA, and ZEA4G, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA)

incidence: 17/25*, conc. range: <LOQ–145 µg/kg, sample year: 2008/2009,

country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *winter wheat (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERT, HT-2, T-2, and ZEA, 2 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA, 1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, T-2, and ZEA, 1 sa co-contaminated with DON, HT-2, T-2, and ZEA, 4 sa co-contaminated with DON, 3-AcDON + 15-AcDON, and ZEA, 1 sa co-contaminated with DON, HT-2, and ZEA, 2 sa co-contaminated with DON, T-2, and ZEA, 5 sa co-contaminated with DON and ZEA)

incidence: 10/15*, conc. range: 38–293 µg/kg, Ø conc.: 96.6 µg/kg, sample year: 2008/2009, country: Canada/Colombia¹⁴⁷⁷, sa from Canada, *spring wheat (1 sa co-contaminated with DON, 3-AcDON + 15-AcDON, ERC, HT-2, T-2, ZEA, and α-ZEL, 3 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, ZEA, and α-ZEL, 6 sa co-contaminated with DON, 3-AcDON + 15-AcDON, HT-2, T-2, and ZEA)

incidence: 44/86* **, conc. range: 0.3–119 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **winter wheat
incidence: 12/21* **, conc. range: 0.2–9.7 µg/kg, sample year: 2009, country: Netherlands¹⁵⁰¹, *ncac, **preharvest winter wheat (paired sa)

incidence: 7/28* **, conc. range: <1–118 µg/kg, sample year: 2004, country: Germany/Austria¹⁵¹⁰, sa from Germany, *ncac, **infected by fusarium head blight

incidence: 4/40, conc. range: ≤5.52 µg/kg, Ø conc.: 4.2 µg/kg, sample year: 2008, country: Romania¹⁵²⁵

incidence: 22/28*, conc. range: 10–143 µg/kg, Ø conc.: 19.74 µg/kg, sample year: 2005, country: Serbia¹⁵⁸², *winter wheat

incidence: 71/75*, conc. range: 16–201 µg/kg, Ø conc.: 29.01 µg/kg, sample year: 2007, country: Serbia¹⁵⁸², *winter wheat

incidence: 7/26, conc. range: 7–55 µg/kg, Ø conc.: 16.7 µg/kg, sample year: 2006, country: Germany/Kenya¹⁶⁶, sa from Kenya (1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, MAS, NEO, and ZEA, 1 sa co-contaminated with AME, AOH, BEA, 3-AcDON, ENB, NIV, OTA, and ZEA, 1 sa co-contaminated with AFG₂, DON, 3-AcDON, FUS-X, HT-2, NEO, and ZEA, 1 sa co-contaminated with ENB, MON, and ZEA, 2 sa co-contaminated with ENB and ZEA, 1 sa contaminated solely with ZEA)

incidence: 6/20, conc. range: 1.42–12.74 µg/kg, sample year: 2010, country: Malaysia¹⁶⁸

ZEARALENONE-4-GLUCOSIDE

incidence: 10/24*, conc. range: 17–104 µg/kg, sample year: 1999, country: Germany⁵¹⁵, *ncac (10 sa co-contaminated with ZEA)

incidence: 2/6*, conc. range: <LOQ, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, HT-2, T-2, ZEA4G, ZEA4S, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, DON3G, ZEA, and ZEA4G)

ZEARALENONE-4-SULFATE

incidence: 2/6*, conc. range: 11 µg/kg, Ø conc.: 11 µg/kg, sample year: 2010/2011, country: Belgium/Austria¹⁴⁶³, sa from Belgium, *for food and feed (1 sa co-contaminated with 3-AcDON, HT-2, T-2, ZEA4G, ZEA4S, α-ZEL, and β-ZEL, 1 sa co-contaminated with DON, 3-AcDON, 15-AcDON, T-2, ZEA, ZEA4S, and β-ZEL)

Penicillium Toxins

RUBRATOXIN

incidence: 1/30*, conc.: 245 µg/kg, sample year: 1984–1986, country: India⁷⁸⁴, *ncac

Wheat beer see Beer

Wheat bran see Bran (wheat bran)

Wheat flakes see Flake (wheat flakes)

Wheat flour see Flour (wheat flour)

Wheat food see Food

Wheat germ see Germ (wheat germ)

Wheat grits see Grit (wheat grits)

Wheat meal see Meal (wheat meal)

Wheat noodles see Noodle

Wheat starch see Starch (wheat starch)

Wheat products see Product (wheat products)

Whey powder see Powder (whey powder)

White cheese see Cheese (White cheese)

Wine may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/22*, conc. range: 0.4–1 µg/l**, Ø conc.: 0.78 µg/l, sample year: unknown, country: Finland¹⁰⁹, *different kinds of wine, **contaminated sa from Algeria, Greece, Portugal, Spain, and Yugoslavia

AFLATOXIN B₂

incidence: 5/22*, conc. range: 0.1–0.3 µg/l**, Ø conc.: 0.2 µg/l, sample year: unknown, country: Finland¹⁰⁹, *different kinds of wine, **contaminated sa from Algeria, Greece, Portugal, Spain, and Yugoslavia

AFLATOXIN G₁

incidence: 5/22*, conc. range: 0.3–1 µg/l**, Ø conc.: 0.66 µg/l, sample year: unknown, country: Finland¹⁰⁹, *different kinds of wine, **contaminated sa from Algeria, Greece, Portugal, Spain, and Yugoslavia

AFLATOXIN G₂

incidence: 5/22*, conc. range: 0.1–0.3 µg/l**,
 Ø conc.: 0.18 µg/l, sample year: unknown,
 country: Finland¹⁰⁹, *different kinds of
 wine, **contaminated sa from Algeria,
 Greece, Portugal, Spain, and Yugoslavia

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 6/18*, conc. range: ≤0.11 µg/
 kg, sample year: unknown, country:
 Switzerland⁴⁹², *white, red (mainly
 contaminated), and rosé wine

incidence: 1/117*, conc.: 0.02 µg/l, sample
 year: unknown, country: Austria⁷⁵⁰, *red
 and white wine and “Prädikatsweine”

incidence: 15/83, conc. range: ≤1.29 µg/kg,
 Ø conc.: 0.29 µg/kg, sample year: 2004–
 2007, country: Japan⁹⁰⁰

incidence: 1/14, conc.: 0.15 µg/kg, sample
 year: unknown, country: Japan¹⁰²⁵

incidence: 8/10, conc. range: 0.02–0.72 µg/
 kg, Ø conc.: 0.26 µg/kg, sample year:
 2004/2005, country: Japan¹²¹⁵

incidence: 12/69*, conc. range: tr (10 sa),
 1.23–2.4 µg/l (2 sa), sample year:
 unknown, country: Portugal¹³²¹, *red and
 white wine

incidence: 77/107*, conc. range: >LOD–
 1.10 µg/l, sample year: 2003/2004
 (production year), country: Italy¹⁴³⁴, *red
 and white wine from Piedmont

incidence: 14/18*, conc. range: LOQ–
 0.1 µg/l (7 sa), 0.1–0.5 µg/l (7 sa,
 maximum: 0.420 µg/l), Ø conc.: 0.088 µg/l,
 sample year: 2000, country: Italy¹⁶²⁹, *red
 and white wine

incidence: 17/33*, conc. range: LOQ–
 0.1 µg/l (8 sa), 0.1–0.5 µg/l (8 sa),
 0.870 µg/l (1 sa), Ø conc.: 0.071 µg/l,
 sample year: 2001, country: Italy¹⁶²⁹, *red
 and white wine

incidence: 28/46*, conc. range: LOQ–
 0.1 µg/l (13 sa), 0.1–0.5 µg/l (13 sa),
 0.5–2 µg/l (2 sa, maximum: 0.810 µg/l),
 Ø conc.: 0.089 µg/l, sample year: 2002,

country: Italy¹⁶²⁹, *red and
 white wine

incidence: 122/162*, conc. range: LOQ–
 0.1 µg/l (87 sa), 0.1–0.5 µg/l (33 sa),
 0.5–2 µg/l (2 sa, maximum: 1.390 µg/l),
 Ø conc.: 0.069 µg/l, sample year: 2003,
 country: Italy¹⁶²⁹, *red and
 white wine

incidence: 104/151*, conc. range: LOQ–
 0.1 µg/l (63 sa), 0.1–0.5 µg/l (36 sa),
 0.5–2 µg/l (5 sa, maximum: 0.736 µg/l), Ø
 conc.: 0.081 µg/l, sample year: 2004, country:
 Italy¹⁶²⁹, *red and white wine

incidence: 166/305*, conc. range: LOQ–
 0.1 µg/l (103 sa), 0.1–0.5 µg/l (57 sa),
 0.5–2 µg/l (5 sa), 2.630 µg/l (1 sa), Ø conc.:
 0.068 µg/l, sample year: 2005, country:
 Italy¹⁶²⁹, *red and white wine

incidence: 298/396*, conc. range: LOQ–
 0.1 µg/l (197 sa), 0.1–0.5 µg/l (88 sa),
 0.5–2 µg/l (12 sa), 2.010 µg/l (1 sa), Ø
 conc.: 0.096 µg/l, sample year: 2006,
 country: Italy¹⁶²⁹, *red and white wine

incidence: 71/95*, conc. range: LOQ–
 0.1 µg/l (68 sa), 0.1–0.5 µg/l (1 sa),
 0.5–2 µg/l (2 sa, maximum: 1.360 µg/l),
 Ø conc.: 0.048 µg/l, sample year: 2007,
 country: Italy¹⁶²⁹, *red and white wine

Wine (red) may contain the following
 mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 5/5, conc. range: 0.36–7.50 µg/
 kg, sample year: unknown, country:
 Germany⁹¹⁰ (5 sa co-contaminated with
 AME and AOH)

incidence: 13/17, conc. range: 0.03–
 5.02 µg/l, Ø conc.: 1.275 µg/l, sample year:
 unknown, country: Canada⁹⁸⁶

incidence: 7/7, conc. range: 0.27–19.4 µg/l,
 Ø conc.: 4.698 µg/l, sample year:
 unknown, country: Canada⁹⁸⁶, sa from
 Argentina, Chile, Italy, and USA

incidence: 1/1, conc.: 1.9 µg/l, sample year:
 unknown, country: Canada¹²²¹

incidence: 6/56, conc. range: <LOQ–13 µg/l, sample year: 2011, country: Argentina¹⁵⁸¹

ALTERNARIOL METHYL ETHER

incidence: 5/5, conc.: pr–0.15 µg/kg, sample year: unknown, country: Germany⁹¹⁰ (5 sa co-contaminated with AME and AOH)

incidence: 13/17, conc. range: 0.01–0.23 µg/l, Ø conc.: 0.119 µg/l, sample year: unknown, country: Canada⁹⁸⁶

incidence: 6/7, conc. range: 0.01–0.19 µg/l, Ø conc.: 0.067 µg/l, sample year: unknown, country: Canada⁹⁸⁶, sa from Argentina, Chile, Italy, and USA

incidence: 1/56, conc.: <LOQ, sample year: 2011, country: Argentina¹⁵⁸¹

Aspergillus Toxins

AFLATOXIN B₂

incidence: 21/24, conc. range: 2.73–25.73 µg/l, Ø conc.: 7.89 µg/l, sample year: unknown, country: Spain¹⁴⁸²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 20/20, conc. range: 0.04–3.24 µg/l, Ø conc.: 0.912 µg/l, sample year: unknown, country: Morocco²²⁸

incidence: 49/53, conc. range: 0.0022–6.71 µg/l, Ø conc.: 0.039 µg/l, sample year: unknown, country: Poland²⁵⁰, sa imported

incidence: 7/22*, conc. range: 0.0283–0.0707 µg/l, Ø conc.: 0.0394 µg/l, sample year: unknown, country: Brazil/Argentina²⁶⁰, sa from Brazil, Argentina, Chile, *red table wine

incidence: 9/20*, conc. range: 0.0283–0.0567 µg/l, Ø conc.: 0.0338 µg/l, sample year: unknown, country: Brazil/Argentina²⁶⁰, sa from France, Italy, Portugal, and Spain, *red table wine

incidence: 71/104*, conc. range: ≤2.69 µg/l, sample year: 1995–1999, country: Greece²⁶³, *dry red wine

incidence: 24/130*, conc. range: 0.06–4.24 µg/l, Ø conc.: 0.25 µg/l, sample year: 2002, country: Spain²⁶⁹, *included Rioja, Penedés, Costers del Serge, Utiel-Requena, and ordinary wine

incidence: 9/14*, conc. range: ≤2.51 µg/l, Ø conc.: 0.68 µg/l, sample year: 1995, 1997–1999, country: Greece/France²⁹², sa from Greece, *dry red wine

incidence: 84/91, conc. range: ≤0.603 µg/l, sample year: 1997, country: Spain²⁹³, sa partly from different European countries

incidence: 9/49, conc. range: ≤0.1 µg/l, country: South Africa²⁹⁴

incidence: 2/2, conc. range: 1.5–3.78 µg/l, Ø conc.: 2.64 µg/l, sample year: unknown, country: Italy³⁰⁶

incidence: 82/96, conc. range: 0.001–3.177 µg/l, sample year: 1998/1999, country: Italy³⁵⁰, sa from different Italian regions

incidence: 5/31, conc. range: ≤0.030 µg/l, Ø conc.: 0.027 µg/l, sample year: unknown, country: Japan⁵⁷⁶

incidence: 1/2*, conc.: 0.1–0.3 µg/kg, sample year: 2003, country: Taiwan⁶⁰⁷, *sa domestic

incidence: 4/8, conc. range: 0.1–0.3 µg/kg (2 sa), 0.3–0.5 µg/kg (2 sa), sample year: 2003, country: Taiwan⁶⁰⁷, sa imported

incidence: 33/33, conc. range: 0.03–0.533 µg/l, Ø conc.: 0.117 µg/l, sample year: 2000–2002, country: Hungary⁶²³

incidence: 11/14, conc. range: 0.056–0.316 µg/l, Ø conc.: 0.160 µg/l, sample year: 1997, country: Spain⁶³³

incidence: 2/14, conc. range: 0.074–0.193 µg/l, Ø conc.: 0.133 µg/l, sample year: 1998, country: Spain⁶³³

incidence: 28/50, conc. range: 0.01–0.19 µg/kg (22 sa), 0.2–0.4 µg/kg (4 sa), 0.41–1.0 µg/kg (2 sa maximum: 0.8 µg/kg), sample year: 1998, country: UK⁶³⁸, sa from different countries

incidence: 79/172, conc. range: ≤ 7.0 $\mu\text{g/l}$,
sample year: unknown, country:
Germany⁶³⁹, sa from Germany and
different countries

incidence: 4/4*, conc. range: 0.18–
0.38 $\mu\text{g/l}$, \emptyset conc.: 0.29 $\mu\text{g/l}$, sample year:
2000/2001, country: South Africa⁶⁴¹,
*bottled red wine

incidence: 5/5*, conc. range: 0.07–
0.39 $\mu\text{g/l}$, \emptyset conc.: 0.21 $\mu\text{g/l}$, sample year:
2000/2001, country: South Africa⁶⁴¹,
*boxed red wine

incidence: ?/5, conc. range: 0.23–0.91 $\mu\text{g/l}$,
sample year: 2000/2001, country: South
Africa⁶⁴¹, sa from Italy

incidence: 31/31, conc. range: 0.009–
0.100 $\mu\text{g/l}$ (22 sa*), 0.551–0.892 $\mu\text{g/l}$ (3 sa**),
1.54 $\mu\text{g/l}$ (1 sa***), 1.59–3.40 $\mu\text{g/l}$ (5 sa****),
sample year: 1999, country: Greece/
France⁶⁴³, *sa from Mediterranean sea
countries, **sa from Italy and Morocco,
sa from Communauté Européenne, *sa
from Greece and France

incidence: 96/580, conc. range: 0.051–
0.1 $\mu\text{g/l}$ (94 sa), >0.1 to <2 $\mu\text{g/l}$ (2 sa),
sample year: unknown, country:
Canada⁶⁶⁴, sa from Canada and different
countries; for detailed information please
see the article

incidence: 5/36, conc. range: LOD–
0.049 $\mu\text{g/l}$ (3 sa), 0.050–0.500 $\mu\text{g/l}$ (2 sa,
maximum: 0.393 $\mu\text{g/l}$), sample year:
1999–2002, country: Canada⁶⁷⁶

incidence: 26/48, conc. range: LOD–
0.049 $\mu\text{g/l}$ (6 sa), 0.050–0.500 $\mu\text{g/l}$ (15 sa),
 >0.500 $\mu\text{g/l}$ (5 sa, maximum: 2.320 $\mu\text{g/l}$),
sample year: 1999–2002, country:
Canada⁶⁷⁶, sa imported

incidence: 55/79, conc. range: ≤ 0.388 $\mu\text{g/l}$,
sample year: 1994/1995, country:
Switzerland⁶⁹¹, sa from Switzerland and
other countries

incidence: 4/10, conc. range: 0.7–1.1 $\mu\text{g/}$
kg, \emptyset conc.: 0.95 $\mu\text{g/kg}$, sample year: 1996,
country: UK⁷⁴²

incidence: 33/267*, conc. range: <0.1 $\mu\text{g/l}$
(19 sa), 0.1 to <0.2 $\mu\text{g/l}$ (12 sa), ≥ 0.2 $\mu\text{g/l}$
(2 sa, maximum: 0.62 $\mu\text{g/l}$), sample year:
1984–1986, 1997–2000, country:
Australia⁷⁴⁹, *sa in bottles included
sparkling wine

incidence: 16/32, conc. range: <0.1 $\mu\text{g/l}$
(10 sa), 0.1 to <0.2 $\mu\text{g/l}$ (4 sa), ≥ 0.2 $\mu\text{g/l}$
(2 sa, maximum: 0.215 $\mu\text{g/l}$), sample year:
1984–1986, 1997–2000, country:
Australia⁷⁴⁹, *sa in casks

incidence: 10/10, conc. range: 0.04–
1.32 $\mu\text{g/l}$, \emptyset conc.: 0.319 $\mu\text{g/l}$, sample year:
1999, country: Turkey⁸⁹⁴, sa from different
Turkish regions

incidence: 12/12, conc. range: 0.04–
1.26 $\mu\text{g/l}$, \emptyset conc.: 0.4275 $\mu\text{g/l}$, sample
year: 2000, country: Turkey⁸⁹⁴,
sa from different Turkish regions

incidence: 13/13, conc. range: 0.04–
1.92 $\mu\text{g/l}$, \emptyset conc.: 0.53 $\mu\text{g/l}$, sample year:
2001, country: Turkey⁸⁹⁴, sa from different
Turkish regions

incidence: 16/29, conc. range: 0.31–
2.92 $\mu\text{g/l}$, sample year: unknown, country:
Italy⁹⁰²

incidence: ?/773, conc. range:
 ≤ 7.50 $\mu\text{g/l}$, sample year: 2002–2004,
country: Italy⁹¹⁷

incidence: 31/38*, conc. range: 0.4–
1.44 $\mu\text{g/l}$, \emptyset conc.: 0.29 $\mu\text{g/l}$, sample year:
2004, country: Italy⁹²⁸, *bottled
red wine

incidence: 5/5*, conc. range: 0.17–0.87 $\mu\text{g/l}$,
 \emptyset conc.: 0.33 $\mu\text{g/l}$, sample year: 2004,
country: Italy⁹²⁸, *boxed red wine

incidence: 2/18, conc. range: LOD–LOQ
(1 sa), 0.06 $\mu\text{g/l}$ (1 sa), sample year:
2003 (production year: 1999), country:
Spain⁹⁴⁷

incidence: 6/19, conc. range: LOD–LOQ
(2 sa), 0.20–0.40 $\mu\text{g/l}$ (4 sa), sample year:
2003 (production year: 2000), country:
Spain⁹⁴⁷

incidence: 13/24, conc. range: LOD–LOQ (6 sa), 0.10–0.53 µg/l (7 sa), sample year: 2003 (production year: 2001), country: Spain⁹⁴⁷

incidence: 1/5, conc. range: LOD–0.10 µg/l, sample year: 2003 (production year: 1999), country: Italy/Spain⁹⁵³, sa from Italy

incidence: 60/70, conc. range: LOD–0.10 µg/l (26 sa), >0.10–0.50 µg/l (29 sa), >0.50–1 µg/l (3 sa), >1–2 µg/l (1 sa), 2.37 µg/l (1 sa), sample year: 2003 (production year: 2000), country: Italy/Spain⁹⁵³, sa from Italy

incidence: 60/64, conc. range: LOD–0.10 µg/l (21 sa), >0.10–0.50 µg/l (31 sa), >0.50–1 µg/l (5 sa), >1–2 µg/l (3 sa, maximum: 1.10 µg/l), sample year: 2003 (production year: 2001), country: Italy/Spain⁹⁵³, sa from Italy

incidence: 13/20, conc. range: LOD–0.10 µg/l (6 sa), >0.10–0.50 µg/l (5 sa), >0.50–1 µg/l (1 sa), 4.00 µg/l (1 sa), sample year: 2003 (production year: 2002), country: Italy/Spain⁹⁵³, sa from Italy

incidence: 13/16, conc. range: tr–1.530 µg/l, sample year: 2009, country: Italy⁹⁶⁴

incidence: 21/21, conc. range: ≤1.30* µg/l, Ø conc.: 0.39 µg/l, sample year: 1999/2000, country: Germany¹⁰¹⁰, 1 sa from Bulgaria, 9 sa from Italy, and 11 sa from *Tunisia

incidence: 31/31*, conc. range: <LOQ–3.80 µg/l, country: Italy¹⁰¹¹, *table wines packed in brik, 2 of the sa collected in a packaging line

incidence: 8/10*, conc. range: 0.005–0.021 µg/l, Ø conc.: 0.0148 µg/l, sample year: 2007, country: Croatia¹⁰⁴¹, *bottled red wine

incidence: 7/7, conc. range: 0.012–0.047 µg/l, Ø conc.: 0.022 µg/l, sample year: 2002/2003, country: Croatia¹⁰⁶⁰

incidence: 42/70*, conc. range: 0.012–0.126 µg/l, sample year: 2004, country: Lebanon/France¹⁰⁷⁰, sa from Lebanon, *finished red wine

incidence: 8/36*, conc. range: 0.01–0.10 µg/l, Ø conc.: 0.041 µg/l, sample year: unknown, country: Italy¹²¹⁸, *red wine aged in steel

incidence: 5/11*, conc. range: 0.12–0.30 µg/l, Ø conc.: 0.212 µg/l, sample year: 2000–2002 (production year), country: Austria¹²⁴⁵, sa from different countries

incidence: 15/15*, conc. range: ≤0.26 µg/l, sample year: 2006, country: Japan¹²⁹⁹, *domestic red wine

incidence: 20/23*, conc. range: ≤0.82 µg/l, sample year: 2006, country: Japan¹²⁹⁹, *imported red wine

incidence: 88/112, conc. range: ≤4.93 µg/l, sample year: 1997–2002 (production year), country: Italy¹³²⁶

incidence: 10/11*, conc. range: 0.002–0.100 µg/l, Ø conc.: 0.0282 µg/l, sample year: 2007, country: Italy¹³³², *commercial red wine

incidence: 26/27*, conc. range: ≤7.63 µg/l, Ø conc.: 1.269 µg/l, sample year: unknown, country: Italy¹³⁷⁴, *commercial red wine

incidence: 11/11*, conc. range: 0.46–4.72 µg/l, Ø conc.: 1.185 µg/l, sample year: unknown, country: Italy¹³⁷⁴, *home-made red wine

incidence: 3/7*, conc. range: 1.8**–4.4 µg/l, Ø conc.: 2.93 µg/l, sample year: unknown, country: Russia/Belgium¹³⁸³, sa from Russia, *thereof 2 sa home-made red wine, 1 sa contaminated**

incidence: 1/6, conc.: <0.03 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶, sa from Argentina

incidence: 9/29, conc. range: 0.10–1.33 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶

incidence: 3/5, conc. range: 0.20–0.29 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶, sa from France

incidence: 5/5, conc. range: 0.0.03–0.32 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶, sa from Italy

incidence: 5/5, conc. range: 0.03–0.25 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶, sa from Portugal

incidence: 1/1, conc.: <0.03 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶, sa from South Africa

incidence: 2/2, conc. range: 0.07–0.12 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶, sa from Spain

incidence: 1/3, conc.: <0.03 µg/l, sample year: 2005, country: Brazil¹⁴¹⁶, sa from Uruguay

incidence: 18/54, conc. range: <0.01 to ≤0.03 µg/l (10 sa), 0.03 to ≤0.20 µg/l (7 sa), 1.68 µg/l (1 sa), sample year: unknown, country: USA¹⁴¹⁹

incidence: 45/64*, conc. range: ≤1.31 µg/l, sample year: 1999–2006, country: Greece/UK¹⁴⁷⁶, sa from Greece, *red dry wine

incidence: 13/14*, conc. range: ≤2.00 µg/l, sample year: 1999–2006, country: Greece/UK¹⁴⁷⁶, sa from Greece, *red dessert wine

incidence: 4/14, conc. range: ≤0.20 µg/l, sample year: 2010, country: Japan¹⁴⁸⁹, sa domestic and imported

(1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA, 2 sa co-contaminated with FB₁ and OTA, 1 sa contaminated solely with OTA)

incidence: 18/63, conc. range: LOD–0.2 µg/l (6 sa), 0.2–0.5 µg/l (9 sa), >0.5 µg/l (3 sa, maximum: 1.18 µg/l), Ø conc.: 0.32 µg/l, sample year: 2008/2009, country: China¹⁴⁹⁷

incidence: 3/10, conc. range: 0.02–0.16 µg/kg, Ø conc.: 0.08 µg/kg, sample year: unknown, country: China¹⁵⁵⁴

incidence: 12/16, conc. range: 0.03–0.62 µg/l, sample year: 2009, country: Brazil¹⁵⁸³

incidence: 695/1,002, conc. range: LOQ–0.1 µg/l (449 sa), 0.1–0.5 µg/l (218 sa), 0.5–2 µg/l (26 sa), >2 µg/l (2 sa, maximum: 2.630 µg/l), Ø conc.: 0.121 µg/l, sample year: 2004–2008, country: Italy¹⁶²⁹

Fusarium Toxins

FUMONISIN B₁

incidence: 4/14, conc. range: <1.0 µg/l, sample year: 2010, country: Japan¹⁴⁸⁹, sa domestic and imported (1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA, 2 sa co-contaminated with FB₁ and OTA, 1 sa contaminated solely with FB₁)

FUMONISIN B₂

incidence: 2/2, conc. range: 0.5–0.7 µg/l, Ø conc.: 0.6 µg/l, sample year: 2004, country: Italy¹²³⁶

incidence: 2/9, conc. range: 1.1–2.4 µg/l, Ø conc.: 1.75 µg/l, sample year: 2006, country: Italy¹²³⁶

incidence: 4/30, conc. range: 0.6–1.2 µg/l, Ø conc.: 0.8 µg/l, sample year: 2007, country: Italy¹²³⁶

incidence: 1/1, conc.: 0.5 µg/l, sample year: 2008, country: Italy¹²³⁶

incidence: 16/56, conc. range: 1.0–25 µg/l, Ø conc.: 5.69 µg/l, sample year: 1991, 1994, 1996, 1998–2008, country: Denmark¹²⁷⁸, sa from different countries

incidence: 2/14, conc. range: <1.0 µg/l, sample year: 2010, country: Japan¹⁴⁸⁹, sa domestic and imported (1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA, 1 sa contaminated solely with FB₂)

FUMONISIN B₃

incidence: 1/14, conc.: <1.0 µg/l, sample year: 2010, country: Japan¹⁴⁸⁹, sa domestic and imported (1 sa co-contaminated with FB₁, FB₂, FB₃, and OTA)

Wine (rosé) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 1/4, conc.: <LOQ, sample year: 2011, country: Argentina¹⁵⁸¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/3, conc. range: 0.04–0.54 µg/l,

∅ conc.: 0.223 µg/l, sample year:

unknown, country: Morocco²²⁸

incidence: 1/5*, conc.: 0.0354 µg/l, sample

year: unknown, country: Brazil/

Argentina²⁶⁰, *rosé table wine

incidence: 13/20*, conc. range: ≤1.16 µg/l,

sample year: 1995–1999, country:

Greece²⁶³, *dry rosé wine

incidence: 29/32, conc. range: ≤0.161 µg/l,

sample year: 1997, country: Spain²⁹³, sa

partly from different European countries

incidence: 18/51, conc. range: ≤2.4 µg/l,

sample year: unknown, country:

Germany⁶³⁹, sa from Germany and other

countries

incidence: ?/15, conc. range: ≤0.123 µg/l,

sample year: 1994/1995, country:

Switzerland⁶⁹¹, sa from different countries

incidence: 2/2, conc. range: 0.03–1.13 µg/l,

∅ conc.: 58 µg/l, sample year: 2000,

country: Turkey⁸⁹⁴, sa from different

Turkish regions

incidence: 2/2, conc. range: 0.06–2.23 µg/l,

∅ conc.: 1.145 µg/l, sample year: 2001,

country: Turkey⁸⁹⁴, sa from different

Turkish regions

incidence: 2/4, conc. range: 0.28–0.40 µg/l,

∅ conc.: 0.34 µg/l, sample year: unknown,

country: Italy⁹⁰²

incidence: ?/75, conc. range: ≤4.07 µg/l,

sample year: 2002–2004, country: Italy⁹¹⁷

incidence: 5/7*, conc. range: 0.10–

0.82 µg/l, ∅ conc.: 0.32 µg/l, sample year:

2004, country: Italy⁹²⁸, *bottled rosé wine

incidence: 5/11, conc. range: LOD–LOQ

(2 sa), 0.25–0.40 µg/l (3 sa), sample year:

2003 (production year: 2000), country:

Spain⁹⁴⁷

incidence: 7/10, conc. range: LOD–LOQ

(2 sa), 0.11–0.46 µg/l (5 sa), sample year:

2003 (production year: 2001), country:

Spain⁹⁴⁷

incidence: 1/5, conc.: 0.28 µg/l, sample year:

2003 (production year: 2000), country:

Italy/Spain⁹⁵³, sa from Italy

incidence: 4/4, conc. range: >0.10–

0.50 µg/l (2 sa), >0.50–1 µg/l (1 sa),

1.04 µg/l (1 sa), sample year: 2003

(production year: 2002), country: Italy/

Spain⁹⁵³, sa from Italy

incidence: 1/1, conc.: 1.1 µg/l, sample year:

unknown country: Spain¹³⁶⁸

incidence: 5/6*, conc. range: ≤1.15 µg/l,

∅ conc.: 0.804 µg/l, sample year:

unknown, country: Italy¹³⁷⁴, *commercial

red wine

incidence: 2/2*, conc. range: 0.41–

0.64 µg/l, ∅ conc.: 0.525 µg/l, sample year:

unknown, country: Italy¹³⁷⁴, *home-made

red wine

incidence: 6/10*, conc. range:

≤0.38 µg/l, sample year: 1999–2006,

country: Greece/UK¹⁴⁷⁶, sa from Greece,

*rosé dry wine

Wine (white) may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 6/6, conc. range: 0.10–7.509 µg/

kg, sample year: unknown, country:

Germany⁹¹⁰ (1 sa co-contaminated with

AME and AOH, 5 sa contaminated solely

with AOH)

incidence: 1/19, conc.: 1.48 µg/l, sample

year: unknown, country: Canada⁹⁸⁶

incidence: 1/4, conc.: 0.67 µg/l, sample

year: unknown, country: Canada⁹⁸⁶, sa

from Argentina, Italy,

and USA

incidence: 2/18, conc. range: 1.2–2.0 µg/l,

∅ conc.: 1.6 µg/l, sample year: 2009/2010,

country: Germany¹⁰³⁸

incidence: 4/53, conc. range: <LOQ–18 µg/l, sample year: 2011, country: Argentina¹⁵⁸¹

ALTERNARIOL METHYL ETHER

incidence: 1/6, conc.: pr, sample year: unknown, country: Germany⁹¹⁰ (1 sa co-contaminated with AME and AOH)

incidence: 2/19, conc. range: 0.02–0.059 µg/l, Ø conc.: 0.0395 µg/l, sample year: unknown, country: Canada⁹⁸⁶

incidence: 3/53, conc. range: <LOQ–225 µg/l, sample year: 2011, country: Argentina¹⁵⁸¹

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 7/7, conc. range: 0.028–0.18 µg/l, Ø conc.: 0.073 µg/l, sample year: unknown, country: Morocco²²⁸

incidence: 2/15*, conc. range: 0.0283 µg/l, Ø conc.: 0.0283 µg/l, sample year: unknown, country: Brazil/Argentina²⁶⁰, sa from Brazil and Argentina, *white table wine

incidence: 4/18*, conc. range: 0.0212–0.0567 µg/l, Ø conc.: 0.03211 µg/l, sample year: unknown, country: Brazil/Argentina²⁶⁰, sa from Spain, France, Italy, and Portugal, *white table wine

incidence: 63/118*, conc. range: ≤1.72 µg/l, sample year: 1995–1999, country: Greece²⁶³, *dry white wine

incidence: 4/50*, conc. range: 0.11–1.13 µg/l, Ø conc.: 0.37 µg/l, sample year: 2002, country: Spain²⁶⁹, *includes Rioja, Penedés, Costers del Serge, Utiel-Requena, and ordinary wine

incidence: 7/13*, conc. range: ≤0.87 µg/l, Ø conc.: 0.27 µg/l, sample year: 1996, 1998–1999, country: Greece/France²⁹², sa from Greece, *dry white wine

incidence: 45/69, conc. range: ≤0.267 µg/l, sample year: 1997, country: Spain²⁹³, sa partly from California and different European countries

incidence: 14/27, conc. range: ≤0.126 µg/l, country: South Africa²⁹⁴

incidence: 5/31, conc. range: ≤0.022 µg/l, Ø conc.: 0.020 µg/l, sample year: unknown, country: Japan⁵⁷⁶

incidence: 31/32, conc. range: ≤0.156 µg/l, sample year: 2000–2002, country: Hungary⁶²³

incidence: 6/6, conc. range: 0.154–0.208 µg/l, Ø conc.: 0.185 µg/l, sample year: 1997, country: Spain⁶³³

incidence: 1/6, conc.: 0.192 µg/l, sample year: 1998, country: Spain⁶³³

incidence: 14/58, conc. range: ≤1.4 µg/l, sample year: unknown, country: Germany⁶³⁹, sa from Germany and other countries

incidence: 6/6*, conc. range: 0.05–0.30 µg/l, Ø conc.: 0.19 µg/l, sample year: 2000/2001, country: South Africa⁶⁴¹, *bottled white wine

incidence: 2/2*, conc. range: 0.04–0.33 µg/l, Ø conc.: 0.19 µg/l, sample year: 2000/2001, country: South Africa⁶⁴¹, *boxed white wine

incidence: 7/7*, conc. range: 0.06–0.18 µg/l, Ø conc.: 0.12 µg/l, sample year: 2000/2001, country: South Africa⁶⁴¹, *late harvest white wine

incidence: ?/3, conc. range: 0.01–0.08 µg/l, Ø conc.: 0.05 µg/l, sample year: 2000/2001, country: South Africa⁶⁴¹, sa from Italy

incidence: 14/362, conc. range: 0.051–0.1 µg/l, sample year: unknown, country: Canada⁶⁶⁴, sa from Canada and other countries; for detailed information please see the article

incidence: 10/43, conc. range: LOD–0.049 µg/l (8 sa), 0.050–0.500 µg/l (2 sa, maximum: 0.156 µg/l), sample year: 1999–2002, country: Canada⁶⁷⁶

incidence: 22/53, conc. range: LOD–0.049 µg/l (10 sa), 0.050–0.500 µg/l (10 sa),

>0.500 µg/l (2 sa, maximum: 3.720 µg/l),
sample year: 1999–2002, country:
Canada⁶⁷⁶, sa imported

incidence: ?/24, conc. range: ≤0.178 µg/l,
sample year: 1994/1995, country:
Switzerland⁶⁹¹, sa from Switzerland and
other countries

incidence: 33/219*, conc. range: <0.1 µg/l
(15 sa), 0.1 to <0.2 µg/l (11 sa), ≥0.2 µg/l
(7 sa, maximum: 0.26 µg/l), sample year:
1984–1986, 1997–2000, country:
Australia⁷⁴⁹, *sa in bottles included
sparkling, dessert, and fortified wine, and
Chardonnay juice

incidence: 2/7, conc. range: 0.05 µg/l,
sample year: 1984–1986, 1997–2000,
country: Australia⁷⁴⁹, *sa in tanks

incidence: 8/31, conc. range: <0.1 µg/l
(4 sa), 0.1 to <0.2 µg/l (2 sa), ≥0.2 µg/l
(2 sa, maximum: 0.50 µg/l), sample year:
1984–1986, 1997–2000, country:
Australia⁷⁴⁹, *sa in casks

incidence: 4/4, conc. range: 0.02–0.11 µg/l,
∅ conc.: 0.0475 µg/l, sample year: 2000,
country: Turkey⁸⁹⁴, sa from different
Turkish regions

incidence: 4/4, conc. range: 0.09–0.34 µg/l,
∅ conc.: 0.205 µg/l, sample year: 2001,
country: Turkey⁸⁹⁴, sa from different
Turkish regions

incidence: 4/10, conc. range: 0.60–
1.95 µg/l, sample year: unknown, country:
Italy⁹⁰²

incidence: ?/290, conc. range:
≤1.95 µg/l, sample year: 2002–2004,
country: Italy⁹¹⁷

incidence: 8/13*, conc. range: 0.03–0.42 µg/l,
∅ conc.: 0.16 µg/l, sample year: 2004,
country: Italy⁹²⁸, *bottled white wine

incidence: 2/3*, conc. range: 0.11–
0.17 µg/l, ∅ conc.: 0.14 µg/l, sample year:
2004, country: Italy⁹²⁸, *boxed white wine

incidence: 1/10, conc.: 0.09 µg/l, sample
year: 2003 (production year: 2001),
country: Spain⁹⁴⁷

incidence: 3/3, conc. range: 0.32–0.76 µg/l,
sample year: 2003 (production year:
2003), country: Spain⁹⁴⁷

incidence: 4/10, conc. range: LOD–0.10 µg/l
(3 sa), >0.10–0.50 µg/l (1 sa), sample year:
2003 (production year: 2002), country:
Italy/Spain⁹⁵³, sa from Italy

incidence: 11/13, conc. range: tr–0.263 µg/l,
sample year: 2009, country: Italy⁹⁶⁴

incidence: 4/7, conc. range: 0.015–
0.022 µg/l, sample year: 2002/2003,
country: Croatia¹⁰⁶⁰

incidence: 2/27*, conc. range: 0.01–
0.02 µg/l, ∅ conc.: 0.015 µg/l, sample year:
unknown, country: Italy¹²¹⁸, *white wine
aged in steel

incidence: 12/14*, conc. range:
≤0.010 µg/l, sample year: 2006, country:
Japan¹²⁹⁹, *domestic white wine

incidence: 16/22*, conc. range: ≤0.51 µg/l,
sample year: 2006, country: Japan¹²⁹⁹,
*imported white wine

incidence: 2/7*, conc. range: ≤0.06 µg/l,
∅ conc.: 0.045 µg/l, sample year:
unknown, country: Italy¹³⁷⁴, *commercial
white wine

incidence: 2/2*, conc. range: 0.10–
0.97 µg/l, ∅ conc.: 0.535 µg/l, sample year:
unknown, country: Italy¹³⁷⁴, *home-made
white wine

incidence: 7/27, conc. range: <0.01 to
≤0.03 µg/l (3 sa), 0.03 to ≤0.20 µg/l (4 sa,
maximum: 0.08 µg/l), sample year:
unknown, country: USA¹⁴¹⁹

incidence: 31/49*, conc. range: ≤0.51 µg/l,
sample year: 1999–2006, country: Greece/
UK¹⁴⁷⁶, sa from Greece, *white
dry wine

incidence: 9/13*, conc. range: ≤1.16 µg/l,
sample year: 1999–2006, country: Greece/
UK¹⁴⁷⁶, sa from Greece, *white dessert
wine

incidence: 1/14, conc.: 0.42 µg/l, sample
year: 2010, country: Japan¹⁴⁸⁹, sa domestic
and imported

incidence: 4/42, conc. range:
LOD–0.2 µg/l (3 sa), 0.53 µg/l (1 sa),
∅ conc.: 0.23 µg/l, sample year:
2008/2009, country: China¹⁴⁹⁷

incidence: 1/7, conc.: 0.03 µg/l, sample
year: 2009, country: Brazil¹⁵⁸³

incidence: 125/204, conc. range: LOQ–
0.1 µg/l (97 sa), 0.1–0.5 µg/l (25 sa),
0.5–2 µg/l (3 sa, maximum: 1.360 µg/l),
∅ conc.: 0.086 µg/l, sample year: 2004–
2008, country: Italy¹⁶²⁹

Fusarium Toxins

FUMONISIN B₁

incidence: 2/14, conc. range: <1.0 µg/l,
sample year: 2010, country: Japan¹⁴⁸⁹, sa
domestic and imported

FUMONISIN B₂

incidence: 1/13, conc.: 1.0 µg/l, sample
year: 2002/2003, 2008, country:
Denmark¹²⁷⁸, sa from different countries

Wine, miscellaneous may contain
the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 2/2*, conc. range: 2.04–2.70 µg/
kg, ∅ conc.: 2.37 µg/kg, sample year:
unknown, country: Germany⁹¹⁰, *mulled
wine (1 sa co-contaminated with AME
and AOH, 1 sa contaminated solely with
AOH)

incidence: 4/6, conc. range: 1.2–4.9 µg/kg,
∅ conc.: 3.28 µg/kg, sample year:
unknown, country: Germany¹²¹², *different
kinds of wine (3 sa co-contaminated with
AME and AOH); for detailed information
please see the article

ALTERNARIOL METHYL ETHER

incidence: 1/2*, conc.: pr, sample year:
unknown, country: Germany⁹¹⁰, *mulled
wine (1 sa co-contaminated with AME
and AOH)

incidence: 4/6, conc. range: 0.1–0.3 µg/kg,
∅ conc.: 0.2 µg/kg, sample year: unknown,
country: Germany¹²¹², *different kinds of
wine (3 sa co-contaminated with AME
and AOH); for detailed information
please see the article

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/56*, conc. range: 5–10 µg/
kg, ∅ conc.: 7.50 µg/kg, sample year:
1988/1989, country: China/USA¹³⁵², sa from
China, *yellow rice wine

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 15/18*, conc. range: ≤2.82 µg/l,
sample year: 1995–1999, country:
Greece²⁶³, *dessert wine

incidence: 6/8*, conc. range: ≤1.75 µg/l,
sample year: 1995–1999, country:
Greece²⁶³, *Retsina

incidence: 4/10*, conc. range: 0.14–0.71 µg/l,
∅ conc.: 0.44 µg/l, sample year: 2002,
country: Spain²⁶⁹, *sparkling wine

incidence: 9/20* **, conc. range: 0.09–
15.25 µg/l, ∅ conc.: 4.47 µg/l, sample year:
2002, country: Spain²⁶⁹, **included
Malaga, Muscatel, Sherry, Vermouth,
Mistelle

incidence: 6/7*, conc. range: ≤3.20 µg/l,
∅ conc.: 0.94 µg/l, sample year: 1995–
1997, 1999, country: Greece/France²⁹², sa
from Greece, *sweet wine

incidence: 35/47*, conc. range:
nd–0.254 µg/l, sample year: 1997, country:
Spain²⁹³, sa partly from different
European countries, *Sherry type wine
(aperitif wine)

incidence: 15/16*, conc. range: ≤2.54 µg/l,
sample year: 1997, country: Spain²⁹³, sa
from Spain and Italy, *dessert wine

incidence: 10/12*, conc. range:
≤0.037 µg/l, sample year: 1997, country:
Spain²⁹³, *sparkling wine

incidence: 3/3*, conc. range: ≤ 2.672 $\mu\text{g/l}$,
country: South Africa²⁹⁴, *noble late
harvest wine

incidence: 4/7*, conc. range: ≤ 0.168 $\mu\text{g/l}$,
country: South Africa²⁹⁴, *fortified wine

incidence: 9/15*, conc. range: 0.001–
3.856 $\mu\text{g/l}$, sample year: 1998/1999,
country: Italy³³⁰, sa from different Italian
origins, *dessert wine

incidence: 3/3*, conc. range: 0.05–
0.08 $\mu\text{g/l}$, \emptyset conc.: 0.063 $\mu\text{g/l}$, sample year:
unknown, country: Portugal³⁹⁴, *Port wine
adulteration (white)

incidence: ?/6*, conc. range: ≤ 0.017 $\mu\text{g/l}$,
sample year: 1975/1995, country:
Switzerland⁶⁹¹, sa from Portugal, *Port
wine

incidence: 2/2*, conc. range: 0.029–
0.054 $\mu\text{g/l}$, \emptyset conc.: 0.042 $\mu\text{g/l}$, sample
year: 1994/1995, country: Switzerland⁶⁹¹,
sa from Spain, *Sherry

incidence: 2/2*, conc. range: 0.044–
0.337 $\mu\text{g/l}$, \emptyset conc.: 0.191 $\mu\text{g/l}$, sample
year: 1994/1995, country: Switzerland⁶⁹¹,
sa from Italy, *Marsala

incidence: 3/3*, conc. range: 0.049–
0.451 $\mu\text{g/l}$, \emptyset conc.: 0.290 $\mu\text{g/l}$, sample
year: 1994/1995, country: Switzerland⁶⁹¹,
sa from Spain, *Malaga

incidence: ?/28*, conc. range: ≤ 1.90 $\mu\text{g/l}$,
sample year: 2002–2004, country: Italy⁹¹⁷,
*dessert wine

incidence: 8/13*, conc. range: LOD–LOQ
(2 sa), 0.10–0.40 $\mu\text{g/l}$ (6 sa), sample year:
2003 (production year: 2001), country:
Spain⁹⁴⁷, *dessert wine

incidence: 7/9*, conc. range: LOD–
0.10 $\mu\text{g/l}$ (1 sa), >0.10 –0.50 $\mu\text{g/l}$ (4 sa),
 >0.50 –1 $\mu\text{g/l}$ (2 sa, maximum: 0.82 $\mu\text{g/l}$),
sample year: 2003 (production year:
2000), country: Italy/Spain⁹⁵³,
sa from Italy, *dessert wine

incidence: 5/10*, conc. range: LOD–
0.10 $\mu\text{g/l}$ (1 sa), >0.10 –0.50 $\mu\text{g/l}$ (1 sa),
 >0.50 –1 $\mu\text{g/l}$ (1 sa), >1 –2 $\mu\text{g/l}$ (2 sa,
maximum: 1.64 $\mu\text{g/l}$), sample year: 2003

(production year: 2001), country: Italy/
Spain⁹⁵³, sa from Italy, *dessert wine

incidence: 186/188*, conc. range: LOD to
<LOQ (17 sa), LOQ–0.500 $\mu\text{g/l}$ (102 sa),
 >0.500 –2.000 $\mu\text{g/l}$ (49 sa), >2.000 $\mu\text{g/l}$
(18 sa, maximum: 4.630 $\mu\text{g/l}$), sample year:
2002–2005, country: Spain⁹⁵⁷, *sweet wine

incidence: 47/49*, conc. range: LOD to
<LOQ (12 sa), LOQ–0.500 $\mu\text{g/l}$ (29 sa),
 >0.500 –2.000 $\mu\text{g/l}$ (6 sa, maximum:
1.218 $\mu\text{g/l}$), sample year: 2002–2005,
country: Spain⁹⁵⁷, sa from France, *sweet
wine

incidence: 2/3*, conc. range: LOD to
<LOQ, sample year: 2002–2005, country:
Spain⁹⁵⁷, sa from Germany,
*sweet wine

incidence: 3/5*, conc. range: LOD to
<LOQ (2 sa), 0.029 $\mu\text{g/l}$ (1 sa), sample
year: 2002–2005, country: Spain⁹⁵⁷, sa
from Italy, *sweet wine

incidence: 1/1*, conc.: 0.026 $\mu\text{g/l}$, sample
year: 2002–2005, country: Spain⁹⁵⁷, sa
from Japan, *sweet wine

incidence: 9/9*, conc. range: LOD to
<LOQ (7 sa), LOQ–0.500 $\mu\text{g/l}$ (2 sa,
maximum: 0.090 $\mu\text{g/l}$), sample year: 2002–
2005, country: Spain⁹⁵⁷, sa from Austria,
*sweet wine

incidence: 1/1*, conc.: <0.020 $\mu\text{g/l}$, sample
year: 2002–2005, country: Spain⁹⁵⁷, sa
from Canada, *sweet wine

incidence: 9/9*, conc. range: LOD to
<LOQ (3 sa), LOQ–0.500 $\mu\text{g/l}$ (6 sa,
maximum: 0.070 $\mu\text{g/l}$), sample year: 2002–
2005, country: Spain⁹⁵⁷, sa from Chile,
*sweet wine

incidence: 2/2*, conc. range: 0.020–
0.047 $\mu\text{g/l}$, sample year: 2002–2005,
country: Spain⁹⁵⁷, sa from Slovenia, *sweet
wine

incidence: 6/6*, conc. range: LOQ–
0.500 $\mu\text{g/l}$ (4 sa), >0.500 –2.000 $\mu\text{g/l}$ (1 sa),
2.947 $\mu\text{g/l}$ (1 sa), sample year: 2002–2005,
country: Spain⁹⁵⁷, sa from Greece, *sweet
wine

incidence: 2/2*, conc. range: LOD to <LOQ (1 sa), 0.030 µg/l (1 sa), sample year: 2002–2005, country: Spain⁹⁵⁷, sa from Hungary, *sweet wine

incidence: 8/9*, conc. range: LOD to <LOQ (1 sa), LOQ–0.500 µg/l (7 sa, maximum: 0.139 µg/l), sample year: 2002–2005, country: Spain⁹⁵⁷, sa from Portugal, *sweet wine

incidence: 1/1*, conc.: 0.029 µg/l (1 sa), sample year: 2002–2005, country: Spain⁹⁵⁷, sa from New Zealand, *sweet wine

incidence: 1/1*, conc.: <0.020 µg/l, sample year: 2002–2005, country: Spain⁹⁵⁷, sa from South Africa, *sweet wine

incidence: 2/2*, conc. range: <0.020 µg/l, sample year: 2002–2005, country: Spain⁹⁵⁷, sa from Switzerland, *sweet wine

incidence: 1/1*, conc.: 0.090 µg/l, sample year: 2002–2005, country: Spain⁹⁵⁷, sa from USA, *sweet wine

incidence: 6/8*, conc. range: 0.56–3.42 µg/l, Ø conc.: 2.42 µg/l, sample year: probably 2005, country: Spain¹¹⁴³, *sweet wine from Moscatel grapes

incidence: 8/8*, conc. range: 0.39–7.30 µg/l, Ø conc.: 2.86 µg/l, sample year: probably 2005, country: Spain¹¹⁴³, *sweet wine from Pedro Ximenez grapes

incidence: 1/2*, conc.: 0.13 µg/l sample year: unknown, country: Spain¹²²⁶, *sparkling wine

incidence: 13/25*, conc. range: 0.10–0.50 µg/l (8 sa), 0.50 to ≤0.96 µg/l (5 sa), sample year: unknown, country: Spain¹²²⁶, *fortified wines long aging in wooden casks

incidence: 1/12*, conc.: 0.08 µg/l sample year: unknown, country: Spain¹²²⁶, *fortified wines, 2nd fermentation with Flor yeast, long aging in wooden casks

incidence: 69/340*, conc. range: ≤2.1 µg/l, sample year: unknown, country: Portugal¹³⁵⁷, *included Port wine, Vinho Verde and wines from different regions of Portugal

incidence: 1/1*, conc.: 0.29 µg/l, sample year: unknown, country: Italy¹³⁷⁴, *dessert wine (Marsala)

incidence: 1/2*, conc.: 0.014 µg/l, sample year: unknown, country: USA¹⁴¹⁹, *fruit/ berry blended wine

Fusarium Toxins

FUMONISIN B₁

incidence: 1/15*, conc.: 17.3 µg/l, sample year: unknown, country: China¹⁶⁴⁷, *Chinese rice wine

FUMONISIN B₂

incidence: 1/6*, conc.: 2.8 µg/l, sample year: 1998, 2002, 2007, country: Denmark¹²⁷⁸, sa from Portugal, *Port wine

Wine cheese see Cheese (Wine cheese)

Wine vinegar see Vinegar

White cheese see Cheese (White cheese)

Wort (sorghum wort) may contain the following mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 21/44, conc. range: 26–285 µg/l, sample year: unknown, country: Botswana¹²⁹⁸

Würstel see Sausage

Yam may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: ?/8, conc. range: 22–45 µg/kg, sample year: 1977, country: Nigeria¹⁷⁷

AFLATOXIN

incidence: 22/57*, Ø conc.: 88.8 µg/kg**, sample year: unknown, country: Philippines⁹⁵⁶, *yam and yam products, **of pos sa?

Yam chips see Chips (yam chips)

Yogurt may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN M₁

incidence: 44/54, conc. range: 0.05–0.47 µg/kg, Ø conc.: 0.2 µg/kg, sample year: 1972–1974, country: Germany⁶

incidence: 91/114, conc. range: ≤0.496 µg/kg, Ø conc.: 0.01808 µg/kg, sample year: 1995, country: Italy⁵⁸

incidence: 31/60, conc. range: 0.017–0.124 µg/l, Ø conc.: 0.045 µg/kg, sample year: 1997, country: Korea⁹⁶

incidence: 3/4, conc. range: 0.00971–0.06375 µg/kg, Ø conc.: 0.03392 µg/kg, sample year: unknown, country: USA¹²⁰

incidence: 1/2*, conc.: 0.03 µg/l, sample year: 1998, country: Kuwait³²⁹, *full cream yogurt

incidence: 73/120, conc. range: 0.001–0.010 µg/l (49 sa), >0.010–0.050 µg/l (24 sa, maximum: 0.0321 µg/l), Ø conc.: 0.00906 µg/l, sample year: 1996, country: Italy⁶¹³, sa from Belgium, France and Italy

incidence: 4/13*, conc. range: 0.02–0.05 µg/kg (4 sa, maximum: 0.04 µg/kg), sample year: unknown, country: UK⁷³⁵, *plain yogurt

incidence: 2/17*, conc. range: 0.02–0.05 µg/kg, (2 sa, maximum: 0.03 µg/kg), sample year: unknown, country: UK⁷³⁵, *fruit yogurt

incidence: 2/72, conc. range: conc. range: 0.0251–0.05158 µg/kg, Ø conc.: 0.03834 µg/kg, sample year: 2008, country: Spain⁹⁶⁷

incidence: 64/66*, conc. range: 0.003–0.010 µg/l (56 sa), 0.011–0.020 µg/l (7 sa), 0.038 µg/l (1 sa), sample year: unknown, country: Italy⁹⁶⁸, *yogurt made from pasteurized milk

incidence: 3/24*, conc. range: 0.007–0.044 µg/l, Ø conc.: 0.02 µg/kg, sample

year: 2002, country: Taiwan¹⁰⁸³, *drinking yogurt

incidence: 32/40, conc. range: 0.061–0.090 µg/kg (18 sa), 0.091–0.120 µg/kg (8 sa), >0.120 µg/kg (6 sa, maximum: 0.36564 µg/kg), sample year: 2004, country: Turkey¹¹⁰²

incidence: 2/48*, conc. range: 0.043–0.045 µg/kg, Ø conc.: 0.044 µg/kg, sample year: 2001, country: Portugal¹²⁵⁸, *natural yogurt

incidence: 16/48*, conc. range: 0.011–0.035 µg/kg (6 sa), 0.036–0.050 µg/kg (4 sa), 0.051–0.065 µg/kg (2 sa), >0.065 µg/kg (4 sa, maximum: 0.098 µg/kg), Ø conc.: 0.05112 µg/kg, sample year: 2001, country: Portugal¹²⁵⁸, *yogurt with pieces of strawberries

incidence: 5/6, conc. range: 0.013–0.022 µg/kg, sample year: unknown, country: Brazil/USA¹³⁹⁹, sa from Brazil

incidence: 68/104*, conc. range: 0.001–0.030 µg/kg (40 sa), 0.031–0.050 µg/kg (16 sa), 0.051–0.100 µg/kg (12 sa), sample year: 2005, country: Turkey¹⁴⁵⁸, *ordinary yogurt

incidence: 7/21*, conc. range: 0.001–0.030 µg/kg (3 sa), 0.031–0.050 µg/kg (2 sa), 0.051–0.100 µg/kg (2 sa), sample year: 2005, country: Turkey¹⁴⁵⁸, *fruit yogurt

incidence: 29/52*, conc. range: 0.001–0.030 µg/kg (12 sa), 0.031–0.050 µg/kg (6 sa), 0.051–0.100 µg/kg (6 sa), 0.101–0.500 µg/kg (5 sa), sample year: 2005, country: Turkey¹⁴⁵⁸, *strained yogurt

incidence: 18/25*, conc. range: 0.0025–0.0695 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey, *whole-fat yogurt

incidence: 10/25*, conc. range: 0.0036–0.078 µg/kg, sample year: 2010, country: Turkey/Kyrgyzstan¹⁵¹⁶, sa from Turkey, *semi-fat yogurt

incidence: 5/40*, conc. range: >0.025 µg/l (4 sa), 0.0617 µg/l (1 sa), sample year:

2009, country: Iran¹⁵²², *pasteurized yogurt

incidence: 4/10*, conc. range: >0.025 µg/l (3 sa), 0.053 µg/l (1 sa), sample year: 2009, country: Iran¹⁵²², *local yogurt

incidence: 70/80, conc. range: 0.005–0.025 µg/kg (21 sa), 0.026–0.050 µg/kg (32 sa), 0.051–0.100 µg/kg (6 sa), >0.100 µg/kg (10 sa, maximum: 0.475 µg/kg), Ø conc.:

0.0661 µg/kg, sample year: 2007/2008, country: Turkey¹⁵²³

incidence: 72/80*, conc. range: 0.005–0.025 µg/kg (28 sa), 0.026–0.050 µg/kg (33 sa), 0.051–0.100 µg/kg (8 sa), >0.100 µg/kg (3 sa, maximum: 0.264 µg/kg), Ø conc.: 0.0365 µg/kg, sample year: 2007/2008, country: Turkey¹⁵²³, *ayran: yogurt drink

Tables

Table 1. *Alternaria* toxins in foodstuffs

Altenuene

Barley; fruit (apple); fruit, dried; maize; millet; olive; rice; sorghum; tomato; wheat

Alternariol

Barley; beverage; bran (wheat bran); bread; cereal (breakfast cereals); flour (spelt flour); flour (wheat flour); food; food (infant food); fruit (apple); fruit (mandarin fruit); fruit, dried; juice (apple juice); juice (apple concentrate); juice (cranberry juice); juice (grape juice); juice (grapefruit juice); juice (orange juice); juice (raspberry juice); juice (tomato juice); juice (vegetable juice); maize; millet; nectar (cranberry nectar); nectar (prune nectar); olive; paste (tomato paste); puree; sauce (apple sauce); sauce (tomato sauce); sesame; soybean; spice (pepper); sunflower seed; tangerine; tomato; tomato ketchup; triticale; wheat; wine (red); wine (rosè); wine (white); wine, miscellaneous

Alternariol methyl ether

Barley; beverage; bran (wheat bran); bread; cereal (breakfast cereawwls); flakes (oat flakes); flour (wheat flour); food; food (infant food); fruit (apple); fruit (mandarin fruit); fruit (melon); fruit, dried; juice (apple juice); juice (apple concentrate); juice (cranberry juice); juice (grape juice); juice (orange juice); juice (tomato juice); juice (vegetable juice); maize; millet; nectar (cranberry nectar); nectar (prune nectar); olive; paste (tomato paste); puree; sauce (tomato sauce); sesame; sorghum; soybean; spice (pepper); sunflower seed; tangerine; tomato; tomato ketchup; triticale; wheat; wine (red); wine (white); wine, miscellaneous

Altertoxin I

Food; fruit (apple); maize; sorghum; wheat

Mascrosporin A

Millet; sesame

Tentotoxin

Fruit, dried; puree; tomato; wheat

Tenuazonic acid

Beer; bran (wheat bran); cassava; cereal; flakes (cornflakes); flakes (oat flakes); flour (rye flour); flour (wheat flour); fruit (apple); fruit (mandarin fruit); fruit (melon); fruit, dried; grit (maize grits); juice; juice (apple juice); juice (apricot juice); juice (banana juice); juice (black currant juice); juice (cherry juice); juice (grape juice); juice (orange juice); juice (pear juice); juice (pomegranate juice); juice (strawberry juice); juice (tomato juice); maize; millet; olive; pulp (tomato pulp); puree; rice; sauce (tomato sauce); sesame; sorghum; spice; spice (coriander); spice (cumin); spice (curcuma); spice (curry); spice (ginger); spice (paprika); spice (pepper); sunflower seed; tomato; tomato ketchup; wheat

Table 2. *Aspergillus* toxins in foodstuffs

Aflatoxin(s) include aflatoxin, aflatoxin B, aflatoxins (B₁, B₂), aflatoxins (B₁, G₁), aflatoxins (B, G), aflatoxins (M₁, M₂), aflatoxins (B₁, B₂, G₁), aflatoxins (B₁, B₂, G₁, G₂), aflatoxins, and aflatoxins (total)

Aflatoxicol

Milk (cow milk); milk (human breast milk); nut (pistachio nuts)

Aflatoxin B₁

Barley; bean; beefburger; beer; betel nut; beverage; bondakaledkai; bran (rice bran); bread; breadfruit; buckwheat; butter; butter (cocoa butter); butter (peanut butter); cake (peanut cake); candy (coconut candies); candy (peanut candies); cassava; cereal; cereal (breakfast cereals); cereal (infant cereals); cheese; cheese (Bhutanese cheese); cheese (Cottage cheese); cheese (Ras cheese); chestnut; chickpea; chips (cassava chips); chips (yam chips); chocolate; cocoa; cocoa bean; cocoa hazelnut cream; cocoa mass; cocoa nib; coffee; coffee bean; confectionery; congressbele; copra; cottonseed; cowpea; curd (bean curd); date; dough (maize dough); drink; egg; fig; fish; flakes (cornflakes); flour; flour (cassava flour); flour (gram flour); flour (lentil flour); flour (maize flour); flour (rice flour); flour (rye flour); flour (soybean flour); flour (wheat flour); food; food (baby food); food (infant food); foodstuff; fruit (lemon); fruit (mango); fruit (quince); fruit, dried; fruits and vegetables; grains; gram; gram (black gram); gram (green gram); grit (maize grits); gruel; helva; herbs; hot dog; incaparina; jam (bean jam); job 's-tears; juice (apple juice); juice (guava juice); juice (mango juice); kenkey; kernel (apricot kernels); kidney (hare kidney); kidney (roe deer kidney); kubeba; legume; lentil; linseed; liquorice; liver (chicken liver); liver (duck liver); liver (hare liver); liver (pheasant liver); liver (pig liver); liver (roe deer liver); Mahua seed; maize; malt; malt (barley malt); marchpane (almond paste); mchuzi mix; meal (copra meal); meal (cottonseed meal); meal (maize meal); meal (peanut meal); meal (pistachio meal); meal (posho meal); meat (luncheon meat); medicinal plant; meju; melon seed; milk; milk (buffalo milk); milk (camel milk); milk (cow milk); milk (human breast milk); milk (sheep milk); milk substitute; milk thistle; millet; muesli; muscle (chicken muscle); must; nut; nut (almonds); nut (Brazil nuts, paranuts); nut (cashew nuts); nut (coconuts); nut (grogannuts); nut (hazelnuts); nut (peanuts); nut (pecan nuts); nut (pine nuts); nut (pistachio nuts); nut (shea-nuts); nut (tiger-nuts); nut (walnuts); nut cocktail; nuts and seeds; oat; oil; oil (coconut oil); oil (mustard oil); oil (olive oil); oil (palm oil); oil (peanut oil); oil (plant oil); oil (rapeseed oil); oil (sesame oil); oil (soybean oil); oil (sunflower oil); oil seed; olive; paste (bean paste); paste (fig paste); paste (hazelnut paste); paste (sesame paste); paste (soybean paste); pea; phane; popcorn; powder (cocoa powder); powder (copra powder); powder (milk powder); product; product (bakery products); product (cereal products); product (cocoa products); product (coconut products); product (dairy products); product (fruit products); product (maize products); product (melon seed products); product (milk products); product (nut products); product (rice products); product (sesame products); product (sorghum products); product (wheat products); raisin; rice; rye; sauce (peanut sauce); sauce (soy sauce); sausage; sesame; shiro; snack; sorghum; soybean; spice; spice (ammi); spice (cardamom); spice (cayenne pepper, chilli); spice (cinnamon); spice (coriander); spice (cumin); spice (curry); spice (fennel); spice (fenugreek); spice (garlic); spice (ginger); spice (Indian cassia); spice (mustard); spice (nutmeg); spice (paprika); spice (pepper); spice (peppermint); spice (saffron); spice (turmeric); starch (maize starch); starch (rice starch); starch (wheat starch); sugar; suji; sunflower seed; tea; teff; tobacco; tofu; vegetables; wheat; wine; wine, miscellaneous; yam

(continued)

Table 2. (continued)

Aflatoxin B₂

Barley; bean; beer; betel nut; beverage; bondakaledkai; bread; buckwheat; butter (cocoa butter); butter (peanut butter); cake (peanut cake); candy (coconut candies); candy (peanut candies); cereal (breakfast cereals); cereal (infant cereals); cheese; cheese (Bhutanese cheese); cheese (Cottage cheese); chips (yam chips); chocolate; cocoa; cocoa bean; cocoa mass; cocoa nib; coffee; coffee bean; confectionery; congressbele; copra; date; dough (maize dough); egg; fig; flour; flour (barley flour); flour (cassava flour); flour (gram flour); flour (lentil flour); flour (maize flour); flour (oat flour); flour (potato flour); flour (rice flour); flour (rye flour); flour (soybean flour); flour (wheat flour); food; food (baby food); food (infant food); foodstuff; fruit (lemon); fruit (mango); fruit, dried; grit (maize grits); gruel; hot dog; incaparina; jam (bean jam); job 's-tears; kenkey; kernel (apricot kernels); kubeba; maize; marchpane (almond paste); meal (copra meal); meal (maize meal); meal (pistachio meal); meal (posho meal); meat (luncheon meat); medicinal plant; milk (human breast milk); milk substitute; millet; nut; nut (almonds); nut (Brazil nuts, paranuts); nut (cashew nuts); nut (coconuts); nut (grogannuts); nut (hazelnuts); nut (peanuts); nut (pine nuts); nut (pistachio nuts); nut (shea-nuts); nut (tiger-nuts); nut (walnuts); oil (coconut oil); oil (olive oil); oil (peanut oil); oil (sesame oil); oil (sunflower oil); paste (fig paste); paste (hazelnut paste); paste (sesame paste); paste (soybean paste); phane; popcorn; porridge; powder (cocoa powder); product (bakery products); product (cereal products); product (maize products); product (nut products); product (wheat products); raisin; rice; rye; sausage; sesame; sorghum; soybean; spice; spice (ammi); spice (cardamom); spice (cayenne pepper, chilli); spice (coriander); spice (cumin); spice (fennel); spice (fenugreek); spice (garlic); spice (ginger); spice (Indian cassia); spice (mustard); spice (nutmeg); spice (paprika); spice (pepper); spice (turmeric); starch (rice starch); starch (wheat starch); sugar; sunflower seed; tobacco; wheat; wine; wine (red)

Aflatoxin G₁

Barley; bean; beer; betel nut; bread; buckwheat; butter (peanut butter); cake (peanut cake); candy (coconut candies); candy (peanut candies); celery seed; cereal; cereal (breakfast cereals); cereal (infant cereals); cheese (Ras cheese); chips (yam chips); chocolate; cocoa; cocoa bean; cocoa mass; cocoa nib; coffee; coffee bean; copra; curd (bean curd); date; dough (maize dough); egg; fig; fish; flour (barley flour); flour (lentil flour); flour (maize flour); flour (oat flour); flour (potato flour); flour (rye flour); flour (soybean flour); flour (Vetch flour); flour (wheat flour); food; food (baby food); foodstuff; fruit (lemon); fruit (mango); fruit, dried; gruel; incaparina; job 's-tears; juice (apple juice); kenkey; kernel (apricot kernels); maize; meal (copra meal); meal (maize meal); meat (luncheon meat); medicinal plant; milk (human breast milk); milk substitute; millet; nut; nut (almonds); nut (Brazil nuts, paranuts); nut (cashew nuts); nut (coconuts); nut (grogannuts); nut (hazelnuts); nut (peanuts); nut (pecan nuts); nut (pine nuts); nut (pistachio nuts); nut (tiger-nuts); nut (walnuts); nut cocktail; oil (coconut oil); oil (olive oil); oil (peanut oil); oil (sesame oil); oil (sunflower oil); paste (fig paste); paste (hazelnut paste); paste (sesame paste); paste (soybean paste); pea; phane; pinhol; popcorn; powder (cocoa powder); product (cereal products); product (fruit products); product (maize products); product (nut products); product (sorghum products); raisin; rice; sauce (soy sauce); sesame; sorghum; soybean; spice; spice (ammi); spice (cardamom); spice (cayenne pepper, chilli); spice (coriander); spice (cumin); spice (fennel); spice (fenugreek); spice (garlic); spice (ginger); spice (Indian cassia); spice (mustard); spice (nutmeg); spice (paprika); spice (pepper); spice (turmeric); starch (rice starch); starch (wheat starch); sunflower seed; tritcale; wheat; wine

(continued)

Table 2. (continued)

Aflatoxin G₂

Barley; bean; beer; betel nut; beverage; buckwheat; butter (peanut butter); cake (peanut cake); candy (coconut candies); candy (peanut candies); cereal; cereal (breakfast cereals); cereal (infant cereals); chips (yam chips); chocolate; cocoa; cocoa mass; cocoa nib; coffee; coffee bean; copra; dough (maize dough); egg; fig; fish; flour; flour (barley flour); flour (lentil flour); flour (maize flour); flour (oat flour); flour (rice flour); flour (rye flour); flour (wheat flour); food; food (baby food); fruit (lemon); fruit (mango); fruit, dried; gruel; kenkey; maize; meal (copra meal); medicinal plant; milk (human breast milk); milk substitute; nut; nut (Brazil nuts, paranuts); nut (cashew nuts); nut (coconuts); nut (grogannuts); nut (hazelnuts); nut (peanuts); nut (pistachio nuts); nut (tiger-nuts); nut (walnuts); ochra; oil (olive oil); oil (peanut oil); oil (sesame oil); oil (sunflower oil); paste (fig paste); paste (hazelnut paste); paste (sesame paste); paste (soybean paste); phane; popcorn; product (cereal products); product (fruit products); product (nut products); product (wheat products); raisin; rice; sauce (soy sauce); sesame; sorghum; soybean; spice; spice (cardamom); spice (cayenne pepper, chilli); spice (coriander); spice (cumin); spice (fennel); spice (ginger); spice (Indian cassia); spice (mustard); spice (nutmeg); spice (paprika); spice (pepper); spice (turmeric); starch (maize starch); starch (rice starch); starch (wheat starch); sunflower seed; triticale; wheat; wine

Aflatoxin M₁

Butter; butter (peanut butter); cheese; cheese (Blue cheese); cheese (Brie cheese); cheese (Butter cheese); cheese (Camembert cheese); cheese (Cecil cheese); cheese (Cheddar cheese); cheese (Cheshire cheese); cheese (Civil cheese); cheese (Cream cheese); cheese (Domiat cheese); cheese (Double Gloucester cheese); cheese (Edam cheese); cheese (Feta cheese); cheese (Gouda cheese); cheese (Grana Padano cheese); cheese (Gravier cheese); cheese (Haverti cheese); cheese (Kashar cheese); cheese (Lancashire cheese); cheese (Leicester cheese); cheese (Lor cheese); cheese (Maribo cheese); cheese (Minas cheese); cheese (Mozzarella cheese); cheese (Münster cheese); cheese (Parmesan cheese); cheese (Ras cheese); cheese (Samsoe cheese); cheese (Surk cheese); cheese (Tulum cheese); cheese (Van Otlu cheese); cheese (Wensleydale cheese); cheese (White cheese); cheese (White Pickle cheese); curd (cheese curd); dessert; food; food (baby food); food (infant food); gruel; ice cream; kidney (poultry kidney); koshk; liver (pig liver); maize; medicinal plant; milk; milk (buffalo milk); milk (camel milk); milk (cow milk); milk (ewe's milk); milk (goat milk); milk (human breast milk); milk (sheep milk); milk (sheep/goat milk); milk, buttermilk; milk, infant formula; milk, UHT milk; milk packet; nut (peanuts); nut (pistachio nuts); powder (milk powder); product (milk products); yogurt

Aflatoxin M₂

Butter (peanut butter); cheese; gruel; milk (cow milk); milk (goat milk); milk (human breast milk); nut (peanuts)

(continued)

Table 2. (continued)

Aflatoxin(s)

Barley; bean; bee pollen; beer; betel nut; bran (rice bran); bread; bukolo; butter; butter (peanut butter); butter (sesame butter); cake (peanut cake); candy (peanut candies); candy (pistachio candies); cassava; cereal; cereal (breakfast cereals); chestnut; chips (yam chips); cocoa; cocoa bean; cocoa hazelnut cream; coffee; coffee bean; copra; cowpea; date; dough (maize dough); drink (alcoholic drink); egg; Emu aran; fig; fish/shrimp; flakes (cornflakes); flakes (maize flakes); flour (maize flour); flour (wheat flour); food; fruit, dried; fruits and nuts; grains; grit (maize grits); herbs; kenkey; kernel (apricot kernels); kucha; lentil; Mahua seed; maize; maize roti; malt (maize malt); malt (sorghum malt); meal; meal (copra meal); meal (egusi meal); meal (maize meal); meat; medicinal plant; melon seed; milk; milk (cow milk); milk (human breast milk); milk thistle; millet; noodle; nut; nut (almonds); nut (Brazil nuts, paranuts); nut (cashew nuts); nut (hazelnuts); nut (peanuts); nut (pecan nuts); nut (pine nuts); nut (pistachio nuts); nut (walnuts); nut cereals; nuts and seeds; oat; ogbono; ogili-ugba; ogoro; oil; oil (peanut oil); oil seed; paste (curry paste); paste (fig paste); paste (peanut paste); paste (pipian paste); paste (red pepper paste); paste (sesame paste); pea; pearl millet; poppadom; powder (custard powder); pozol; product (bakery products); product (cereal products); product (coconut products); product (fish products); product (maize products); product (meat products); product (nut products); product (wheat products); raisin; rice; root crops; sago; sauce (leaf sauce); sauce (peanut sauce); sesame; snack; sorghum; soybean; spice; spice (cayenne pepper, chilli); spice (coriander); spice (cumin); spice (curry); spice (fennel); spice (fenugreek); spice (garlic); spice (garlic/onions); spice (ginger); spice (nutmeg); spice (paprika); spice (pepper); spice (pili-pili); spice (tandoori); spice (turmeric); sultana; sunflower seed; tarhana; tea; teff; tuber; vegetables; wheat; yam

Averufin

Millet

Fumagillin

Millet

Fumigaclavin A

Millet

Gliotoxin

Medicinal plant

Sterigmatocystin

Barley; beer; buckwheat; cassava; cheese; cheese (Ras cheese); coffee; coffee bean; food; gram (black gram); maize; medicinal plant; millet; nut (almonds); nut (peanuts); nut (pecan nuts); nut (pistachio nuts); oat; oil seed; rice; rye; sesame; spice; spice (fennel); spice (pepper); wheat

Methylsulochrin

Millet

Versicolorin A

Millet

Versicolorin C

Millet; sesame

Table 3. *Aspergillus*- and *Penicillium* toxins in foodstuffs*Citreoviridin*

Bran (rice bran); maize; rice

Citrinin

Angkak; barley; bread; cereal; cereal (breakfast cereals); cheese; cheese (Bhutanese cheese); confectionery; dietary supplement; dough (maize dough); flour (buckwheat flour); flour (maize flour); flour (wheat flour); food; food colorant; fruit (apple); kidney (pig kidney); maize; meal (copra meal); medicinal plant; millet; nut (cashew nuts); nut (coconuts); nut (grogannuts); nut (peanuts); oil seed; olive; product (bakery products); product (coconut products); product (meat products); rice; sesame; spice; spice (cardamom); spice (coriander); spice (cumin); spice (fennel); spice (pepper); spice (turmeric); wheat

Cyclopiazonic acid

Cassava; cheese; fig; flakes (cornflakes); food; maize; medicinal plant; milk; milk (cow milk); millet; nut (Brazil nuts, paranuts); nut (peanuts); pulp (tomato pulp); puree

Kojic acid

Fig; millet; sesame

3-Nitropropionic acid

Food; maize; millet; nut (peanuts); sesame

Ochratoxin A

Barley; bean; bee pollen; beef; beer; berry (grapes); berry (strawberries); beverage; biscuit; blood (pig blood); bran; bran (barley bran); bran (oat bran); bran (rice bran); bran (wheat bran); bread; buckwheat; burghul; butter; butter (cocoa butter); butter (peanut butter); cake (peanut cake); cake (rice cake); cassis; cereal; cereal (breakfast cereals); cheese; cheese (Bhutanese cheese); cheese (Blue cheese); chicken; chickpea; chocolate; cocoa; cocoa bean; cocoa mass; cocoa nib; coffee; coffee bean; confectionery; coppa; currant; date; dough (maize dough); drink; drink (cocoa drink); duck; extrudates; Farro; fig; fish; flakes (barley flakes); flakes (cereal flakes); flakes (cornflakes); flakes (maize flakes); flakes (oat flakes); flour; flour (barley flour); flour (buckwheat flour); flour (cassava flour); flour (lentil flour); flour (maize flour); flour (oat flour); flour (potato flour); flour (rice flour); flour (rye flour); flour (soybean flour); flour (Vetch flour); flour (wheat flour); food; food (baby food); food (infant food); fruit (apple); fruit (cherry); fruit (grape); fruit (peach); fruit (prune); fruit (quince); fruit, dried; fruits and nuts; germ (wheat germ); goose; gram (black gram); gram (green gram); grit (durum grits); grit (maize grits); groats; groats (barley groats); groats (wheat groats); gruel; ham; isoflavones (soy); jam; job's-tears; joints; juice; juice (apple juice); juice (black currant juice); juice (carrot juice); juice (fruit juice); juice (grape juice); juice (tomato juice); kidney (pig kidney); kidney (poultry kidney); lentil; linseed; liquorice; liver (cow liver); liver (duck liver); liver (goose liver); liver (pig liver); liver (turkey liver); maize; malt (barley malt); meal (buckwheat meal); meal (maize meal); meal (oat meal); meal (rye meal); meal (spelt meal); meal (wheat meal); meat; meat (pig meat); meat (poultry meat); medicinal plant; milk; milk (cow milk); milk (human breast milk); milk, infant formula; millet; muesli; muscle (chicken muscle); muscle (pig muscle); must; noodle; nut; nut (almonds); nut (cashew nuts); nut (coconuts); nut (hazelnuts); nut (peanuts); nut (pistachio nuts); nut (tiger-nuts); nut (walnuts); oat; oil (olive oil); oil (sesame oil); olive; pasta; paste (curry paste); paste (fig paste); pastries; pâté; pea; pork; potato; powder (cocoa powder); powder (milk powder); product; product (bakery products); product (cereal products); product (coconut products); product (food products); product (meat products); product (rye products); product (wheat products); pudding, crème; pulp (grape pulp); pulses; puree; raisin; rice; rolls; rusk; rye; sandwich; sauce; sauce (chilli sauce); sauce (soy sauce); sausage; serum (pig serum); sesame; snack; sorghum; soybean; spelt; spice; spice (*Capsicum* spp.); spice (caraway); spice (cardamom); spice (cayenne pepper, chilli); spice (coriander); spice (cumin); spice (curcuma); spice (curry); spice (fennel); spice (garlic); spice (ginger); spice (majoran); spice (mustard); spice (nutmeg); spice (paprika); spice (pepper); spice (pili-pili); spice (tandoori); spice (turmeric); starch (maize starch); starch (rice starch); starch (wheat starch); sultana; sunflower seed; tea; teff; tomato; tomato ketchup; turkey; vegetables; vine fruit (dried); vinegar; wheat; wine; wine (red); wine (rosé); wine (white); wine, miscellaneous

(continued)

Table 3. (continued)*Ochratoxin B*

Barley; berry (grapes); cocoa; coffee; maize; malt (barley malt); medicinal plant; nut (almonds); nut (cashew nuts); nut (peanuts); powder (cocoa powder); vinegar

Ochratoxins (A, B)

Cheese (Cottage cheese)

Patulin

Apple cider; apple flavor; apple rings; berry (blueberries); berry (lingonberries); cassava; cheese; food (baby food); fruit (apple); fruit (hawthorn fruit); fruit (peach); fruit (pear); fruit (plum); fruit (quince); fruits and nuts; gram (black gram); jam; jam (apple jam); jam (quince jam); juice; juice (apple juice); juice (apple concentrate); juice (apricot juice); juice (black currant juice); juice (cherry juice); juice (fruit juice); juice (grape juice); juice (hawthorn juice); juice (orange juice); juice (pear juice); juice (pineapple juice); juice (Rosehip juice); marmalade (apple marmalade); marmalade (pear marmalade); medicinal plant; nectar (apple nectar); product (apple products); product (fruit products); product (meat products); pulp (apple pulp); pulp (plum pulp); puree; vinegar

Penicillic acid

Bean; cassava; cheese; cheese (Blue cheese); maize; pea

Verruculogen

Medicinal plant

Viomellein

Barley; oil seed; wheat

Vioxanthin

Barley; oil seed; wheat

Xanthomegnin

Barley; oil seed; wheat

Table 4. *Chaetoglobosin* toxins in foodstuffs*Chaetoglobosin A*

Fruit (apple); juice (cherry juice); juice (gooseberry juice); medicinal plant

Chaetoglobosin C

Fruit (apple); juice (cherry juice)

Table 5. *Claviceps* toxins in foodstuffs*Chanoclavin*

Millet

Festuclavin

Millet

Ergocornine

Bran; bread; flour; flour (graham flour); flour (rye flour); flour (triticale flour); flour (wheat flour); pancake; triticale; wheat

Ergocristine

Bran; bread; flour; flour (graham flour); flour (rye flour); flour (triticale flour); flour (wheat flour); pancake; triticale

Ergometrine

Bread; flour; flour (graham flour); flour (rye flour); flour (wheat flour); pancake; triticale

(continued)

Table 5. (continued)*Ergonovine*

Bran; bread; flour (rye flour); flour (triticale flour); flour (wheat flour)

Ergosine

Bran; bread; flour; flour (graham flour); flour (rye flour); flour (triticale flour); flour (wheat flour); pancake; triticale

Ergotamine

Bran; bread; flour; flour (graham flour); flour (rye flour); flour (triticale flour); flour (wheat flour); pancake; triticale; wheat

α-Ergokryptine

Bran; bread; flour; flour (graham flour); flour (rye flour); flour (triticale flour); flour (wheat flour); pancake; triticale

Ergot alkaloids

Food (infant food); rye; wheat

Table 6. *Fusarium* toxins in foodstuffs

Fumonisin(s) include fumonisin, fumonisins (B₁, B₂), fumonisins, and fumonisins (total).

Acuminatopyrone

Fruit (apple)

Aurofusarin

Fruit (apple); millet; sesame

Beauvericin

Barley; cereal; cereal (infant cereals); egg; Farro; flour; flour (maize flour); flour (oat flour); flour (rice flour); flour (wheat flour); food; food (baby food); grains; maize; meal (oat meal); millet; muesli; nut (peanuts); nut (tiger-nuts); oat; pasta; product (bakery products); product (maize products); product (sorghum products); product (wheat products); rice; sesame; spice (pepper); wheat

Chlamydosporol(s)

Fruit (apple); millet

Deoxynivalenol

Barley; batter; bean; bee pollen; beer; biscuit; bran; bran (oat bran); bran (rice bran); bran (wheat bran); bread; bread-baking wheat premixes; buckwheat; cake; cereal; cereal (breakfast cereals); cereal (infant cereals); chips (maize chips); cookie; crackers; croissant; egg; extract (malt extract); extrudates; fat; flakes (bran flakes); flakes (cornflakes); flakes (maize flakes); flakes (oat flakes); flakes (wheat flakes); flour; flour (barley flour); flour (graham flour); flour (maize flour); flour (oat flour); flour (rye flour); flour (wheat flour); food; food (baby food); food (infant food); foodstuff; germ (wheat germ); grains; grit; grit (barley grits); grit (durum grits); grit (maize grits); grit (wheat grits); groats (oat groats); job's-tears; maize; malt; malt (barley malt); meal (barley meal); meal (maize meal); meal (millet meal); meal (oat meal); meal (rye meal); meal (soybean meal); meal (wheat meal); medicinal plant; millet; muesli; noodle; oat; oil (soybean oil); pancake; pasta; popcorn; powder (custard powder); product (bakery products); product (cereal products); product (maize products); product (oat products); product (snack products); product (wheat products); rice; rye; sesame; snack; sorghum; soybean; spice (cayenne pepper, chilli); spice (coriander); spice (garlic); spice (ginger); spice (paprika); sunflower seed; triticale; wheat

(continued)

Table 6. (continued)

Deepoxyvalenol

Medicinal plant

3-Acetyldeoxyvalenol

Barley; bran (oat bran); bran (wheat bran); bread; cereal, cereal (breakfast cereals); cereal (infant cereals); flakes (cornflakes); flakes (oat flakes); flour (maize flour); flour (rye flour); flour (wheat flour); food; food (baby food); food (infant food); grit (maize grits); grit (wheat grits); maize; meal (oat meal); oat; popcorn; product (maize products); product (oat products); rice; rye; snack; wheat

15-Acetyldeoxyvalenol

Barley; bran (oat bran); bran (wheat bran); bread; cereal (breakfast cereals); flakes (cornflakes); flakes (oat flakes); flour (maize flour); flour (rye flour); flour (wheat flour); food; food (infant food); grit (maize grits); grit (wheat grits); maize; meal (oat meal); noodle; oat; popcorn; product (maize products); product (oat products); product (snack products); rye; snack; wheat

3,15-Diacetyldeoxyvalenol

Barley

3-Acetyldeoxyvalenol + 15-Acetyldeoxyvalenol

Barley; beer; maize; popcorn; wheat

Acetyldeoxyvalenol

Flour (wheat flour); wheat

*Deoxyvalenol-3-glucoside**

Barley; beer; bread; cereal (breakfast cereals); extract (malt extract); flakes (cornflakes); flour; flour (wheat flour); food; grit (durum grits); maize; meal (oat meal); medicinal plant; oat; popcorn; product (bakery products); product (maize products); snack; wheat

Enniatin A

Barley; cereal; cereal (breakfast cereals); egg; flour; food; food (baby food); grains; muesli; nut (tiger-nuts); pasta; rice; snack; sorghum; wheat

Enniatin A₁

Barley; cereal; cereal (breakfast cereals); cereal (infant cereals); egg; flour; flour (oat flour); food; food (baby food); grains; maize; meal (oat meal); muesli; nut (tiger-nuts); oat; pasta; rice; rye; snack; sorghum; wheat

Enniatin A + Enniatin A₁

Wheat

Enniatin B

Barley; cereal; cereal (breakfast cereals); cereal (infant cereals); egg; flour; food; food (baby food); grains; maize; meal (oat meal); muesli; nut (tiger-nuts); oat; pasta; powder (instant-drink powder); rice; rye; snack; wheat

Enniatin B₁

Barley; cereal; cereal (breakfast cereals); cereal (infant cereals); egg; flour; food; food (baby food); grains; maize; meal (oat meal); muesli; nut (peanuts); nut (tiger-nuts); oat; pasta; powder (instant-drink powder); rice; rye; snack; sorghum; wheat

Enniatin B₂

Food

Enniatins

Fruit (apple)

Equisetin

Millet; sesame

(continued)

Table 6. (continued)*Fumonisin B₁*

Arepas; asparagus; barley; batter; bean; beer; black radish; bran (maize bran); bread; cake (rice cake); cereal; cereal (breakfast cereals); chips (maize chips); chips (nacho chips); chips (tortilla chips); cowpea; Farro; fig; flakes (cornflakes); flour; flour (cassava flour); flour (maize flour); flour (masa flour); flour (wheat flour); food; food (baby food); food (infant food); foodstuff; gluten (maize gluten); grit (maize grits); herbs; incaparina; isoflavones (soy); maize; maize puff; malt (sorghum malt); masa; meal (maize meal); meal (sorghum meal); medicinal plant; milk (cow milk); millet; muffin; nut (peanuts); oat; pancake; plant; popcorn; porridge; product (maize products); product (wheat products); raisin; rice; snack; sorghum; soup (maize soup); soybean; spice; spice (garlic); spice (onion); starch (maize starch); syrup (sorghum syrup); tea; tortilla; wheat; wine (red); wine (white); wine, miscellaneous

Hydrolyzed Fumonisin B₁

Chips (nacho chips); chips (tortilla chips); flakes (cornflakes); maize; masa; meal (maize meal); product (maize products); tortilla

Hydrolyzed Fumonisin B₁ (partial)

Flakes (cornflakes)

Iso-Fumonisin B₁

Raisin

N-(Carboxymethyl) Fumonisin B₁

Chips (nacho chips); chips (tortilla chips)

Fumonisin B₂

Arepas; asparagus; barley; batter; beer; black radish; bran (maize bran); bread; cereal; cereal (breakfast cereals); chips (maize chips); chips (tortilla chips); fig; flakes (cornflakes); flour; flour (maize flour); flour (masa flour); food; food (baby food); food (infant food); foodstuff; grit (maize grits); herbs; incaparina; maize; maize puff; masa; meal (maize meal); millet; muffin; must; oat; pancake; popcorn; product (maize products); product (wheat products); raisin; rice; snack; sorghum; soybean; spice (garlic); starch (maize starch); tortilla; wheat; wine (red); wine (white); wine, miscellaneous

Hydrolyzed Fumonisin B₂ (partial)

Flakes (cornflakes)

Iso-Fumonisin B_{2,3}

Raisin

Fumonisin B₃

Batter; beer; cereal; flakes (cornflakes); flour (maize flour); food; food (baby food); food (infant food); grit (maize grits); incaparina; maize; maize puff; meal (maize meal); pancake; popcorn; product (cereal products); product (maize products); raisin; rice; snack; spice (garlic); wheat; wine (red)

3-epi-Fumonisin B₃

Maize; meal (maize meal); raisin

Fumonisin B₄

Raisin

3-epi-Fumonisin B₄

Raisin

Fumonisin B₅

Raisin

Iso-Fumonisin B₅

Raisin

Fumonisin C₁

Maize

(continued)

Table 6. (continued)

Fumonisin C₃

Maize

Fumonisin C₄

Maize

Fumonisin(s)

Barley; bee pollen; beer; bran (maize bran); bread; cake; cereal (breakfast cereals); cereal (infant cereals); chips (maize chips); chips (tortilla chips); extrudates; flakes (cornflakes); flakes (maize flakes); flour; flour (maize flour); food; food (baby food); food (infant food); germ (maize germ); grains; grit (maize grits); maize; maize (infant cream corn); maize-based thickeners; meal (maize meal); medicinal plant; muffin; noodle; pasta; pasta, bread, flours; paste (curry paste); paste (maize paste); popcorn; porridge; product; product (maize products); rice; snack; sorghum; spice; spice (cayenne pepper, chilli); spice (curry); spice (tandoori); starch (maize starch); tortilla; wheat

Hydrolyzed Fumonisin

Flour; pasta, bread, flour; product; snack

Fusaproliferin

Cereal; cereal (breakfast cereals); cereal (infant cereals); maize; muesli; pasta; rice; wheat

Fusarenon-X (4-Acetylnivalenol)

Barley; cereal (breakfast cereals); flakes (oat flakes); flour (maize flour); food; food (infant food); grit (wheat grits); maize; medicinal plant; oat; product (oat products); rice; rye; spice (curry); spice (garlic); wheat

Fusaric acid

Millet; sesame

Fusarin C

Maize

HT-2 toxin

Barley; bran (oat bran); bran (wheat bran); bread; cereal; cereal (breakfast cereals); cereal (infant cereals); flakes (cornflakes); flakes (maize flakes); flakes (oat flakes); flakes (wheat flakes); flour; flour (maize flour); flour (rye flour); flour (wheat flour); food; food (baby food); food (infant food); germ (wheat germ); grit (maize grits); grit (wheat grits); groats (oat groats); kernel (pumpkin kernels); maize; meal (maize meal); medicinal plant; muesli; noodle; nut (hazelnuts); oat; pasta; powder (instant-drink powder); product (oat products); product (potato products); product (wheat products); rice; rye; snack; soybean; spice (cayenne pepper, chilli); spice (curry); spice (paprika); sunflower seed; wheat

Moniliformin

Asparagus; barley; cereal (breakfast cereals); flakes (oat flakes); flour; flour (maize flour); flour (rye flour); flour (wheat flour); food; foodstuff; fruit (apple); grit (maize grits); maize; maize-based thickeners; meal (maize meal); medicinal plant; millet; muesli; oat; popcorn; rice; rye; snack; triticale; wheat

Neosolaniol

Bee pollen; bran (oat bran); bran (wheat bran); cereal (breakfast cereals); flakes (oat flakes); flour (rye flour); flour (wheat flour); food (infant food); maize; medicinal plant; oat; product (oat products); rye; sorghum; spice (curry); spice (ginger); wheat

(continued)

Table 6. (continued)*Nivalenol*

Barley; bean; bee pollen; beer; biscuit; bran (oat bran); bran (wheat bran); bread; cake; cereal; cereal (breakfast cereals); cereal (infant cereals); flakes (oat flakes); flour; flour (barley flour); flour (maize flour); flour (rye flour); flour (wheat flour); food; food (baby food); food (infant food); germ (wheat germ); grit (maize grits); grit (wheat grits); job's-tears; maize; malt (barley malt); meal (millet meal); medicinal plant; millet; noodle; oat; paste (curry paste); popcorn; powder (instant-drink powder); product (barley products); product (maize products); product (oat products); product (rice products); product (rye products); product (snack products); product (sorghum products); product (spelt products); product (wheat products); rice; rye; sauce (chilli sauce); snack; sorghum; soybean; spice (curry); spice (garlic); spice (ginger); spice (tandoori); wheat

4,15-Diacetylnivalenol

Barley; maize

Scirpenol

Product (potato products)

Monoacetoxyscirpenol

Bran (oat bran); bran (wheat bran); flakes (oat flakes); flour (rye flour); flour (wheat flour); food; food (infant food); grit (wheat grits); oat; product (potato products); rye; wheat

Diacetoxyscirpenol

Barley; bean; bran (oat bran); bran (wheat bran); cereal; flakes (oat flakes); flour (cassava flour); flour (wheat flour); food; food (infant food); maize; meal (soybean meal); medicinal plant; millet; nut (peanuts); oat; product (potato products); product (wheat products); rice; sorghum; soybean; spice (cayenne pepper, chilli); spice (curry); wheat

Scirpentriol

Barley; food; oat; wheat

8-Ketotrichothecene

Flour; grains

Tricothecenes

Maize; wheat

T-2 toxin

Barley; bean; bee pollen; bran; bran (oat bran); bran (wheat bran); bread; cereal; cereal (breakfast cereals); chickpea; fat; flakes (cornflakes); flakes (maize flakes); flakes (oat flakes); flakes (wheat flakes); flour; flour (maize flour); flour (rye flour); flour (wheat flour); food; food (infant food); grains; grit (maize grits); grit (wheat grits); lentil; maize; meal (maize meal); medicinal plant; muscle (chicken muscle); muscle (pig muscle); nut (hazelnuts); nut (peanuts); oat; pasta; product (oat products); product (wheat products); rice; rye; snack; sorghum; soybean; spice (cayenne pepper, chilli); spice (curry); spice (ginger); spice (paprika); spice (tandoori); starch (maize starch); sunflower seed; tobacco; wheat

T-2 toxin + HT-2 toxin

Barley; oat

T-2 tetraol

Barley; bran (oat bran); bran (wheat bran); flakes (oat flakes); flour (rye flour); flour (wheat flour); food; food (infant food); grit (wheat grits); maize; meal (soybean meal); oat; oil (soybean oil); rye; soybean; wheat

T-2 triol

Barley; bran (oat bran); bran (wheat bran); flakes (oat flakes); flour (rye flour); flour (wheat flour); food (infant food); maize; oat; product (oat products); rye; wheat

Zearalanone

Maize; medicinal plant

(continued)

Table 6. (continued)*α-Zearalanol*

Food (infant food)

β-Zearalanol

Maize

Zearalenol

Meal (soybean meal)

α-Zearalenol

Barley; bread; cereal (breakfast cereals); flakes (cornflakes); food; food (infant food); maize; meal (oat meal); medicinal plant; milk, infant formula; oat; popcorn; wheat

*α-Zearalenol-4-glucoside**

Bread; cereal (breakfast cereals); flakes (cornflakes); maize; meal (oat meal)

β-Zearalenol

Bread; cereal (breakfast cereals); flakes (cornflakes); food; maize; meal (oat meal); medicinal plant; milk, infant formula; oat; popcorn; wheat

*β-Zearalenol-4-glucoside**

Bread; cereal (breakfast cereals); flakes (cornflakes); maize; meal (oat meal); oat; popcorn

Zearalenone

Amaranth; barley; bean; bee pollen; beefburger; beer; biscuit; bran (oat bran); bran (rice bran); bran (wheat bran); bread; cake/muffin mixes; cereal; cereal (breakfast cereals); cereal bar; cheese (Hard Roume cheese); cheese (Kariesh cheese); crackers; flakes (bran flakes); flakes (cornflakes); flakes (maize flakes); flakes (wheat flakes); flour; flour (barley flour); flour (cassava flour); flour (maize flour); flour (rye flour); flour (wheat flour); food; food (baby food); food (infant food); fruit, dried; germ (wheat germ); gram (black gram); grit (maize grits); job's-tears; kernel (pumpkin kernels); maize; malt (barley malt); malt (maize malt); malt (sorghum malt); masa; meal (barley meal); meal (maize meal); meal (millet meal); meal (oat meal); meal (rye meal); meal (soybean meal); meal (wheat meal); meat; meat (luncheon meat); medicinal plant; milk; milk, infant formula; millet; muesli; nut (almonds); nut (hazelnuts); nut (peanuts); nut (walnuts); oat; oil; oil (soybean oil); oil seed; pasta; paste (curry paste); pea; popcorn; powder (milk powder); product (maize products); product (potato products); product (snack products); rice; rye; sauce (chilli sauce); sausage; serum (pig serum); sesame; snack; sorghum; soybean; spice; spice (cayenne pepper, chilli); spice (coriander); spice (curry); spice (fennel); spice (garlic); spice (paprika); spice (pepper); sunflower seed; tobacco; tortilla; triticale; vegetables; wheat; wort (sorghum wort)

α-Zearalenone

Snack

*Zearalenone-4-glucoside**

Bread; cereal (breakfast cereals); flakes (cornflakes); maize; meal (oat meal); oat; wheat

*Zearalenone-4-sulfate**

Biscuit; bread; cereal (breakfast cereals); crackers; flakes (bran flakes); flakes (cornflakes); flour (wheat flour); grit (maize grits); maize; meal (maize meal); meal (oat meal); millet; muesli; oat; popcorn; sesame; snack; wheat

Table 7. *Penicillium* toxins in foodstuffs

<i>Brefeldin A</i>	Millet; sesame
<i>Communesin B</i>	Fruit (apple); juice (cherry juice); juice (gooseberry juice)
<i>Curvularin</i>	Millet; sesame
<i>Emodin</i>	Millet; sesame
<i>Griseofulvin</i>	Millet; sesame
<i>Dechlorogriseofulvin</i>	Sesame
<i>Isofumigaclavin A</i>	Cheese (Blue cheese)
<i>Isofumigaclavin B</i>	Cheese (Blue cheese)
<i>Mycophenolic acid</i>	Cheese; cheese (Blue cheese); medicinal plant
<i>Penitrem A</i>	Cheese (Cream cheese); medicinal plant
<i>Pestalotin</i>	Sesame
<i>PR Imine</i>	Cheese (Blue cheese)
<i>Roquefortine</i>	Cheese (Blue cheese); fruit (apple); juice (cherry juice)
<i>Rubratoxin</i>	Nut (almonds); nut (walnuts); spice (turmeric); wheat

Table 8. Toxins of other fungi

<i>Cytochalasin-H</i>	Millet
<i>Cytochalasin-J</i>	Millet

Cytochalasins are produced by e.g. *Phoma* spp. or *Phomopsis* spp.

*Masked forms of mycotoxins (partially metabolized by the plants being the host of the fungi or by the fungi themselves)

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