

Martin Weidenbörner

Mycotoxins in Feedstuffs

Second Edition

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Martin Weidenbörner
Bonn, Germany
mweidenboerner@web.de

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My Family

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Introduction

Feedstuffs are a common standard for each kind of food for animals that are in the charge of humans and serve as food. Feed for livestock is of special interest. The quality of the feed is responsible for the health of the animals and indirectly for the quality of human nutrition. Agriculturally used plants, such as numerous grains, oil seeds and nuts, root crops, and to a smaller extent, many forage crops are susceptible to mycotoxin contamination. Fungal and in the end mycotoxin contaminated feed may be involved in modern livestock production practice (confined rearing on high-density diets) because plant feedstuffs especially from multiple sources may be used for feeding. Mixing mycotoxin-contaminated pecan, walnut, or other nut meats into feedstuffs is one example. The nuts are pressed to recover the oil and most of the toxin is concentrated in the residual meats. The press cake usually is diverted into animal feed channels. The amount of these (protein supplement) ingredients, although small, could cause problems in animal and human health.

Available data suggest that the mold and mycotoxin problem is largely one of worldwide feed management. Individual farm silos and feed troughs are major sites of toxin production in mold-contaminated feeds. Guidelines for the investigation and amelioration of feedstuff quality in different countries have been prepared.

Mycotoxin contamination of feeds occurs as a result of crop invasion by field fungi, where drought, close planting, competition from weeds, reduced fertilization, and other factors cause stress to plants. Another reason is the growth of storage fungi in improperly stored crops and/or after processing the plants into food products or animal feed. Many (microscopic) fungi such as *Fusarium* spp. and *Alternaria* spp. (field fungi) as well as *Aspergillus* spp. and *Penicillium* spp. (storage fungi) begin growth if suitable conditions prevail. It is well documented that mycotoxin contamination is more regularly associated with low-grade cereals in low-income countries. Normally, in developed countries these cereals do not enter the human food chain. Storage fungi also grow during mixing and delivery of grain and animal feeds. In the worst case these fungi produce secondary metabolites, the so-called mycotoxins. They can be very harmful for animals (and humans). In 1960 the turkey "X" disease was caused by a toxin (aflatoxin) produced by molds belonging to the *Aspergillus flavus* group. It resulted in the death of 100,000 turkeys in the United Kingdom.

The presence of mycotoxins in feedstuffs (maize and cottonseed are particularly affected) could cause serious mycotoxicosis syndromes in animals. At high levels they even cause death shortly after exposure. At lower levels, they can cause disorders in various organs. Decreased feed efficiencies, reduced weight gain, impaired immunity, and other symptoms of acute mycotoxicosis may give rise to high costs for livestock producers. Especially in equivocal cases of illness of the animal and/or unspecific syndromes of

decline in performance, feedstuffs should be investigated for mycotoxins. Furthermore, these fungal metabolites can end up in meat, milk, or eggs, which are important components of the human food chain. Nowadays consumers pay more attention to their health and therefore a higher quality of food is necessary.

This book gives an overview of mycotoxins in feedstuffs and ingredients. It lists the degree of contamination, concentration, and country of origin/detection for each case of mycotoxin contamination. In addition to this information the book shows whether a feedstuff or ingredient is predisposed to mycotoxin contamination (number of mycotoxins as well as number of citations concerning one feedstuff).

Mycotoxins in Feedstuffs therefore contributes to more information and transparency in the human food chain. It is especially suitable for those people with responsible positions in the feed-industry (e.g., supervisors of feed, feed producers, feeding traders) including ministries, offices and departments of farming and environmental control on the national and international level, offices, associations, agricultural chambers, meat industry, veterinarians, farmers (especially livestock breeders), mycologists, mycotoxicologists, biologists, chemists, supervisors in food and feed quality control, lawyers and experts in the law of food and feed, students of the respective fields, and other interest groups.

The feeds and/or ingredients are listed in alphabetical order. Terms with a comma follow, then terms with definitions in brackets. This was done as thoroughly as possible. There are subtitles which present the fungal genera of the corresponding mycotoxin producers. The mycotoxins are mainly produced by the cited genus but exceptions do exist. The country(ies) where the publication originated has(have) been listed. If the country(ies) of the publication is(are) identical with the origin of the samples no further advice has been given. If not, "sa from . . ." is added. In some cases, the country of detection is not necessarily the country of origin, but information was lacking concerning the country of origin of such imports in the original literature. If only "sa imported" occurs after the country of investigation no more data were available in the original literature. Sometimes the original literature neither contained the producing country nor the addition "imported". In these cases also no indications were given.

Although deoxynivalenol-3- β -glucoside is a phase II plant metabolite and not a real fungus metabolite it was also recorded and may be found in this book.

This second edition has a tighter structure than the first. Additional explanations and information marked with an asterisk have been given in the case of items where necessary. All mycotoxins are listed in six tables at the end of the book. These tables show the mycotoxin(s) of a feedstuff, and so the reader is given a very good overview. Looking back into the text, a corresponding article can be ordered according to the index number. Also an additional alphabetical list of the literature has been prepared. It should help in seeking scientists who are working or have worked in the field of mycotoxins in feedstuffs.

More than 180 new articles dealing with mycotoxins in feedstuffs have been added to the second edition. Nevertheless, not all articles dealing with this theme are found in the present book. However, in general, this book contains the most cited and important publications in the field of mycotoxins in feedstuffs. The articles presented are available as publications of German Scientific Libraries as well as the U.S. National Library of Medicine–National Institutes of Health.

Abbreviations

AAL-TOXIN	<i>Alternaria alternata</i> toxin
AAL-TA	<i>Alternaria</i> toxin
AAL-TB	<i>Alternaria</i> toxin
AFB ₁	Aflatoxin B ₁
AFB ₂	Aflatoxin B ₂
AFG ₁	Aflatoxin G ₁
AFG ₂	Aflatoxin G ₂
BGYF	Bright greenish-yellow fluorescence
bu	Bushel
cm	<i>Fusarium</i> -toxin-contaminated maize
DON	Deoxynivalenol
ec	Exact composition
EC	European Community
ELEM	Equine leukoencephalomalacia
i sa	Indifferent samples
LOD	Limit of detection
lb	Pound
na	Not analyzed
nc	No comment
ncac	No comment about consumption
nd	Not detected
NBGYF	Non bright greenish-yellow fluorescence
NIV	Nivalenol
nq	Not quantifiable
pos	Positive
PPE	Porcine pulmonary edema syndrome
pr	Present
tr	Traces
s	Selected
sa	Sample(s)
ucm	Uncontaminated maize

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Alfalfa may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 6/55, conc. range: ≤25 µg/kg
(2 sa), 26–50 µg/kg (3 sa), 65 µg/kg
(1 sa), Ø conc.: 34.67 µg/kg, country:
India²⁴⁷

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 3/7,345 overall, conc. range:
nc, country: Hungary²⁰⁹

Fusarium Toxins

T-2 TOXIN
incidence: 2/7,345 overall, conc. range: nc,
country: Hungary²⁰⁹

Alfalfa brome hay may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/70*, conc.: 50 µg/kg, country:
Canada¹⁹, *legumes, hay, and forage

see also Legumes, hay, forage

Ambadi cake see Cake (*ambadi*)

Animal feed (maize) see Maize

Animal feedstuffs (dairy cake) see
Cake, dairy

Animal feed, mixed see Feed, mixed

Apples, molded see Feed

Bagasse may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/2, conc.: 9.3 µg/kg, country:
India²⁴⁷

Bajra may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN
incidence: 2*/2**, conc. range: ≤30 µg/kg
(2 sa), country: India⁵¹⁵, *all sa contained
aflatoxin, **poultry feed

incidence: 1*/1**, conc.: ≤30 µg/kg (1 sa),
country: India⁵¹⁵, *sa contained aflatoxin,
**poultry feed

Ball silage see Silage (balls)

Barley Feed barley may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL MONOMETHYL ETHER
incidence: 1/10, conc.: 16 µg/kg, country:
Germany²⁹⁴

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/376*, conc. range:
<10–2,000 µg/kg, country: UK³⁰, *ncac

incidence: 3/3, conc. range: 10–200 µg/kg,
Ø conc.: 103.3 µg/kg, country: Australia¹²¹

incidence: 2/2, conc. range: 100–200 µg/kg,
Ø conc.: 150 µg/kg, country: Australia¹⁸¹

incidence: 1/1*, conc.: 125 µg/kg, country:
UK⁴⁸⁰, *treated with commercial propionic
acid at an inadequate application level

AFLATOXIN B₂
incidence: 1/3, conc.: 30 µg/kg, country:
Australia¹²¹

AFLATOXIN B

incidence: 1/14, conc.: ≤ 10 $\mu\text{g}/\text{kg}$, country: France⁴⁶

AFLATOXIN G₁

incidence: 1/3, conc.: 200 $\mu\text{g}/\text{kg}$, country: Australia¹²¹

AFLATOXIN G₂

incidence: 1/3, conc.: 6 $\mu\text{g}/\text{kg}$, country: Australia¹²¹

AFLATOXINS

incidence: 1/23, conc.: 51–500 $\mu\text{g}/\text{kg}$, country: Australia²¹

STERIGMATOCYSTIN

incidence: 2/4*, conc. range: pr, country: UK⁹³, *ncac

incidence: 2/19, conc. range: 200–400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 300 $\mu\text{g}/\text{kg}$, country: Czechoslovakia⁶⁰⁴

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 6/222, conc. range: 50–250 $\mu\text{g}/\text{kg}$, \emptyset conc.: 76.7 $\mu\text{g}/\text{kg}$, country: Hungary⁶

incidence: 8/37*, conc. range: 19.6–637 $\mu\text{g}/\text{kg}$, country: Brazil¹¹, *barley rootlet

incidence: 10/68*, conc. range: 0.1–206 $\mu\text{g}/\text{kg}$, \emptyset conc.: 58.8 $\mu\text{g}/\text{kg}$, country: Germany¹³, *ncac

incidence: 3/45*, conc. range: 0.9–21.8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 11.7 $\mu\text{g}/\text{kg}$, country: Italy¹⁴, *ncac

incidence: 23/84, conc. range: ≤ 17.8 $\mu\text{g}/\text{kg}$, country: UK¹⁵

incidence: 5/84*, conc. range: 16–409.5 $\mu\text{g}/\text{kg}$ **, \emptyset conc.: 141 $\mu\text{g}/\text{kg}$ **, country: Sweden/Denmark²³, sa from Sweden, *barley and oats sa, **barley

incidence: 17/17, conc. range: 9–27,520 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,907.9 $\mu\text{g}/\text{kg}$, country: Denmark²⁴

incidence: 5/32, conc. range: < 100 $\mu\text{g}/\text{kg}$ (5 sa), country: Austria²⁹

incidence: 51/376*, conc. range: < 25 –5,000 $\mu\text{g}/\text{kg}$, country: UK³⁰, *ncac

incidence: 1/1, conc.: 1,900 $\mu\text{g}/\text{kg}$, country: Denmark⁸²

incidence: 19/137, conc. range: 2–200 $\mu\text{g}/\text{kg}$, country: Poland⁸⁴

incidence: 4/4*, conc. range: 75–11,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3,038.8 $\mu\text{g}/\text{kg}$, country: UK⁹³, *ncac

incidence: 12/45, conc. range: 1–4 $\mu\text{g}/\text{kg}$ (9 sa), 5–19 $\mu\text{g}/\text{kg}$ (2 sa), 102 $\mu\text{g}/\text{kg}$ (1 sa), country: UK⁹⁴, sa imported?

incidence: 2/8, conc. range: 6–120 $\mu\text{g}/\text{kg}$, \emptyset conc.: 63 $\mu\text{g}/\text{kg}$, country: Netherlands¹⁰³

incidence: 17/32, conc. range: 1–5 $\mu\text{g}/\text{kg}$ (7 sa), 5–20 $\mu\text{g}/\text{kg}$ (8 sa), > 20 $\mu\text{g}/\text{kg}$ (2 sa), country: Czechoslovakia¹¹⁰

incidence: 5/14, conc. range: 11–39 $\mu\text{g}/\text{kg}$, country: Germany¹⁸⁶

incidence: 14/68, conc. range: 0.3–0.9 $\mu\text{g}/\text{kg}$ (6 sa), 1.0–2.4 $\mu\text{g}/\text{kg}$ (4 sa), 5.0–9.9 $\mu\text{g}/\text{kg}$ (1 sa), 10.0–19.9 $\mu\text{g}/\text{kg}$ (1 sa), 20.0–49.9 $\mu\text{g}/\text{kg}$ (1 sa), 117 $\mu\text{g}/\text{kg}$ (1 sa), country: UK²⁰³

incidence: 6/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 1*/94 overall**, conc.: 60 $\mu\text{g}/\text{kg}$, country: Canada²⁴⁰, *consumed by dairy cattle, **different kinds of sa

incidence: 17/269*, conc. range: 2–5 $\mu\text{g}/\text{kg}$ (14 sa), ≤ 20 $\mu\text{g}/\text{kg}$ (3 sa), country: Sweden²⁶¹

incidence: 1/1, conc.: 68 $\mu\text{g}/\text{kg}$, country: UK²⁸⁸

incidence: 3/43 overall*, conc. range: 15.8–24.3 $\mu\text{g}/\text{kg}$ **, \emptyset conc.: 20.2 $\mu\text{g}/\text{kg}$, country: Denmark²⁹⁷, *different kinds of grain sa, **barley

incidence: 2/36* **, conc. range: 1.2–9.7 µg/kg, Ø conc.: 5.45 µg/kg, country: Poland³³⁹, *ncac, **conventionally grown

incidence: 2/17* **, conc. range: 1.4–35.3 µg/kg, Ø conc.: 18.4 µg/kg, country: Poland³³⁹, *ncac, **ecologically grown

incidence: 1/26* **, conc.: 0.3 µg/kg, country: Poland³⁴¹, *ncac, **conventionally grown

incidence: 3/40* **, conc. range: 6.7–57.0 µg/kg, Ø conc.: 25.73 µg/kg, country: Poland³⁴¹, *ncac, **ecologically grown

incidence: 7/116, conc. range: pr, country: Canada³⁴⁶

incidence: 2/33, conc. range: 100–200 µg/kg, Ø conc.: 150 µg/kg, country: Poland³⁵⁹

incidence: 6/116, conc. range: 12–26 µg/kg, country: Canada⁴¹⁰

incidence: 21/40* **, conc. range: 3–934 µg/kg, Ø conc.: 119.3 µg/kg, country: Sweden⁴¹⁸, *ncac, **10 normal and 30 off-odor sa (only off-odor sa contaminated)

incidence: 7/20, conc. range: 0.14–212 µg/kg, Ø conc.: 72 µg/kg, country: Hungary⁴⁶⁴

incidence: 4/5*, conc. range: 0.42–0.91 µg/kg, Ø conc.: 0.58 µg/kg, country: Poland⁵⁰⁶, *ncac

incidence: 5/39*, conc. range: 2.8–19.6 µg/kg, Ø conc.: 7.9 µg/kg, country: Korea⁵⁰⁷, *ncac

incidence: 7/44, conc. range: <100 µg/kg (7 sa), country: Austria⁵⁰⁹

incidence: 14/85*, conc. range: LOD–0.9 µg/kg (7 sa), 1.0–≤3.9 µg/kg (7 sa), country: Italy⁵³², *ncac

incidence: 4/6, conc. range: 0.35–34.40 µg/kg, Ø conc.: 9.09 µg/kg,

country: Czech Republic/France⁵⁵³, sa from Czech Republic

incidence: 1/31, conc.: 33 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

PATULIN

incidence: 2/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

VIOMELLEIN

incidence: 1/1, conc.: 1,000 µg/kg, country: Denmark⁸²

incidence: 3/4*, conc. range: pr–600 µg/kg, country: UK⁹³, *ncac

VIOXANTHIN

incidence: 3/4*, conc. range: 10–90 µg/kg, Ø conc.: 40 µg/kg, country: UK⁹³, *ncac

XANTHOMEGNIN

incidence: 3/4*, conc. range: pr–450 µg/kg, country: UK⁹³, *ncac

Fusarium Toxins

BEAUVERICIN

incidence: 14/14*, conc. range: tr–19 µg/kg, country: Finland²⁰⁵, *ncac

incidence: 8/8*, conc. range: tr–13 µg/kg, country: Finland²⁰⁵, *ncac

DEOXYNIVALENOL

incidence: 161/222, conc. range: 50–1,200 µg/kg, Ø conc.: 268 µg/kg, country: Hungary⁶

incidence: 15/15, conc. range: 8–465 µg/kg, Ø conc.: 77 µg/kg, country: Finland⁹

incidence: 22/43, conc. range: 10–20 µg/kg (11 sa), 20–100 µg/kg (9 sa), >100 µg/kg (2 sa), country: UK⁵⁵

incidence: 6/86, conc. range: 10–100 µg/kg, country: Germany⁶⁸

incidence: 5/6* **, conc. range: 3–65 µg/kg, Ø conc.: 19 µg/kg, country: Korea¹⁰⁸, *for food and feed, **husked barley

incidence: 31/31* **, conc. range:
12–901 µg/kg, Ø conc.: 124.7 µg/kg,
country: Korea¹⁰⁸, *for food and feed,
**unhusked barley

incidence: 6/7, conc. range: 5–50 µg/kg,
country: Finland¹¹²

incidence: 43/44, conc. range: 4–4,764 µg/
kg, Ø conc.: 399.6 µg/kg, country:
Germany¹²³

incidence: 29/40, conc. range:
6–483 µg/kg, Ø conc.: 103.0 µg/kg,
country: Germany¹²³

incidence: 34/47, conc. range:
2–300 µg/kg, Ø conc.: 74.4 µg/kg,
country: Germany¹²³

incidence: 36/51, conc. range: 4–530 µg/kg,
Ø conc.: 53.8 µg/kg, country: Germany¹²³

incidence: 52/58, conc. range: 4–486 µg/kg,
Ø conc.: 42.4 µg/kg, country: Germany¹²³

incidence: 1/1, conc.: 9,300 µg/kg,
country: Canada¹³⁰

incidence: 34/49*, conc. range:
6–2,139 µg/kg, Ø conc.: 165.6 µg/kg,
country: Norway¹³², *probably feed

incidence: 26/35*, conc. range:
10–10,000 µg/kg, country: Germany¹⁹²,
*ncac

incidence: 2/14, conc. range: 80–160 µg/
kg, Ø conc.: 120 µg/kg, country: Sweden¹⁹⁷

incidence: 1/6, conc.: 50 µg/kg, country:
Sweden¹⁹⁷

incidence: 4/32, conc. range: 60–150 µg/
kg, Ø conc.: 90 µg/kg, country: Sweden¹⁹⁷

incidence: 7/7*, conc. range: 260–
24,000 µg/kg, Ø conc.: 13,794 µg/kg,
country: Canada/Germany²⁰², sa from
Canada, *ncac

incidence: 48/68, conc. range: 20–49 µg/kg
(34 sa), 50–99 µg/kg (13 sa), 126 µg/kg
(1 sa), country: UK²⁰³

incidence: 1/6*, conc.: 390 µg/kg, country:
Japan/Poland²¹⁴, sa from Poland, *ncac

incidence: 799/1,095* **, conc. range:
30–13,330 µg/kg, country: Norway²²⁴,
*ncac, **of different categories (for more
information please see the article)

incidence: 5/5* **, conc. range: 26–223 µg/
kg, Ø conc.: 108.8 µg/kg, country: Korea²²⁷,
*ncac, **husked barley

incidence: 4/14* **, conc. range: 25–85 µg/
kg, Ø conc.: 59 µg/kg, country: Korea²²⁷,
*ncac, **husked barley

incidence: 17/18* **, conc. range:
8–495 µg/kg, Ø conc.: 115.9 µg/kg,
country: Korea²²⁷, *ncac, **naked barley

incidence: 9/20* **, conc. range:
10–161 µg/kg, Ø conc.: 52.9 µg/kg,
country: Korea²²⁷, *ncac, **naked barley

incidence: 2/2*, conc. range: 310–350 µg/
kg, Ø conc.: 330 µg/kg, country: Japan²³⁰,
*ncac

incidence: 2/2* **, conc. range: 180–330 µg/
kg, Ø conc.: 255 µg/kg, country: Japan²³⁰,
*ncac, **naked barley

incidence: 19/25*, conc. range:
tr–40,400 µg/kg, Ø conc.: 4400 µg/kg,
country: Japan²³¹, *ncac

incidence: 2/4*, conc. range: tr–22 µg/kg,
country: Netherlands²³², sa from France,
*ncac

incidence: 3/5*, conc. range: tr–30 µg/kg,
country: Netherlands²³², *ncac

incidence: 3/5*, conc. range: tr, country:
Netherlands²³², sa from Denmark, *ncac

incidence: 3/6*, conc. range: tr–21 µg/kg,
country: Netherlands²³², sa of unknown
origin, *ncac

incidence: 4/4*, conc. range: 140–4,500 µg/
kg, Ø conc.: 1,520 µg/kg, country:
Norway/Germany²³⁵, sa from Norway,
harvested in October/November, *ncac

incidence: 3/7*, conc. range: 45–93 µg/kg,
Ø conc.: 64.7 µg/kg, country: Norway/
Germany²³⁵, sa from Norway, harvested in
spring, *ncac

incidence: 4*/94 overall**, conc. range: 13–70 µg/kg, Ø conc.: 30.6 µg/kg, country: Canada²⁴⁰, *consumed by swine and poultry, **different kinds of sa

incidence: 5/8, conc. range: ≤530 µg/kg, country: Slovakia/Poland²⁴¹, sa from Slovakia, *for food and feed

incidence: 77/77*, conc. range: 10–15,100 µg/kg, country: Canada/Germany²⁵⁸, sa from Canada, *ncac

incidence: 40/40*, conc. range: 30–15,790 µg/kg, country: Canada/Germany²⁵⁸, sa from Canada, *ncac

incidence: 71/94*, conc. range: 5–3,780 µg/kg, Ø conc.: 270 µg/kg, country: Japan²⁶⁵, *ncac

incidence: 17/1,494*, conc. range: 50–2,520 µg/kg, Ø conc.: 740.6 µg/kg, country: Canada³²³, *ncac

incidence: 84/116, Ø conc.: 1,370 µg/kg, country: Canada³⁴⁶

incidence: 12/29*, conc. range: ≤163 µg/kg, Ø conc.: 49 µg/kg, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

incidence: 84/116, conc. range: ≤9,110 µg/kg, Ø conc.: 1,370 µg/kg, country: Canada⁴¹⁰

incidence: 28/40* **, conc. range: 5–857 µg/kg, Ø conc.: 79.3 µg/kg, country: Sweden⁴¹⁸, *ncac, **10 normal and 30 off-odor sa (both kinds contaminated)

incidence: 8/17*, conc. range: 20–230 µg/kg, Ø conc.: 88.8 µg/kg, country: Japan⁴⁶⁹, *ncac

incidence: 293/293, conc. range: 0–100 µg/kg (101 sa), 101–500 µg/kg (177 sa), 501–1,000 µg/kg (10 sa), ≤1,100 µg/kg (5 sa), country: Austria⁴⁹¹

incidence: 5/5*, conc. range: 10–40 µg/kg, Ø conc.: 22 µg/kg, country: Poland⁵⁰⁶, *ncac

incidence: 5/6*, conc. range: 11–34 µg/kg, Ø conc.: 25.4 µg/kg, country: Korea⁵¹⁰, *ncac

incidence: 33/36* **, conc. range: ≤170.2 µg/kg, Ø conc.: 36 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 37/40* **, conc. range: ≤62.1 µg/kg, Ø conc.: 13 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 34/36* **, conc. range: ≤181.0 µg/kg, Ø conc.: 42 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 19/36* **, conc. range: ≤61.4 µg/kg, country: Ø conc.: 32 µg/kg, Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 25/25* **, conc. range: tr–198 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring barley

incidence: 28/30* **, conc. range: tr–372 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring barley

incidence: 14/15*, conc. range: 54–3,787 µg/kg, Ø conc.: 679.9 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 15/15*, conc. range: 10–370 µg/kg, Ø conc.: 85 µg/kg, country: Poland⁵⁴⁹, *ncac

incidence: 17/17*, conc. range: 86–70,500 µg/kg, Ø conc.: 9,834.8 µg/kg, country: Japan⁶⁰⁰, *sa suspected to be pos. for acetylated DON and NIV

incidence: 10/12*, conc. range: ≤66 µg/kg, Ø conc.: 34 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *ncac

incidence: 81/161, conc. range: ≤1,400 µg/kg, Ø conc.: 394 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

DEOXYNIVALENOL-3-GLUCOSIDE

incidence: 4/36* **, conc. range:
 ≤ 107.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 43 $\mu\text{g}/\text{kg}$, country:
 Czech Republic⁵¹⁷, *for food and feed ,
 **spring barley

incidence: 6/36* **, conc. range: ≤ 14.0 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, country: Czech
 Republic⁵¹⁷, *for food and feed , **spring
 barley

3-ACETYLDEOXYNIVALENOL

incidence: 4/15, conc. range: 20–96 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 58 $\mu\text{g}/\text{kg}$, country: Finland⁹

incidence: 21/44, conc. range: 3–18 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 5.4 $\mu\text{g}/\text{kg}$, country: Germany¹²³

incidence: 13/40, conc. range: 3–11 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 6.5 $\mu\text{g}/\text{kg}$, country: Germany¹²³

incidence: 8/47, conc. range: 2–15 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 8.4 $\mu\text{g}/\text{kg}$, country: Germany¹²³

incidence: 8/51, conc. range: 9–224 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 136.5 $\mu\text{g}/\text{kg}$, country:
 Germany¹²³

incidence: 4/58, conc. range: 8–49 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 22.8 $\mu\text{g}/\text{kg}$, country: Germany¹²³

incidence: 5/7*, conc. range:
 1,300–5,300 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,780 $\mu\text{g}/\text{kg}$,
 country: Canada/Germany²⁰², sa from
 Canada, *ncac

incidence: 24/40*, conc. range: ≤ 350 $\mu\text{g}/\text{kg}$,
 country: Canada/Germany²⁵⁸, sa from
 Canada, *ncac

incidence: 3/23, conc. range: 230–380 $\mu\text{g}/\text{kg}$,
 country: Canada⁴¹⁰

incidence: 15/17*, conc. range:
 10–18,700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,190.8 $\mu\text{g}/\text{kg}$,
 country: Japan⁶⁰⁰, *sa suspected to be pos.
 for acetylated DON and NIV

15-ACETYLDEOXYNIVALENOL

incidence: 13/44, conc. range: 2–18 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 8.4 $\mu\text{g}/\text{kg}$, country: Germany¹²³

incidence: 2/58, conc. range: 4 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 4 $\mu\text{g}/\text{kg}$, country: Germany¹²³

incidence: 5/7*, conc. range: 400–2,400 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 1,280 $\mu\text{g}/\text{kg}$, country: Canada/
 Germany²⁰², sa from Canada, *ncac

incidence: 1*/94 overall**, conc.: 5 $\mu\text{g}/\text{kg}$,
 country: Canada²⁴⁰, *consumed by swine,
 **different kinds of sa

incidence: 24/77*, conc. range: ≤ 400 $\mu\text{g}/\text{kg}$,
 country: Canada/Germany²⁵⁸, sa from
 Canada, *ncac

incidence: 39/40*, conc. range: $\leq 1,240$ $\mu\text{g}/\text{kg}$,
 country: Canada/Germany²⁵⁸, sa from
 Canada, *ncac

incidence: 6/1494*, conc. range:
 90–190 $\mu\text{g}/\text{kg}$, \emptyset conc.: 120 $\mu\text{g}/\text{kg}$,
 country: Canada³²³, *ncac

incidence: 2/23, conc. range: 110–160 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 135 $\mu\text{g}/\text{kg}$, country: Canada⁴¹⁰

incidence: 2/17*, conc. range: 96–522 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 309 $\mu\text{g}/\text{kg}$, country: Japan⁶⁰⁰,
 *sa suspected to be pos. for acetylated
 DON and NIV

3,15-DIACETYLDEOXYNIVALENOL

incidence: 6/7*, conc. range: tr–400 $\mu\text{g}/\text{kg}$,
 country: Canada/Germany²⁰², sa from
 Canada, *ncac

incidence: 25/40*, conc. range: ≤ 400 $\mu\text{g}/\text{kg}$,
 country: Canada/Germany²⁵⁸, sa from
 Canada, *ncac

3-ACETYLDEOXYNIVALENOL
+ 15-ACETYLDEOXYNIVALENOL

incidence: 2/116, conc. range: pr, country:
 Canada³⁴⁶

incidence: 1/36* **, conc.: 46.2 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 7 $\mu\text{g}/\text{kg}$?, country: Czech Republic⁵¹⁷,
 *for food and feed , **spring barley

ENNIATIN A

incidence: 14/14*, conc. range: 2–950 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 87.93 $\mu\text{g}/\text{kg}$, country:
 Finland²⁰⁵, *ncac

incidence: 7/8*, conc. range: tr–59 $\mu\text{g}/\text{kg}$,
 country: Finland²⁰⁵, *ncac

ENNIATIN A₁

incidence: 14/14*, conc. range: 18–2,000 µg/kg, Ø conc.: 310.3 µg/kg, country: Finland²⁰⁵, *ncac

incidence: 8/8*, conc. range: tr–570 µg/kg, country: Finland²⁰⁵, *ncac

ENNIATIN B

incidence: 14/14*, conc. range: 150–9,760 µg/kg, Ø conc.: 1,828.6 µg/kg, country: Finland²⁰⁵, *ncac

incidence: 8/8*, conc. range: 44–3,980 µg/kg, Ø conc.: 1,260 µg/kg, country: Finland²⁰⁵, *ncac

ENNIATIN B₁

incidence: 14/14*, conc. range: 89–5,720 µg/kg, Ø conc.: 860.1 µg/kg, country: Finland²⁰⁵, *ncac

incidence: 8/8*, conc. range: tr–3,240 µg/kg, country: Finland²⁰⁵, *ncac

FUMONISIN B₁

incidence: 21/29, conc. range: 200–11,600 µg/kg, Ø conc.: 1,900 µg/kg, country: Spain¹⁵⁵

FUMONISIN B₂

incidence: 1/29, conc.: 500 µg/kg, country: Spain¹⁵⁵

FUSARENON X

incidence: 4/1,095* **, conc. range: 100–224 µg/kg, Ø conc.: 136 µg/kg, country: Norway²²⁴, *ncac, **of different categories (for more information please see the article)

incidence: 2/36* **, conc. range: 15.1–16.9 µg/kg, Ø conc.: 16 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

FUSARIC ACID

incidence: 2/2*, conc. range: 11,200–13,250 µg/kg, Ø conc.: 12,230 µg/kg, country: Canada⁶⁶, *swine feedstuff

incidence: 1/1, conc.: 81,600 µg/kg, country: Canada¹³⁰

HT-2 TOXIN

incidence: 1/8, conc.: 10,000 µg/kg, country: Germany⁶⁸

incidence: 36/86, conc. range: 100–500 µg/kg, country: Germany⁶⁸

incidence: 1/7, conc.: 10–20 µg/kg, country: Finland¹¹²

incidence: 2/44, conc. range: 10–32 µg/kg, Ø conc.: 21.0 µg/kg, country: Germany¹²³

incidence: 3/40, conc. range: 10–18 µg/kg, Ø conc.: 14.7 µg/kg, country: Germany¹²³

incidence: 2/47, conc. range: 8–10 µg/kg, Ø conc.: 9.0 µg/kg, country: Germany¹²³

incidence: 5/58, conc. range: 8–288 µg/kg, Ø conc.: 146.2 µg/kg, country: Germany¹²³

incidence: 3*/94 overall*, conc. range: 3–53 µg/kg, Ø conc.: 25.7 µg/kg, country: Canada²⁴⁰, *consumed by swine, **different kinds of sa

incidence: 10/29*, conc. range: ≤88 µg/kg, Ø conc.: 41 µg/kg, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

incidence: 29/36* **, conc. range: ≤83.2 µg/kg, Ø conc.: 23 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 7/40* **, conc. range: ≤100.5 µg/kg, Ø conc.: 59 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 19/36* **, conc. range: ≤135.0 µg/kg, Ø conc.: 42 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 36/36* **, conc. range: ≤715.8 µg/kg, Ø conc.: 202 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 14/15*, conc. range: 20–120 µg/kg, Ø conc.: 61 µg/kg, country: Poland⁵⁴⁹, *ncac

incidence: 10/12*, conc. range: ≤54 µg/kg, Ø conc.: 19 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *ncac

MONILIFORMIN

incidence: 5/19*, conc. range: tr–43 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 15/23*, conc. range: tr–380 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 33/33*, conc. range: tr–230 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 11/14*, conc. range: tr–290 µg/kg, country: Finland²⁰⁵, *ncac

incidence: 6/8*, conc. range: 35–750 µg/kg, Ø conc.: 390.8 µg/kg, country: Finland²⁰⁵, *ncac

incidence: 11/14* **, conc. range: <20–290 µg/kg, country: Finland³¹², *ncac, **spring barley

NIVALENOL

incidence: 14/222, conc. range: 60–340 µg/kg, Ø conc.: 136.4 µg/kg, country: Hungary⁶

incidence: 1/15, conc.: 51 µg/kg, country: Finland⁹

incidence: 5/45, conc. range: ≥50–80 µg/kg, Ø conc.: 61 µg/kg, country: Sweden⁶⁵

incidence: 1/32, conc.: 700 µg/kg, country: Sweden⁶⁵

incidence: 15/67, conc. range: ≥50–130 µg/kg, Ø conc.: 78 µg/kg, country: Sweden⁶⁵

incidence: 6/39, conc. range: ≥ 50–215 µg/kg, Ø conc.: 169 µg/kg, country: Sweden⁶⁵

incidence: 6/6* **, conc. range: 39–228 µg/kg, Ø conc.: 112 µg/kg, country: Korea¹⁰⁸, *for food and feed, **husked barley

incidence: 31/31* **, conc. range: 180–1,145 µg/kg, Ø conc.: 489.5 µg/kg,

country: Korea¹⁰⁸, *for food and feed, **unhusked barley

incidence: 5/44, conc. range: 3–10 µg/kg, Ø conc.: 5.2 µg/kg, country: Germany¹²³

incidence: 6/40, conc. range: 3–45 µg/kg, Ø conc.: 18.2 µg/kg, country: Germany¹²³

incidence: 5/47, conc. range: 4–38 µg/kg, Ø conc.: 17.4 µg/kg, country: Germany¹²³

incidence: 12/51, conc. range: 2–196 µg/kg, Ø conc.: 30.4 µg/kg, country: Germany¹²³

incidence: 24/58, conc. range: 2–333 µg/kg, Ø conc.: 34.4 µg/kg, country: Germany¹²³

incidence: 49/49*, conc. range: 13–258 µg/kg, Ø conc.: 50.1 µg/kg, country: Norway¹³², *probably feed

incidence: 3/6*, conc. range: 56–91 µg/kg, Ø conc.: 78.3 µg/kg, country: Japan/Poland²¹⁴, sa from Poland, *ncac

incidence: 91/1,095* **, conc. range: 50–770 µg/kg, Ø conc.: 121 µg/kg, country: Norway²²⁴, *ncac, **of different categories (for more information please see the article)

incidence: 5/5* **, conc. range: 12–321 µg/kg, Ø conc.: 222.4 µg/kg, country: Korea²²⁷, *ncac, **husked barley

incidence: 10/14* **, conc. range: 4–120 µg/kg, Ø conc.: 48.2 µg/kg, country: Korea²²⁷, *ncac, **husked barley

incidence: 17/18* **, conc. range: 28–1,109 µg/kg, Ø conc.: 330.8 µg/kg, country: Korea²²⁷, *ncac, **naked barley

incidence: 14/20* **, conc. range: 3–904 µg/kg, Ø conc.: 242.5 µg/kg, country: Korea²²⁷, *ncac, **naked barley

incidence: 2/2*, conc. range: 600–1,240 µg/kg, Ø conc.: 920 µg/kg, country: Japan²³⁰, *ncac

incidence: 2/2* **, conc. range:
920–1,670 µg/kg, Ø conc.: 1,295 µg/kg,
country: Japan²³⁰, *ncac, **naked barley

incidence: 19?/25*, conc. range:
tr–36,900 µg/kg, Ø conc.: 3,900 µg/kg,
country: Japan²³¹, *ncac

incidence: 1*/94 overall, conc.: 65 µg/kg,
country: Canada²⁴⁰, *consumed by swine

incidence: 78/94*, conc. range: 5–3,900 µg/
kg, Ø conc.: 218 µg/kg, country: Japan²⁶⁵,
*ncac

incidence: 18/116, conc. range: pr,
country: Canada³⁴⁶

incidence: 18/29*, conc. range: ≤571 µg/
kg, Ø conc.: 101 µg/kg, country:
Lithuania/Norway³⁹⁹, sa from Lithuania,
*for food and feed

incidence: 18/53, conc. range: ≤360 µg/kg,
Ø conc.: 170 µg/kg, country: Canada⁴¹⁰

incidence: 14/17*, conc. range:
30–1,070 µg/kg, Ø conc.: 281.8 µg/kg,
country: Japan⁴⁶⁹, *ncac

incidence: 5/5*, conc. range: 10–50 µg/kg,
Ø conc.: 30 µg/kg, country: Poland⁵⁰⁶, *ncac

incidence: 5/6*, conc. range: 85–328 µg/
kg, Ø conc.: 155.6 µg/kg, country: Korea⁵¹⁰,
*ncac

incidence: 7/36* **, conc. range: ≤18.2 µg/
kg, Ø conc.: 13 µg/kg, country: Czech
Republic⁵¹⁷, *for food and feed , **spring
barley

incidence: 4/40* **, conc. range: ≤14.2 µg/
kg, Ø conc.: 15 µg/kg, country: Czech
Republic⁵¹⁷, *for food and feed , **spring
barley

incidence: 33/36* **, conc. range:
≤140.0 µg/kg, Ø conc.: 45 µg/kg, country:
Czech Republic⁵¹⁷, *for food and feed ,
**spring barley

incidence: 7/36* **, conc. range: ≤46.2 µg/
kg, Ø conc.: 22 µg/kg, country: Czech
Republic⁵¹⁷, *for food and feed , **spring
barley

incidence: 14/15*, conc. range: 8–379 µg/kg,
Ø conc.: 57.8 µg/kg, country: Croatia/
Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 15/15*, conc. range: 10–130 µg/kg,
Ø conc.: 61 µg/ g, country: Poland⁵⁴⁹, *ncac

incidence: 17/17*, conc. range: 116–
26,000 µg/kg, Ø conc.: 4,944.6 µg/kg,
country: Japan⁶⁰⁰, *sa suspected to be pos.
for acetylated DON and NIV

incidence: 11/12*, conc. range: 40–303 µg/
kg, Ø conc.: 138 µg/kg, country: Lithuania/
Sweden⁶⁰⁷, sa from Lithuania, *ncac

4-ACETYLNIVALENOL

incidence: 15/17*, conc. range: tr–2,470 µg/
kg, country: Japan⁶⁰⁰, *sa suspected to be
pos. for acetylated DON and NIV

DIACETOXYSCIRPENOL

incidence: 5/45, conc. range: 300–
17,000 µg/kg, country: Germany⁶⁸

incidence: 11/89, conc. range: 200–700 µg/
kg, country: Germany⁶⁸

incidence: 11/15*, conc. range: 10–30 µg/kg,
Ø conc.: 16 µg/kg, country: Poland⁵⁴⁹, *ncac

T-2 TOXIN

incidence: 16/222, conc. range: 50–310 µg/
kg, Ø conc.: 220 µg/kg, country: Hungary⁶

incidence: 2/15, conc. range: 36–37 µg/kg,
Ø conc.: 37 µg/kg, country: Finland⁹

incidence: 2/43, conc. range: 300–
14,000 µg/kg, country: Germany⁶⁸

incidence: 4/89, conc. range: 200–500 µg/
kg, country: Germany⁶⁸

incidence: 4/44, conc. range: 2–9 µg/kg,
Ø conc.: 5.5 µg/kg, country: Germany¹²³

incidence: 1/40, conc.: 16 µg/kg, country:
Germany¹²³

incidence: 1/47, conc.: 6 µg/kg, country:
Germany¹²³

incidence: 11/51, conc. range: 7–106 µg/kg,
Ø conc.: 29.0 µg/kg, country: Germany¹²³

incidence: 17/58, conc. range: 4–305 µg/kg, Ø conc.: 71.1 µg/kg, country: Germany¹²³

incidence: 2/49*, conc. range: 22–46 µg/kg, Ø conc.: 34 µg/kg, country: Norway¹³², *probably feed

incidence: 1/1, conc.: 25,000 µg/kg, country: Canada¹⁸⁰

incidence: 4/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 1/94 overall*, conc.: 14 µg/kg, country: Canada²⁴⁰, *different kinds of sa

incidence: 1/116, conc.: pr, country: Canada³⁴⁶

incidence: 4/29*, conc. range: ≤76 µg/kg, Ø conc.: 40 µg/kg, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

incidence: 1/116, conc.: 1,000 µg/kg, country: Canada⁴¹⁰

incidence: 2/36* **, conc. range: ≤30.7 µg/kg, Ø conc.: 21 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 9/40* **, conc. range: ≤70.7 µg/kg, Ø conc.: 23 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 31/36* **, conc. range: ≤72.0 µg/kg, Ø conc.: 16 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 31/36* **, conc. range: ≤319.7 µg/kg, Ø conc.: 35 µg/kg, country: Czech Republic⁵¹⁷, *for food and feed, **spring barley

incidence: 15/15*, conc. range: 30–60 µg/kg, Ø conc.: 47 µg/kg, country: Poland¹⁵⁴⁹, *ncac

incidence: 1/5, conc.: 921 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

T-2 TETRAOL

incidence: 12/15*, conc. range: 10–40 µg/kg, Ø conc.: 29 µg/kg, country: Poland⁵⁴⁹, *ncac

T-2 TRIOL

incidence: 5/86, conc. range: 100–300 µg/kg, country: Germany⁶⁸

ZEARALENONE

incidence: 107/222, conc. range: 50–840 µg/kg, Ø conc.: 139.8 µg/kg, country: Hungary⁶

incidence: 5/40, conc. range: 10–20 µg/kg, country: Germany⁶⁸

incidence: 2/45, conc. range: 5–≤16 µg/kg, country: UK⁹⁴, sa imported?

incidence: 1/8, conc.: 43 µg/kg, country: Netherlands¹⁰³

incidence: 3/6* **, conc. range: 1–2 µg/kg, country: Korea¹⁰⁸, *for food and feed, **husked barley

incidence: 29/31* **, conc. range: 1–388 µg/kg, Ø conc.: 26.5 µg/kg, country: Korea¹⁰⁸, *for food and feed, **unhusked barley

incidence: 30/44, conc. range: 1–311 µg/kg, Ø conc.: 36.5 µg/kg, country: Germany¹²³

incidence: 7/40, conc. range: 1–4 µg/kg, Ø conc.: 2.6 µg/kg, country: Germany¹²³

incidence: 4/47, conc. range: 1–6 µg/kg, Ø conc.: 4.0 µg/kg, country: Germany¹²³

incidence: 8/51, conc. range: 1–34 µg/kg, Ø conc.: 8.8 µg/kg, country: Germany¹²³

incidence: 4/58, conc. range: 1–55 µg/kg, Ø conc.: 15.6 µg/kg, country: Germany¹²³

incidence: 43/44, conc. range: 4–4,764 µg/kg, Ø conc.: 399.6 µg/kg, country: Germany¹²³

incidence: 1/57, conc.: ~100 µg/kg, country: Germany¹²⁴, sa from EU and USA

incidence: 17/49*, conc. range: 1–5 µg/kg, Ø conc.: 2.6 µg/kg, country: Norway¹³², *probably feed

incidence: 5/7*, conc. range: 24–450 µg/kg, Ø conc.: 166.2 µg/kg, country: Canada/Germany²⁰², sa from Canada, *ncac

incidence: 1/5* **, conc.: 28 µg/kg, country: Korea²²⁷, *ncac, **husked barley

incidence: 3/14* **, conc. range: 27–49 µg/kg, Ø conc.: 40.7 µg/kg, country: Korea²²⁷, *ncac, **husked barley

incidence: 8/18* **, conc. range: 43–1,132 µg/kg, Ø conc.: 280.6 µg/kg, country: Korea²²⁷, *ncac, **naked barley

incidence: 6/20* **, conc. range: 81–580 µg/kg, Ø conc.: 216 µg/kg, country: Korea²²⁷, *ncac, **naked barley

incidence: 16/116, conc. range: pr, country: Canada³⁴⁶

incidence: 17/116, conc. range: 30–840 µg/kg, Ø conc.: 250 µg/kg, country: Canada⁴¹⁰

incidence: 179/179, conc. range: 0–10 µg/kg (168 sa), 11–50 µg/kg (8 sa), 51–100 µg/kg (2 sa), 100 µg/kg (1 sa), country: Austria⁴⁹¹

incidence: 4/16* **, conc. range: 10–193.4 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring barley

incidence: 34/50* **, conc. range: tr–16.5 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring barley

incidence: 9/15*, conc. range: 1–2,753 µg/kg, Ø conc.: 604.6 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 15/15*, conc. range: 40–120 µg/kg, Ø conc.: 63 µg/kg, country: Poland¹⁵⁴⁹, *ncac

incidence: 7/17*, conc. range: 105–15,300 µg/kg, Ø conc.: 4,158.4 µg/kg, country: Japan⁶⁰⁰, *sa suspected to be pos. for acetylated DON and NIV

incidence: 9/81, conc. range: ≤970 µg/kg, Ø conc.: 221 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

Penicillium Toxins

CITRININ

incidence: 2/14, conc. range: 160–1,000 µg/kg, Ø conc.: 580 µg/kg, country: Denmark²⁴

incidence: 1/1, conc.: 800 µg/kg, country: Denmark⁸²

incidence: 4/4*, conc. range: pr–1600 µg/kg, country: UK⁹³, *ncac

incidence: 7/45, conc. range: 1–4 µg/kg (4 sa), 5–≤8 µg/kg (3 sa), country: UK⁹⁴, sa imported?

incidence: 1/7345 overall*, conc.: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 1*/94 overall**, conc.: 10 µg/kg, country: Canada²⁴⁰, *consumed by dairy cattle, **different kinds of sa

incidence: 4/269, conc. range: 30–480 µg/kg, Ø conc.: 182.5 µg/kg, country: Sweden²⁶¹

incidence: 1/1, conc.: 71 µg/kg, country: UK²⁸⁸, sa from the UK

RUBRATOXIN B

incidence: 2/6, conc. range: 5.25–13.17 µg/kg, Ø conc.: 9.21 µg/kg, country: Czech Republic/France⁵⁵³, sa from Czech Republic

incidence: 1/7,345 overall*, conc.: nc, country: Hungary²⁰⁹, *different kinds of sa

Barley rootlet see Barley

Barley, high moisture may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/51 overall*, conc.: 48 µg/kg, country: Canada¹³³, *different kinds of sa

Barley, pressed may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 9/10*, conc. range:
3–23 µg/kg, Ø conc.: 11 µg/kg, country:
Japan²³⁰, *ncac

NIVALENOL

incidence: 9/10*, conc. range: 16–56 µg/kg,
Ø conc.: 33 µg/kg, country: Japan²³⁰, *ncac

Barley-oats may contain the
following mycotoxins:

Alternaria Toxins

ALTERNARIOL MONOMETHYL ETHER

incidence: 2/7*, conc. range: 80–160 µg/
kg, Ø conc.: 120 µg/kg, country:
Germany²⁹⁴, *ncac

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 4/4, conc.: 69–6,190 µg/kg,
Ø conc.: 1,805.5 µg/kg, country: Denmark²⁴

incidence: 1/1, conc.: 16,500 µg/kg,
country: Canada⁹²

incidence: 1/51* **, conc.: 380 µg/kg,
country: Canada¹³³, *hammermilled oats
and barley, **different kinds of sa

incidence: 23/55, conc. range: 2–9,500 µg/
kg, country: Norway⁵³⁸

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/3, conc. range:
4–141 µg/kg, Ø conc.: 72.3 µg/kg, country:
Finland²⁸¹

DIACETOXYSCIRPENOL

incidence: 1/51* **, conc.: 800 µg/kg,
country: Canada¹³³, *hammermilled oats
and barley, **different kinds of sa

T-2 TOXIN

incidence: 1/51* **, conc.: 3500 µg/kg,
country: Canada¹³³, *hammermilled oats
and barley, **different kinds of sa

Penicillium Toxins

CITRININ

incidence: 1/4, conc.: 2,000 µg/kg,
country: Denmark²⁴

incidence: 1/1, conc.: 60,000 µg/kg,
country: Canada⁹²

Barley-soybean diet may contain
the following mycotoxins:

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 1,400 µg/kg,
country: Denmark²⁹⁵

Penicillium Toxins

CITRININ

incidence: 1/1, conc.: 650 µg/kg, country:
Denmark²⁹⁵

Bean Feed bean may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3?/3*, conc. range: 0.045–
0.769 µg/kg, country: Italy⁴⁶⁷, *field bean

AFLATOXIN B₂

incidence: 3?/3*, conc. range:
0.090–0.316 µg/kg, country: Italy⁴⁶⁷, *field
bean

AFLATOXIN G₁

incidence: 3?/3*, conc. range:
0.081–1.303 µg/kg, country: Italy⁴⁶⁷, *field
bean

AFLATOXIN G₂

incidence: 3?/3*, conc. range: ≤0.051 µg/
kg, country: Italy⁴⁶⁷, *field bean

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 1/3*, conc.: 7 µg/kg, country:
Egypt¹⁶, *horse bean

incidence: 20/58*, conc. range:
20–> 1,000 µg/kg**, country: USA⁹⁰,
*different kinds of beans, all moldy,
**pinto, navy, great northern, red, pink, and
black turtle soup beans

incidence: 3/4*, conc. range:
20–1,900 µg/kg, Ø conc.: 650 µg/kg,
country: Canada⁹², *white dried beans, 1
sa powdered

incidence: 1/6*, conc.: 4 µg/kg, country:
Netherlands¹⁰³, *broad bean

PENICILLIC ACID

incidence: 3/58*, conc. range:
300–500 µg/kg**, Ø conc.: 366.7 µg/kg,
country: USA⁹⁰, *different kinds of beans,
all moldy, **red beans

Fusarium Toxins

DEOXYNIVALENOL

incidence: 5/22*, conc. range:
2–160 µg/kg, Ø conc.: 42.8 µg/kg, country:
Croatia/Japan⁵⁴⁷, sa from Croatia, *for food
and feed

NIVALENOL

incidence: 1/22*, conc.: 24 µg/kg, country:
Croatia/Japan⁵⁴⁷, sa from Croatia, *for
food and feed

ZEARALENONE

incidence: 1/22*, conc.: 3 µg/kg, country:
Croatia/Japan⁵⁴⁷, sa from Croatia, *for
food and feed

Bee wings may contain the following
mycotoxins:

Fusarium Toxins

FUSARIC ACID

incidence: 1/1*, conc.: 5,160 µg/kg,
country: USA⁴¹³, *the glumes of corn
florets and some very small membrane
fragments of corn cobs

Beef feed see Feed (beef)

Bengal gram see Gram (bengal)

Bengal gram husk see Husk (bengal
gram)

Bird food see Food, bird

Biri testa see Testa (biri)

Black gram see Gram (black)

Black gram husk see Husk (black
gram)

Bone meal see Meal (bone)

Bran may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 70 µg/kg, country:
Australia¹²¹

Fusarium Toxins

DEOXYNIVALENOL

incidence: 78/85, conc. range: 50–960 µg/kg,
Ø conc.: 292.9 µg/kg, country: Hungary⁶

incidence: ?/21*, conc. range: ≤2,690 µg/
kg, country: Germany³⁶⁴, *ncac

incidence: 120/120, conc. range: 0–100 µg/
kg (1 sa), 101–500 µg/kg (56 sa), 501–
1000 µg/kg (37 sa), ≤4,700 µg/kg (26 sa),
country: Austria⁴⁹¹

NIVALENOL

incidence: 11/85, conc. range: 60–180 µg/kg,
Ø conc.: 137.3 µg/kg, country: Hungary⁶

T-2 TOXIN

incidence: 15/85, conc. range: 50–950 µg/kg, Ø conc.: 234.7 µg/kg, country: Hungary⁶

incidence: ?/21*, conc. range: ≤2.9 µg/kg, country: Germany³⁶⁴, *ncac

ZEARALENONE

incidence: 53/85, conc. range: 50–1,560 µg/kg, Ø conc.: 308.5 µg/kg, country: Hungary⁶

incidence: 1/1, conc.: 3 µg/kg, country: Japan⁷⁰, sa from China

incidence: 12/12, conc. range: 0–10 µg/kg (11 sa), 30 µg/kg (1 sa), country: Austria⁴⁹¹

Bran (maize) may contain the following mycotoxins:

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 1/17, conc.: 1,000 µg/kg, country: Zambia¹¹⁴

FUMONISIN B₁

incidence: 4/4, conc. range: 230–600 µg/kg, Ø conc.: 420 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: ?/85, conc. range: ≤3,540 µg/kg, Ø conc.: 410 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

FUMONISIN B₂

incidence: 4/4, conc. range: ≤130 µg/kg, Ø conc.: 30 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: ?/85, conc. range: ≤1,270 µg/kg, Ø conc.: 120 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

FUMONISIN B₃

incidence: 4/4, conc. range: ≤50 µg/kg, Ø conc.: 10 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: ?/85, conc. range: ≤1,030 µg/kg, Ø conc.: 40 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

ZEARALENONE

incidence: 5/17, conc. range: 400–600 µg/kg, country: Zambia¹¹⁴

Bran (rice) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/5, conc.: 30 µg/kg, country: Egypt¹⁶

incidence: 35/40, conc. range: 1–4 µg/kg (23 sa), 5–≤13 µg/kg (12 sa), country: UK⁹⁴, sa imported?!

incidence: 29/40, conc. range: 1–21 µg/kg, Ø conc.: 6.8 µg/kg, country: UK⁹⁶, sa imported?!

incidence: 4/7, conc. range: <20 µg/kg (4 sa), country: UK²⁶⁷, sa imported

incidence: 9/9*, conc. range: 36–71 µg/kg, country: Denmark⁴²⁶, sa from Indonesia *poultry feedstuff

incidence: 5/24, conc. range: ≤2 µg/kg, Ø conc.: 1.4 µg/kg, country: Bangladesh/UK⁴²⁸, sa from Bangladesh

incidence: 2/12*, conc. range: 100 µg/kg (2 sa), country: India⁴⁹⁵, *poultry feedstuff

incidence: 1/3*, conc.: ≤360 µg/kg, country: India⁴⁹⁷, *poultry feedstuff

incidence: 22/24, conc. range: 0.3–4.5 µg/kg, Ø conc.: 1.31 µg/kg, country: Vietnam⁵⁸⁸

incidence: 3/27, conc. range: ≤11 µg/kg, Ø conc.: 10 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

AFLATOXIN B₂

incidence: 9/40, conc. range: 1–2 µg/kg, Ø conc.: 1.2 µg/kg, country: UK⁹⁶, sa imported?!

incidence: 3/24, conc. range: 0.2–0.3 µg/kg, Ø conc.: 0.23 µg/kg, country: Vietnam⁵⁸⁸

AFLATOXIN G₁

incidence: 1/5, conc.: 20 µg/kg, country: Egypt¹⁶

incidence: 5/40, conc. range: 2–3 µg/kg, Ø conc.: 1.4 µg/kg, country: UK⁹⁶, sa imported?!

incidence: 2/24, conc. range: 0.8–9.4 µg/kg, Ø conc.: 4.95 µg/kg, country: Vietnam⁵⁸⁸

AFLATOXINS (TOTAL)

incidence: 40/40, conc. range: 1–4 µg/kg (28 sa), 5–≤19 µg/kg (12 sa), country: UK⁹⁴, sa imported?!

incidence: 3/10, Ø conc.: 567 µg/kg, country: India⁴³⁸

AFLATOXINS

incidence: 25/31*, conc. range: ≤60.0 µg/kg, country: Vietnam/France¹⁵⁰, sa from Vietnam, *ncac

incidence: 3/14*, conc. range: 10–29 µg/kg (1 sa), 50–≤100 µg/kg (2 sa), country: India³⁴⁹, *poultry feed

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 6*/40, conc. range: 100–220 µg/kg, Ø conc.: 151.7 µg/kg, country: UK⁹⁶, sa imported?!, *mycotoxin suspected but identity of peak not unequivocally confirmed

OCHRATOXIN A

incidence: 2/3, Ø conc.: 9 µg/kg, country: Egypt¹⁶

incidence: 3/40, conc. range: 1–4 µg/kg (1 sa), 5–≤6 µg/kg (2 sa), country: UK⁹⁴, sa imported?

incidence: 38*/40, conc. range: 1–12 µg/kg, Ø conc.: 3.1 µg/kg, country: UK⁹⁶, sa imported?, *mycotoxin suspected but

identity of peak not unequivocally confirmed

incidence: 1/14*, conc. range: 10–29 µg/kg, country: India³⁴⁹, *poultry feed

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/4, conc.: 88 µg/kg, country: Egypt¹⁶

incidence: 1/27, conc.: 79 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

FUMONISINS

incidence: 2/27, conc. range: 135–929 µg/kg, Ø conc.: 532 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

MONILIFORMIN

incidence: 1*/40, conc.: 70 µg/kg, country: UK⁹⁶, sa imported?, *mycotoxin suspected but identity of peak not unequivocally confirmed

ZEARALENONE

incidence: 1/40, conc.: 44 µg/kg, country: UK⁹⁴, sa imported?

incidence: 9/24, conc. range: 18–337 µg/kg, Ø conc.: 83 µg/kg, country: Vietnam⁵⁸⁸

incidence: 5/27, conc. range: ≤162 µg/kg,

Ø conc.: 77 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

Penicillium Toxins

CITRININ

incidence: 1/4, conc.: 20 µg/kg, country: Egypt¹⁶

Bran (rice, deoiled) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 48/143, conc. range: ≤25 µg/kg (36 sa), 26–50 µg/kg (5 sa), 51–100 µg/kg (4 sa), 101–200 µg/kg (2 sa), 421 µg/kg

(1 sa), Ø conc.: 31.1 µg/kg, country: India²⁴⁷

AFLATOXIN B₂
incidence: 13/143, Ø conc.: 10.58 µg/kg,
country: India²⁴⁷

Bran (wheat) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/5, Ø conc.: 50 µg/kg, country: Egypt¹⁶

incidence: 1/1, conc.: 3 µg/kg, country: India/UK¹²⁹, sa from India

incidence: 2/3*, conc. range: 3–4 µg/g, Ø conc.: 3.5 µg/kg, country: UK¹²⁹, sa from India, *wheat bran and chana testa

incidence: 20/108, conc. range: ≤25 µg/kg (10 sa), 26–50 µg/kg (7 sa), ≤67 µg/kg (3 sa), Ø conc.: 26.1 µg/kg, country: India²⁴⁷

incidence: 3/3*, conc. range: 130–300 µg/kg, Ø conc.: 193.3 µg/kg, country: India⁴⁹⁷, *poultry feedstuff

incidence: 3/10*, Ø conc.: 185 µg/kg, country: Egypt⁵¹⁶, *poultry feedstuff ingredient

incidence: 2/10, conc. range: 1–30 µg/kg (1 sa), 101–200 µg/kg (1 sa), country: India⁵⁸⁰

AFLATOXIN B₂
incidence: 1/108, conc.: 3 µg/kg, country: India²⁴⁷

AFLATOXIN G₁
incidence: 1/1, conc.: 3 µg/kg, country: India/UK¹²⁹, sa from India

incidence: 2/3*, conc. range: 3 µg/kg, Ø conc.: 3 µg/kg, country: UK¹²⁹, sa from India, *wheat bran and chana testa

AFLATOXINS (TOTAL)
incidence: 4/17*, conc. range: ≤1.07 µg/kg, country: Kuwait⁴²¹, *poultry feed

AFLATOXINS
incidence: 2/4, conc. range: 2–3 µg/kg, country: Egypt³⁵⁷

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 15/24, conc. range: 0.58–3.4 µg/kg, Ø conc.: 1.5 µg/kg, country: Bulgaria/Germany⁸, sa from Bulgaria

incidence: 1/3, Ø conc.: 6 µg/kg, country: Egypt¹⁶

incidence: 3/4, conc. range: 2–6 µg/kg, Ø conc.: 4 µg/kg, country: Netherlands¹⁰³

incidence: 10/14*, conc. range: ≤12.1 µg/kg, country: Kuwait⁴²¹, *poultry feed

incidence: 6/8, conc. range: ≤23 µg/kg, Ø conc.: 7 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

Fusarium Toxins

DEOXYNIVALENOL
incidence: 11/14*, conc. range: ≤220 µg/kg, country: Kuwait⁴²¹, *poultry feed

incidence: 79/98, conc. range: ≤18,991 µg/kg, Ø conc.: 1,038 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

FUMONISIN
incidence: 20/21*, conc. range: ≤6,000 µg/kg, country: Kuwait⁴²¹, *poultry feed

FUMONISINS
incidence: 4/98, conc. range: ≤646 µg/kg, Ø conc.: 310 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

T-2 TOXIN
incidence: 1/86, conc.: 266 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

ZEARALENONE

incidence: 2/4, conc. range: 43–67 µg/kg,
 Ø conc.: 55 µg/kg, country: Egypt¹⁶

incidence: 1/4, conc.: 22 µg/kg, country:
 Netherlands¹⁰³

incidence: 1/3*, conc.: 316 µg/kg, country:
 UK¹²⁹, sa from India, *wheat bran and
 chana testa

incidence: 13/14*, conc. range: ≤50 µg/kg,
 country: Kuwait⁴²¹, *poultry feed

incidence: 1/10*, conc.: 25 µg/kg,
 country: Egypt⁵¹⁶, *poultry feedstuff
 ingredient

incidence: 26/98, conc. range: ≤1,489 µg/
 kg, Ø conc.: 165 µg/kg, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and
 Oceania

Penicillium Toxins**CITRININ**

incidence: 5/24, conc. range: 5.9–230 µg/
 kg, Ø conc.: 55.6 µg/kg, country: Bulgaria/
 Germany⁸, sa from Bulgaria

incidence: 1/4, conc.: 3 µg/kg, country:
 Egypt¹⁶

Bread crumbs see Feed

Breeder feed see Feed (breeder)

Brewers' grains see Grain(s)

Broiler feed see Feed (broiler)

Broiler finisher see Finisher (broiler)

Broiler finisher mash see Mash
 (broiler finisher)

Broiler mixed feed see Feed
 (broiler)

Broiler starter see Starter (broiler)

Broiler starter mash see Mash
 (broiler starter)

Buckwheat Feed buckwheat
 may contain the following
 mycotoxins:

Aspergillus and **Penicillium** Toxins**OCHRATOXIN A**

incidence: 3/6*, conc. range: 0.75–1.14 µg/
 kg, Ø conc.: 0.96 µg/kg, country: Poland⁵⁰⁶,
 *ncac

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 2/6*, conc. range:
 74–87 µg/kg, Ø conc.: 80.5 µg/kg, country:
 Poland⁵⁰⁶, *ncac

By-products (grain) may contain the
 following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 44/85, conc. range: 1–20 µg/kg
 (39 sa), 21–100 µg/kg (4 sa), 101–300 µg/
 kg (1 sa), country: USA³⁷⁰

By-products (maize) may contain
 the following mycotoxins:

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 13/13, conc. range:
 ≤6,682 µg/kg, Ø conc.: 1,626 µg/kg, country:
 Germany⁵⁷²

3-ACETYLDEOXYNIVALENOL

incidence: 6/13, conc.
 range: ≤114 µg/kg, Ø conc.: 44 µg/kg,
 country: Germany⁵⁷²

15-ACETYLDEOXYNIVALENOL

incidence: 11/13, conc. range: $\leq 1,780$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 496 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

FUSARENON X

incidence: 4/13, conc. range: ≤ 494 $\mu\text{g}/\text{kg}$, \emptyset conc.: 195 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

HT-2 TOXIN

incidence: 11/13, conc. range: ≤ 99 $\mu\text{g}/\text{kg}$, \emptyset conc.: 55 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

NEOSOLANIOL

incidence: 1/13, conc.: 9 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

NIVALENOL

incidence: 7/13, conc. range: $\leq 2,050$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 694 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

15-MONOACETOXYSCIRPENOL

incidence: 2/13, conc. range: 23–39 $\mu\text{g}/\text{kg}$, \emptyset conc.: 31 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

DIACETOXYSCIRPENOL

incidence: 1/13, conc.: 21 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

SCIRPENTRIOL

incidence: 2/13, conc. range: 24–38 $\mu\text{g}/\text{kg}$, \emptyset conc.: 31 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

T-2 TOXIN

incidence: 9/13, conc. range: ≤ 70 $\mu\text{g}/\text{kg}$, \emptyset conc.: 29 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

T-2 TETRAOL

incidence: 3/13, conc. range: ≤ 56 $\mu\text{g}/\text{kg}$, \emptyset conc.: 39 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

T-2 TRIOL

incidence: 1/13, conc.: 8 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

ZEARALENONE

incidence: 12/13, conc. range: $\leq 1,362$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 369 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

 α -ZEARALENOL

incidence: 3/13, conc. range: ≤ 3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

 β -ZEARALENOL

incidence: 1/13, conc.: 17 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

By-products (oilseed) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/8*, conc.: 42 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷², *oilseed by-products (sunflower meal, linseed meal, and palm kernel expeller)

HT-2 TOXIN

incidence: 1/8*, conc.: 5 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷², *oilseed by-products (sunflower meal, linseed meal, and palm kernel expeller)

ZEARALENONE

incidence: 1/8*, conc.: 4 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷², *oilseed by-products (sunflower meal, linseed meal, and palm kernel expeller)

Cake (*ambadi*) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/2, conc.: 59.4 $\mu\text{g}/\text{kg}$, country: India²⁵³

Cake (*Carthamus*) see Cake (safflower)

Cake (*castor*) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 4/6, conc. range: tr–259.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 76.3 $\mu\text{g}/\text{kg}$, country: India²⁵³

Cake (cocoa) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B

incidence: 2/7, conc. range: ≤ 10 $\mu\text{g}/\text{kg}$ (1 sa), >10 – ≤ 100 $\mu\text{g}/\text{kg}$ (1 sa), country: France⁴⁶

Cake (coconut) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 7/10, conc.: 10–60 $\mu\text{g}/\text{kg}$, country: India¹⁸³

incidence: 9/9*, conc. range: <50 $\mu\text{g}/\text{kg}$ (1 sa), 50–250 $\mu\text{g}/\text{kg}$ (8 sa), country: Sri Lanka⁵⁶⁸, *coconut refuse press cake

incidence: 2/7, conc. range: 1–30 $\mu\text{g}/\text{kg}$, country: India⁵⁸⁰

AFLATOXINS (TOAL)

incidence: 4/4*, conc. range: 10.2–64.6 $\mu\text{g}/\text{kg}$, country: Vietnam/France, sa from Vietnam, *ncac

Cake (cottonseed) may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 1/15, conc.: 800 $\mu\text{g}/\text{kg}$, country: Egypt⁸⁹

TENUAZONIC ACID

incidence: 2/15, \emptyset conc.: 346.6 $\mu\text{g}/\text{kg}$, country: Egypt⁸⁹

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/10, conc.: 10–40 $\mu\text{g}/\text{kg}$, country: India¹⁸³

incidence: 8/10, conc.: tr–20 $\mu\text{g}/\text{kg}$, country: India¹⁸³

incidence: 44/55, conc. range: 44.5–397.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 138.6 $\mu\text{g}/\text{kg}$, country: India²⁵³

incidence: 1/1, conc.: ~ 500 $\mu\text{g}/\text{kg}$, country: UK²⁸⁴

incidence: 3/3*, conc. range: 3.2–4.4 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3.6 $\mu\text{g}/\text{kg}$, country: Egypt²⁸⁵, *fresh sa

incidence: 3/3*, conc. range: 4.2–6.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5.2 $\mu\text{g}/\text{kg}$, country: Egypt²⁸⁵, *stored sa

incidence: 4/13, conc. range: 40–500 $\mu\text{g}/\text{kg}$, country: India³⁵⁸

incidence: 10/15, conc. range: 1–30 $\mu\text{g}/\text{kg}$ (3 sa), 31–100 $\mu\text{g}/\text{kg}$ (3 sa), 101–200 $\mu\text{g}/\text{kg}$ (1 sa), 301–400 $\mu\text{g}/\text{kg}$ (2 sa), 501–600 $\mu\text{g}/\text{kg}$ (1 sa), country: India⁵⁸⁰

AFLATOXIN B₂

incidence: 3/3*, conc. range: 1.6–3.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.2 $\mu\text{g}/\text{kg}$, country: Egypt²⁸⁵, *fresh sa

incidence: 3/3*, conc. range: 2.7–3.0 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.8 $\mu\text{g}/\text{kg}$, country: Egypt²⁸⁵, *stored sa

AFLATOXINS (B₁ + B₂)

incidence: 5/10*, \emptyset conc.: 310 $\mu\text{g}/\text{kg}$, country: Egypt⁵¹⁶, *poultry feedstuff ingredient

AFLATOXIN B

incidence: ?/13, conc. range: 6–10 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7.3 $\mu\text{g}/\text{kg}$, country: Pakistan¹⁶²

incidence: 5/19, conc. range: 4–19 $\mu\text{g}/\text{kg}$, \emptyset conc.: 9 $\mu\text{g}/\text{kg}$, country: Pakistan⁴¹²

AFLATOXIN G₁

incidence: 2/3*, conc. range: 1.8–2.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.2 $\mu\text{g}/\text{kg}$, country: Egypt²⁸⁵, *fresh sa

incidence: 3/3*, conc. range: 1.9–2.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2.4 $\mu\text{g}/\text{kg}$, country: Egypt²⁸⁵, *stored sa

incidence: 1/13, conc.: <1 $\mu\text{g}/\text{kg}$, country: India³⁵⁸

AFLATOXIN G

incidence: ?/13, conc. range: 4–8 µg/kg,
 Ø conc.: 5.7 µg/kg, country: Pakistan¹⁶²

incidence: 5/19, conc. range:

≤5 µg/kg, Ø conc.: 3.6 µg/kg, country:
 Pakistan⁴¹²

AFLATOXIN

incidence: 3/6, conc. range: ≤175 µg/kg,
 country: Nigeria¹⁰⁹

incidence: 9/9, conc. range: 11–30 µg/kg
 (8 sa), 31–100 µg/kg (1 sa), country:
 India/UK³¹¹, sa from India

incidence: 6*/6**, conc.: ≤30 µg/kg,
 country: India⁵¹⁵, *all sa contained
 aflatoxin, **poultry feed

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 2/4, conc. range:
 310–528 µg/kg, Ø conc.: 419 µg/kg,
 country: Egypt¹⁶

ZEARALENONE

incidence: 4/4, conc. range: 8–22 µg/kg,
 Ø conc.: 13 µg/kg, country: Egypt¹⁶

incidence: 1/10, conc.: 20 µg/kg, country:
 India¹⁸³

Penicillium Toxins**CITRININ**

incidence: 1/4, conc.: 50 µg/kg, country:
 Egypt¹⁶

Cake (dairy) may contain the
 following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 1/1, conc.: 116 µg/kg, country:
 UK²⁸⁸, sa from Saudi Arabia

AFLATOXIN B₂

incidence: 1/1, conc.: 10 µg/kg, country:
 UK²⁸⁸, sa from Saudi Arabia

AFLATOXIN G₁

incidence: 1/1, conc.: 10 µg/kg, country:
 UK²⁸⁸, sa from Saudi Arabia

AFLATOXIN G₂

incidence: 1/1, conc.: 1 µg/kg, country:
 UK²⁸⁸, sa from Saudi Arabia

Cake (jagni) may contain the
 following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 5/6, conc. range: 72.7–
 140.6 µg/kg, Ø conc.: 110.7 µg/kg,
 country: India²⁵³

Cake (linseed) may contain the
 following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 10/23, conc. range: 44.5–
 153.1 µg/kg, Ø conc.: 94.7 µg/kg, country:
 India²⁵³

incidence: 2/5, conc. range: 1–30 µg/kg,
 country: India⁵⁸⁰

Cake (mahua) may contain the
 following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 4/16, conc. range: 72.7–343.1 µg/
 kg, Ø conc.: 200.9 µg/kg, country: India²⁵³

Cake (mustard) may contain the
 following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 9/25, conc. range:
 71.7–275.3 µg/kg, Ø conc.: 138.0 µg/kg,
 country: India²⁵³

incidence: 1/10, conc.: 1–30 µg/kg,
country: India⁵⁸⁰

AFLATOXIN B₂
incidence: 4/25, conc. range: 44.5–
85.2 µg/kg, Ø conc.: 64.9 µg/kg,
country: India²⁵³

AFLATOXINS (TOTAL)
incidence: 1/34*, conc.: 700 µg/kg,
country: India⁴³⁸, *mustard oil cake

**Cake (mustard, cottonseed,
and sunflower)** may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/36, conc. range: ≤100 µg/kg,
country: India⁵⁷⁸

Cake (neem) may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/10, conc. range: 59.4–165.9 µg/
kg, Ø conc.: 126.0 µg/kg, country: India²⁵³

Cake (niger) may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 15/20, conc. range: 58.1–641.7 µg/
kg, Ø conc.: 184.3 µg/kg, country: India²⁵³

AFLATOXIN B₂
incidence: 9/20, conc. range: 44.5–98.8 µg/
kg, Ø conc.: 77.7 µg/kg, country: India²⁵³

Cake (oil cake) see Oil cake

Cake (palm kernel expeller) may
contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 98/98, conc. range: 10–400 µg/
kg, country: UK³⁶, sa imported?

Cake (peanut) may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 7/10, conc. range:
113.5–2,250 µg/kg, country: India⁸⁵

incidence: 1/1, conc.: 3,182 µg/kg,
country: UK¹²⁹, sa from India

incidence: 10/10, conc. range:
80–120 µg/kg, country: India¹⁸³

incidence: 10/10, conc. range:
40–80 µg/kg, country: India¹⁸³

incidence: 10/10, conc. range:
40–60 µg/kg, country: India¹⁸³

incidence: 291/301, conc. range: ≤25 µg/kg
(27 sa), 26–50 µg/kg (32 sa), 51–100 µg/kg
(44 sa), 101–200 µg/kg (49 sa), 201–
500 µg/kg (67 sa), 501–1,000 µg/kg (40
sa), 1,001–1,500 µg/kg (13 sa), 1,501–
2,000 µg/kg (4 sa), 2,001–3,000 µg/kg
(7 sa), 3,001–4,000 µg/kg (3 sa), 4,001–
5,000 µg/kg (1 sa), ≤6,280 µg/kg (4 sa),
Ø conc.: 449.95 µg/kg, country: India²⁴⁷

incidence: 159/248, conc. range: tr–515.6 µg/
kg, Ø conc.: 157.8 µg/kg, country: India²⁵³

incidence: 4/12, conc. range: 80–290 µg/
kg, Ø conc.: 180 µg/kg, country: Taiwan³⁰⁶

incidence: 1/1, conc.: 300 µg/kg, country:
Denmark³¹⁶, sa from Congo

incidence: 31/32*, conc. range: 19–455 µg/
kg, Ø conc.: 137.4 µg/kg, country:
Nigeria³³⁰, *feed rations for poultry and
animals

incidence: 13/26, conc. range:
16–2,000 µg/kg, country: India³⁵⁸

incidence: 10/10, conc. range: tr (7 sa)
1,000–3,000 µg/kg (3 sa), country:
India³⁸³

incidence: 63/63*, conc. range: ≤500 µg/kg
(44 sa), 600–1,000 µg/kg (14 sa), 1,100–
4,000 µg/kg (5 sa), country: India⁴⁹⁵,
*poultry feedstuff

incidence: 31/50*, conc. range: 250 µg/kg
(16 sa), 500 µg/kg (8 sa), 1,000 µg/kg (6
sa), 1,500 µg/kg (1 sa), country: India⁴⁹⁶,
*poultry feedstuff

incidence: 41/43*, conc. range:
160–3,600 µg/kg, Ø conc.: 813.9 µg/kg,
country: India⁴⁹⁷, *poultry feedstuff

incidence: 11/15, conc. range: 1–30 µg/kg
(5 sa), 101–200 µg/kg (2 sa), 401–500 µg/
kg (1 sa), 701–800 µg/kg (1 sa), 801–
900 µg/kg (2 sa), country: India⁵⁸⁰

AFLATOXIN B₂

incidence: 1/1, conc.: 487 µg/kg, country:
UK¹²⁹, sa from India

incidence: 4/10, conc. range: tr–10 µg/kg,
country: India¹⁸³

incidence: 3/10, conc. range: tr–20 µg/kg,
country: India¹⁸³

incidence: 2/10, conc. range: 40 µg/kg,
country: India¹⁸³

incidence: 142/301, Ø conc.: 80.4 µg/kg,
country: India²⁴⁷

incidence: 1/1, conc.: 40 µg/kg, country:
Denmark³¹⁶, sa from Congo

incidence: 2/26, conc. range: <1 µg/kg,
country: India³⁵⁸

AFLATOXIN B

incidence: 8/12, conc. range: ≤10 µg/kg (2
sa), >10–≤100 µg/kg (4 sa), >100 µg/kg (2
sa)*, country: France⁴⁶, *350 and 1,250 µg/
kg AFB₁

AFLATOXIN G₁

incidence: 2/10, conc. range: tr, country:
India¹⁸³

incidence: 1/1, conc.: 60 µg/kg, country:
Denmark³¹⁶, sa from Congo

incidence: 9/26, conc. range: <1 µg/kg,
country: India³⁵⁸

AFLATOXINS (B + G)

incidence: 19/25, conc. range:
10–4,500 µg/kg, country: France⁴⁵

AFLATOXIN

incidence: 12/20, conc. range: 20–2,830 µg/
kg (estimated), country: India³³

incidence: 20/23, conc. range: ≤1,862 µg/
kg, country: Nigeria¹⁰⁹

incidence: ?/55*, conc. range: ≤1,875 µg/
kg, country: India²⁵⁰, *commonly used as
poultry feed ingredient

incidence: 17/17, conc. range: 11–30 µg/kg
(2 sa), 31–100 µg/kg (2 sa),
>100–≤1,007 µg/kg (13 sa), country:
India/UK³¹¹, sa from India

incidence: 55/56, conc. range: 10–30 µg/
kg (10 sa), 101–500 µg/kg (43 sa),
>500 µg/kg (2 sa), country: India/UK³¹¹,
sa from India

AFLATOXINS

incidence: 10/27*, conc. range: 10–29 µg/
kg (2 sa), 30–49 µg/kg (1 sa), 50–100 µg/
kg (3 sa), 100–≤3,500 µg/kg (4 sa),
country: India³⁴⁹, *poultry feed

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 10/20, conc. range: 500–
20,000 µg/kg (estimated), country: India³³

OCHRATOXIN A

incidence: 1/27*, conc. range: 50–100 µg/
kg, country: India³⁴⁹, *poultry feed

Fusarium Toxins

NEOSOLANIOL

incidence: 1/10, conc.: 10 µg/kg, country:
India¹⁸³

Cake (peanut, deoiled) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 76/79, conc. range: ≤25 µg/kg (12 sa), 26–50 µg/kg (10 sa), 51–100 µg/kg (17 sa), 101–200 µg/kg (15 sa), 201–500 µg/kg (10 sa), 501–1,000 µg/kg (7 sa), 1,001–1,500 µg/kg (5 sa), Ø conc.: 239.57 µg/kg, country: India²⁴⁷

incidence: 88/88, conc. range: ≤200 µg/kg (50 sa), 200–400 µg/kg (24 sa), 400–800 µg/kg (149 sa), country: India⁵⁷⁸

AFLATOXIN B₂
incidence: 39/79, Ø conc.: 49.3 µg/kg, country: India²⁴⁷

Cake (press) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 92/92, conc. range: <50 µg/kg (34 sa), 50–250 µg/kg (49 sa), 250–1,000 µg/kg (9 sa), country: Sri Lanka⁵⁶⁸

incidence: 15/15*, conc. range: <50 µg/kg (6 sa), 50–250 µg/kg (7 sa), 250–1,000 µg/kg (2 sa), country: Sri Lanka⁵⁶⁸, *pairing press cake

Cake (rapeseed) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/4, conc.: 22 µg/kg, country: India²⁴⁷

Cake (rice bran) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/2, conc.: 1 µg/kg, country: Bangladesh/UK⁴²⁸, sa from Bangladesh

Cake (rice germ) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/5, Ø conc.: 25 µg/kg, country: Egypt¹⁶

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1*/3, Ø conc.: 4 µg/kg, country: Egypt¹⁶, *mycotoxin suspected but identity of peak not unequivocally confirmed

Fusarium Toxins

DEOXYNIVALENOL
incidence: 2/4, conc. range: 200–264 µg/kg, Ø conc.: 232 µg/kg, country: Egypt¹⁶

Cake (safflower) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 2/10, conc. range: tr, country: India¹⁸³

incidence: 7/8, conc. range: tr–167.4 µg/kg, Ø conc.: 118.4 µg/kg, country: India²⁵³

Fusarium Toxins

ZEARALENONE
incidence: 1/10, conc.: 20 µg/kg, country: India¹⁸³

Cake (sal seed) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 13/21, conc. range:
71.7–180.2 µg/kg, Ø conc.: 105.1 µg/kg,
country: India²⁵³

AFLATOXIN B₂

incidence: 5/21, conc. range: 44.5–71.7 µg/
kg, Ø conc.: 58.1 µg/kg, country: India²⁵³

Cake (sesame) may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 52/107, conc. range: ≤25 µg/kg
(24 sa), 26–50 µg/kg (16 sa), 51–100 µg/kg
(5 sa), 101–200 µg/kg (5 sa), 201–500 µg/
kg (1 sa), 527 µg/kg (1 sa), Ø conc.:
51.17 µg/kg, country: India²⁴⁷

incidence: 5/8, conc. range:
59.4–113.8 µg/kg, Ø conc.: 78.3 µg/kg,
country: India²⁵³

AFLATOXIN B₂

incidence: 8/107, conc. range: nc, Ø conc.:
16.21 µg/kg, country: India²⁴⁷

Cake (soybean) may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B**

incidence: 24/51, conc. range: ≤10 µg/kg
(9 sa), >10–≤100 µg/kg (8 sa), >100 µg/kg
(7 sa)*, country: France⁴⁶, *110–247 µg/kg
AFB₁

AFLATOXIN

incidence: 1/8, conc.: 140 µg/kg, country:
Nigeria¹⁰⁹

incidence: 17/19, conc. range: 11–30 µg/kg
(11 sa), 31–100 µg/kg (6 sa), country:
India/UK³¹¹, sa from India

Cake (sunflower) may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 5/10, conc. range: tr–20 µg/kg,
country: India¹⁸³

incidence: 3/4, conc. range: 6.33–45 µg/kg,
Ø conc.: 31.49 µg/kg, country: India²⁴⁷

incidence: 3/4, conc. range:
59.4–245.8 µg/kg, Ø conc.: 165.9 µg/kg,
country: India²⁵³

AFLATOXIN B

incidence: 4/15, conc. range: ≤10 µg/kg
(1 sa), >10–≤100 µg/kg (3 sa), country:
France⁴⁶

Aspergillus* and *Penicillium* Toxins*CYCLOPIAZONIC ACID**

incidence: 7/10, conc. range: 300–20,000
µg/kg (estimated), country: India³³

Fusarium* Toxins*ZEARALENONE**

incidence: 1/10, conc.: tr, country: India¹⁸³

Calf fattening mixed feed see Feed,
mixed

Calf feed see Feed (calf)

***Carthamus* cake** see Cake (safflower)

Cassava chip may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 12/12, conc. range: 0.2–1.6 µg/
kg, Ø conc.: 0.86 µg/kg, country:
Vietnam⁵⁸⁸

AFLATOXIN B₂

incidence: 2/12, conc. range: 0.1–0.3 µg/kg, Ø conc.: 0.20 µg/kg, country: Vietnam⁵⁸⁸

AFLATOXIN G₁

incidence: 1/12, conc.: 0.41 µg/kg, country: Vietnam⁵⁸⁸

Fusarium* Toxins*ZEARALENONE**

incidence: 1/12, conc.: 10 µg/kg, country: Vietnam⁵⁸⁸

Castor cake see Cake (castor)

Cat feed see Feed (cat)

Cattle feed see Feed (cattle)

Cereal grain may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1*/29**, conc.: 27 µg/kg, country: UK³⁶, sa imported?, *maize gluten, **cereals and cereal products

incidence: 10/71* **, conc. range: < 5–300 µg/kg, country: South Africa⁷⁹, *ncac, **barley, oats, and wheat sa

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 57/177, conc. range: ≤2,389 µg/kg, country: Germany⁷³

incidence: 5/28, conc. range: ≤670 µg/kg, country: Germany⁷³

incidence: 38/608, conc. range: ≤206 µg/kg, country: Germany⁷³

incidence: 21/150, conc. range: ≤40 µg/kg, country: Germany⁷³

incidence: 2*/12, conc. range: 25 µg/kg, country: Poland⁸⁷, *25 µg/kg in 2 rye sa

incidence: 1*/37**, conc.: 25 µg/kg, country: Poland⁸⁷, *25 µg/kg in 1 maize sa

incidence: 21*/62, conc. range: 20–1,000 µg/kg, country: Poland⁸⁷, *20–130 µg/kg in 6 barley sa, 20–30 µg/kg in 7 rye sa, and 20–1,000 µg/kg in 8 wheat sa

incidence: 20*/296, conc. range: 20–470 µg/kg**, country: Poland⁸⁷, *20–470 µg/kg in 18 barley sa, 20 µg/kg in 1 rye sa, and 120 µg/kg in 1 wheat sa

incidence: 7/153*, conc. range: tr–6.4 µg/kg**, country: UK⁵¹², *ncac, **3 barley (≤6.4 µg/kg), 1 oats (5.8 µg/kg), 1 rye (tr), and 2 wheat (tr)

PATULIN

incidence: 8/71* **, conc. range: pr, country: South Africa⁷⁹, *ncac, **barley, oats, and wheat sa

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 110/245*, conc. range: ≤10,970 µg/kg, country: Germany⁴⁵⁸, *for food and feed

3-ACETYLDEOXYNIVALENOL

incidence: 17/245*, conc. range: ≤468 µg/kg, country: Germany⁴⁵⁸, *for food and feed

HT-2 TOXIN

incidence: 15/65* **, conc. range: ≤236 µg/kg, country: Germany⁴⁵⁸, *for food and feed, **suspected sa

NIVALENOL

incidence: 7/245*, conc. range: ≤256 µg/kg, country: Germany⁴⁵⁸, *for food and feed

DIACETOXYSCIRPENOL

incidence: 23/65* **, conc. range: ≤338 µg/kg, country: Germany⁴⁵⁸, *for food and feed, **suspected sa

T-2 TOXIN

incidence: 8/65* **, conc. range: ≤ 119 $\mu\text{g}/\text{kg}$, country: Germany⁴⁵⁸, *for food and feed, **suspected sa

TRICHOHECENES

incidence: 5/71*, conc. range: pr, country: South Africa⁷⁹, *ncac, **barley, oats, and wheat sa

ZEARALENONE

incidence: 12/245*, conc. range: ≤ 67 $\mu\text{g}/\text{kg}$, country: Germany⁴⁵⁸, *for food and feed

Cereals, mixture may contain the following mycotoxins:

Alternaria Toxins**ALTERNARIOL**

incidence: 1/5, conc.: 8 $\mu\text{g}/\text{kg}$, country: Germany²⁹⁴

ALTERNARIOL MONOMETHYL ETHER

incidence: 2/7, conc. range: 4–8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6 $\mu\text{g}/\text{kg}$, country: Germany²⁹⁴

Chick mash see Mash (chick)

Chick pea Feed chick pea may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 2/10, conc. range: tr–20 $\mu\text{g}/\text{kg}$, country: India¹⁸³

Fusarium Toxins**ZEARALENONE**

incidence: 2/10, conc. range: 20–40 $\mu\text{g}/\text{kg}$, \emptyset conc.: 30 $\mu\text{g}/\text{kg}$, country: India¹⁸³

Chicken feed see Feed (chicken)

Chicken grower feed see Feed (chicken grower)

Chicken pellets see Pellet (chicken)

Chicken starter feed see Feed (chicken starter)

Citrus pulp may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 1/4, conc.: 29 $\mu\text{g}/\text{kg}$, country: Netherlands¹⁰³, sa imported?!

Cocoa cake see Cake (cocoa)

Coconut Feed coconut may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 8/8, conc. range: < 5 $\mu\text{g}/\text{kg}$ (1 sa), 5–20 $\mu\text{g}/\text{kg}$ (4 sa), 21–50 $\mu\text{g}/\text{kg}$ (2 sa), 51–100 $\mu\text{g}/\text{kg}$ (1 sa), \emptyset conc.: 30 $\mu\text{g}/\text{kg}$, country: Germany²⁹⁸, sa imported

incidence: 18/18*, conc. range: < 50 $\mu\text{g}/\text{kg}$ (9 sa), 50–250 $\mu\text{g}/\text{kg}$ (9 sa), country: Sri Lanka⁵⁶⁸, *coconut-based animal feeds

Coconut cake see Cake (coconut)

Coconut meal see Meal (coconut)

Coconut, expeller see Expeller (coconut)

Commercial mix see Feed, commercial mix

Complete feed see Feed, complete ration

Complete ration see Ration, complete

Compound feed see Feed, compound

Concentrate(s) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2*/50 overall**, conc. range: 390–594 µg/kg, country: Nigeria²⁷, *pelleted concentrates (cattle feed), **different kinds of sa (moldy and apparently good)

incidence: 1*/50 overall**, conc.: 592 µg/kg, country: Nigeria²⁷, *compounded concentrate (sheep/goat feed), **different kinds of sa (moldy and apparently good)

incidence: 312/1,545, conc. range: 1–10 µg/kg (218 sa), >10–20 µg/kg (62 sa), >20–50 µg/kg (15 sa), > 50–100 µg/kg (10 sa), >100–500 µg/kg (5 sa), >500–2,000 µg/kg (2 sa), country: Cuba¹⁰⁶

incidence: 3/5*, conc.: 7–13 µg/kg, Ø conc.: 5.4 µg/kg, country: UK¹²⁹, sa from India, *mixed concentrate

incidence: 4/16*, conc. range: 10 µg/kg (2 sa), 20 µg/kg (1 sa), 200 µg/kg (1 sa), country: Poland¹⁷⁰, *protein concentrates

incidence: 12/45* **, conc. range: 31–60 µg/kg (7 sa), 61–100 µg/kg (3 sa), 101–500 µg/kg (2 sa), country: UK⁵⁴⁵, *home mixed, **suspect feedstuffs

incidence: 19/33*, conc. range: tr–30 µg/kg (16 sa), 31–60 µg/kg (3 sa), country: UK⁵⁴⁵, *home mixed

incidence: 2/36, Ø conc.: 40 µg/kg, country: Poland⁵⁷⁹

AFLATOXIN B₂

incidence: 1*/50 overall**, conc.: 212 µg/kg, country: Nigeria²⁷, *pelleted

concentrate (cattle feed), **different kinds of sa (moldy and apparently good)

AFLATOXIN G₁

incidence: 1/1*, conc.: 3 µg/kg, country: UK¹²⁹, sa from India, *mixed concentrate

AFLATOXIN (G₁ + G₂)

incidence: 1*/50 overall**, conc.: 594 µg/kg, country: Nigeria²⁷, *compounded concentrate (sheep/goat feed), **different kinds of sa (moldy and apparently good)

AFLATOXIN

incidence: 1*/1**, conc.: ≤30 µg/kg (1 sa), country: India⁵¹⁵, *sa contained aflatoxin, **poultry concentrate

incidence: 5*/5**, conc. range: ≤30 µg/kg (4 sa), >100 µg/kg (1 sa), country: India⁵¹⁵, *all sa contained aflatoxin, **poultry concentrate

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 24/31, conc. range: <100 µg/kg (19 sa), 100–500 µg/kg (4 sa), >500 µg/kg (1 sa), country: Poland⁴⁹⁹

AFLATOXINS

incidence: 19/31, conc. range: 5–100 µg/kg (12 sa), 101–200 µg/kg (2 sa), 201–300 µg/kg (2 sa), 301–500 µg/kg (2 sa), 500 µg/kg (1 sa), country: Poland⁸⁴

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5/36, Ø conc.: 198 µg/kg, country: Poland⁵⁷⁹

Fusarium Toxins

ZEARALENONE

incidence: 1/5*, conc.: 843 µg/kg, country: UK¹²⁹, sa from India, *mixed concentrate

incidence: 1/36, conc.: 1,600 µg/kg, country: Poland⁵⁷⁹

Copra may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 2/5, conc. range:
<20 µg/kg (2 sa), country: UK²⁶⁷, sa
imported

Copra meal see Meal (copra)

Corn see Maize

Corn/oats mix see Maize/oats mix

Corn cobs may contain the following
mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/5*, conc. range: 26,700–
208,300 µg/kg, Ø conc.: 123.933 µg/kg,
country: Italy/Poland³⁴⁸, sa from Poland,
*ncac

3-ACETYLDEOXYNIVALENOL

incidence: 2/5*, conc. range:
900–5,900 µg/kg, Ø conc.: 3,400 µg/kg,
country: Italy/Poland³⁴⁸, sa from Poland,
*ncac

15-ACETYLDEOXYNIVALENOL

incidence: 2/5*, conc. range:
5,800–8,800 µg/kg, Ø conc.: 7,300 µg/kg,
country: Italy/Poland³⁴⁸, sa from Poland,
*ncac

FUSARENON X

incidence: 2/5*, conc. range:
3,600–20,000 µg/kg, Ø conc.: 11,800 µg/kg,
country: Italy/Poland³⁴⁸, sa from Poland,
*ncac

NIVALENOL

incidence: 2/5*, conc. range:
54,300–56,200 µg/kg, Ø conc.: 55,250 µg/
kg, country: Italy/Poland³⁴⁸, sa from
Poland, *ncac

ZEARALENONE

incidence: 5/5*, conc. range: 1,600–
350,000 µg/kg, Ø conc.: 76,200 µg/kg,
country: Italy/Poland³⁴⁸, sa from Poland,
*ncac

Corn cob mix may contain the
following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 54/54, conc. range:
100–< 500 µg/kg (17 sa), 500–< 1,000 µg/
kg (14 sa), 1,000–< 2,000 µg/kg (18 sa),
2,000–< 5,000 µg/kg (3 sa), ≥5,000 µg/kg
(2 sa), country: Austria²⁶

incidence: 44/44, conc. range:
100–< 500 µg/kg (28 sa), 500–< 1,000 µg/
kg (7 sa), 1,000–< 2,000 µg/kg (9 sa),
country: Austria²⁶

incidence: 6/6, conc. range: 203–4,300 µg/
kg, Ø conc.: 1,626.1 µg/kg, country:
Austria¹⁸²

incidence: 6/6, conc. range: 120–2,330 µg/
kg, Ø conc.: 634.1 µg/kg, country: Austria¹⁸²

ZEARALENONE

incidence: 41/41, conc. range: <5 µg/kg (1
sa), 5–< 20 µg/kg (3 sa), 20–< 50 µg/kg (5
sa), 50–< 100 µg/kg (11 sa), 100–< 200 µg/
kg (11 sa), ≥200 µg/kg (10 sa), country:
Austria²⁶

incidence: 46/46, conc. range: <5 µg/kg (7
sa), 5–< 20 µg/kg (16 sa), 20–< 50 µg/kg
(5 sa), 50–< 100 µg/kg (10 sa),
100–< 200 µg/kg (3 sa), ≥200 µg/kg (5 sa),
country: Austria²⁶

incidence: 6/6, conc. range: 31–3,110 µg/kg,
Ø conc.: 503.5 µg/kg, country: Austria¹⁸²

incidence: 6/6, conc. range: 8–250 µg/kg,
Ø conc.: 131.1 µ /kg, country: Austria¹⁸²

incidence: 1/1, conc.: >600 µg/kg, country:
Belgium⁵⁶⁷

Corn cob mix silage see Silage (corn corb mix)

Corn flakes see Maize flakes

Corn powder see Maize powder

Corn silage see Silage

Cottonseed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 4/5, Ø conc.: 15 µg/kg, country: Egypt¹⁶

incidence: 15/21, conc. range: 5–19 µg/kg (14 sa), 20 µg/kg (1 sa), country: UK⁹⁴, sa imported?!

incidence: 15/15*, conc. range: 7–3,258 µg/kg, Ø conc.: 1,117.9 µg/kg, country: USA¹³⁶, *dehulled cottonseed

incidence: 178/935, conc. range: >tr (60 sa), >10 µg/kg (41 sa), >30 µg/kg (39 sa), >70 µg/kg (27 sa), >150 µg/kg (3 sa), >500 µg/kg (7 sa), >1,500 µg/kg (1 sa), country: USA¹⁶⁴

incidence: 222/1,307, conc. range: >tr (106 sa), >10 µg/kg (59 sa), >30 µg/kg (35 sa), >70 µg/kg (17 sa), >150 µg/kg (5 sa), country: USA¹⁶⁴

incidence: 267/1,065, conc. range: >tr (86 sa), >10 µg/kg (64 sa), >30 µg/kg (45 sa), >70 µg/kg (35 sa), >150 µg/kg (25 sa), >500 µg/kg (12 sa), country: USA¹⁶⁴

incidence: 75/90, conc. range: 7–2,000 µg/kg, Ø conc.: 450 µg/kg, country: USA¹⁶⁴

incidence: 15/80, conc. range: tr–1,058 µg/kg, Ø conc.: 176.9 µg/kg, country: USA¹⁶⁴

incidence: 11/51, conc. range: 7–381 µg/kg, Ø conc.: 78 µg/kg, country: USA¹⁶⁴

incidence: 84/264*, conc. range: 1–50 µg/kg (50 sa), 51–500 µg/kg (24 sa), 501–1,000 µg/kg (2 sa), >1,000 µg/kg (8 sa), country: India²¹⁰, *from dry areas

incidence: 97/124*, conc. range: 1–50 µg/kg (26 sa), 51–500 µg/kg (34 sa), 501–1,000 µg/kg (16 sa), >1,000 µg/kg (21 sa), country: India²¹⁰, *from humid areas

incidence: 1/2, conc.: 210 µg/kg, country: USA²⁴⁶

incidence: 1/3, conc.: 404 µg/kg, country: USA²⁴⁶

incidence: 1/9, conc.: 82 µg/kg, country: USA²⁴⁶

incidence: 1/5, conc.: 910 µg/kg, country: USA²⁴⁶

incidence: 5/5, conc. range: <20 µg/kg (3 sa), 51–100 µg/kg (1 sa), 101–1,000 µg/kg (1 sa), country: UK²⁶⁷, sa imported

incidence: 7?/7?, conc. range: 5–560 µg/kg, Ø conc.: 163.1 µg/kg, country: USA²⁸⁷

incidence: 12/12, conc. range: 5–1,500 µg/kg, Ø conc.: 197.9 µg/kg, country: USA³⁰⁴

incidence: 6/7, conc. range: 10–380 µg/kg, Ø conc.: 110 µg/kg, country: USA³⁰⁴

incidence: 62/106*, conc. range: 1–20 µg/kg (36 sa), 21–100 µg/kg (14 sa), 101–300 µg/kg (5 sa), >300 µg/kg (7 sa), country: USA³⁷⁰, *73 cottonseed and 33 cottonseed meal sa

AFLATOXIN B₂

incidence: 1/5, conc.: 810 µg/kg, country: USA²⁴⁶

incidence: 3/7, conc. range: 5–90 µg/kg, Ø conc.: 53.3 µg/kg, country: USA³⁰⁴

AFLATOXINS (B₁ + B₂)

incidence: 4/24*, conc.: 100–200 µg/kg,
country: Egypt³⁶¹, *and cottonseed
products

AFLATOXIN G₁

incidence: 1/2, conc.: 130 µg/kg, country:
USA²⁴⁶

incidence: 1/3, conc.: 207 µg/kg, country:
USA²⁴⁶

AFLATOXIN

incidence: 11/20, conc. range: ≤111 µg/kg,
country: USA²⁸⁰

AFLATOXINS (TOTAL)

incidence: 15/21, conc. range: 5–19 µg/kg
(9 sa), 20–≤25 µg/kg (6 sa), country: UK⁹⁴,
sa imported?!

AFLATOXINS

incidence: 4/37, conc. range: >20 µg/kg (3
sa), >300 µg/kg (1 sa), country: USA¹⁹⁵

incidence: 17/45, conc. range: >20 µg/kg
(12 sa), >300 µg/kg (5 sa), country: USA¹⁹⁵

incidence: 1/1, conc.: 11 µg/kg, country:
USA²⁸⁰, sa imported

incidence: 9/73, conc. range: <2–156 µg/
kg, Ø conc.: 65 µg/kg, country: USA³²⁹

incidence: 22/218, conc. range: <2–431 µg/
kg, Ø conc.: 72 µg/kg, country: USA³²⁹

incidence: 6/47, conc. range: <2–46 µg/kg,
Ø conc.: 26 µg/kg, country: USA³²⁹

incidence: 7/7, conc. range: 2–7 µg/kg,
Ø conc.: 3.4 µg/kg, country: Egypt³⁵⁷

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 2/7, conc. range: 0.14–12.24 µg/
kg, country: Mexico/Spain²⁰, sa from Spain

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 2/4, conc. range: 830–1,100 µg/
kg, Ø conc.: 965 µg/kg, country: Egypt¹⁶

ZEARALENONE

incidence: 2/4, conc. range: 20–46 µg/kg,
Ø conc.: 33 µg/kg, country: Egypt¹⁶

incidence: 1/7, conc.: 0.92 mg/kg, country:
Mexico/Spain²⁰, sa from Spain

incidence: 3/15*, conc. range: 70–150 µg/
kg (3 sa), country: USA³⁷⁰, *10 cottonseed
and 5 cottonseed meal sa

Cottonseed cake see Cake
(cottonseed)

Cottonseed extract may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 3/7, conc. range: 6–19 µg/kg,
Ø conc.: 8.67 µg/kg, country: India²⁴⁷

AFLATOXIN B₂

incidence: 1/7, conc.: 5 µg/kg, country:
India²⁴⁷

Cottonseed fines may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXINS**

incidence: 9/9, conc. range:
300–9,620 µg/kg, Ø conc.: 4,023.7 µg/kg,
country: USA³²⁴

Cottonseed hulls may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 11/14, conc. range:
3–20 µg/kg, Ø conc.: 7.1 µg/kg, country:
USA³⁰⁴

Cottonseed meal see Meal
(cottonseed)

Cottonseed meal (ammoniated) see Meal (cottonseed)

Cottonseed meal (decorticated) see Meal (cottonseed)

Cottonseed meats may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/4, conc. range:
26.8–190.5 µg/kg, Ø conc.: 69.7 µg/kg,
country: USA²⁷⁴

incidence: 14/14, conc. range:
14–8,640 µg/kg, Ø conc.: 1,306 µg/kg,
country: USA³⁰⁴

AFLATOXIN B₂
incidence: 4/4, conc. range:
4.7–29.7 µg/kg, Ø conc.: 11.2 µg/kg,
country: USA²⁷⁴

incidence: 13/14, conc. range:
20–1,250 µg/kg, Ø conc.: 321.2 µg/kg,
country: USA³⁰⁴

AFLATOXINS
incidence: 8/9, conc. range: 3–2,560 µg/kg,
Ø conc.: 318.2 µg/kg, country: USA³²⁴

Cottonseed products may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 40/120, conc. range:
5–120 µg/kg, country: Denmark¹⁶⁷, sa
imported

Cow feed see Feed (cow)

Cowpea Feed cowpea may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 4/7, conc. range: 120–610 µg/
kg, Ø conc.: 255 µg/kg, country: South
Africa⁵⁰⁵

Crumbs may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/2, conc.: 100 µg/kg, country:
Australia¹⁸¹

Fusarium Toxins

ZEARALENONE
incidence: 2/2*, conc. range: 250–
750 µg/kg, Ø conc.: 500 µg/kg, country:
Papua, New Guinea/Japan⁷², sa most
probably from Australia, *wheat bread
crumbs

Cycad meal see Meal (cycad)

Dairy cake see Cake (dairy)

Dairy feed see Feed (dairy)

Diet may contain the following mycotoxins:

Aspergillus Toxins

STERIGMATOCYSTIN
incidence: 2/17, conc. range: nc, country:
Hungary²⁰⁹

Claviceps Toxins

ERGOT ALKALOIDS
incidence: 2/2, conc.: 40,000 µg/kg*, Ø
conc.: 40,000 µg/kg, country: Australia³³¹
* > 90% dihydroergosine

Diet, mixed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 32/111, conc. range: 1–20 µg/kg (20 sa), 21–100 µg/kg (8 sa), 101–300 µg/kg (4 sa), country: USA³⁷⁰

Fusarium Toxins

ZEARALENONE
incidence: 2/10, conc. range: 70–150 µg/kg, country: USA³⁷⁰

Dog food/feed see Feed (dog)

Dog sausage see Feed (dog)

Duck feed see Feed (dug)

Durum wheat see Wheat

Egg-laying hen feed see Feed (hen)

Egg production mixed feed see Feed, mixed

Ensiled by-products see Silage

Expeller (coconut) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 3/4, conc. range: 4–6 µg/kg, Ø conc.: 5 µg/kg, country: Netherlands¹⁰³, sa imported?!

Fusarium Toxins

DEOXYNIVALENOL
incidence: 1/4, conc.: 620 µg/kg, country: Netherlands¹⁰³, sa imported?!

Expeller (peanut) may contain the following mycotoxins.

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/6, conc. range: 138–278 µg/kg, Ø conc.: 173.5 µg/kg, country: Denmark³¹⁶, sa from Nigeria

incidence: 4/5, conc. range: 30–1,385 µg/kg, Ø conc.: 451 µg/kg, country: Denmark³¹⁶, sa from Argentina

incidence: 3/3, conc. range: 278–694 µg/kg, Ø conc.: 416.7 µg/kg, country: Denmark³¹⁶, sa from Sudan

incidence: 6/7, conc. range: 111–694 µg/kg, Ø conc.: 398.2 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 1/2, conc.: 138 µg/kg, country: Denmark³¹⁶, sa from Indonesia

incidence: 1/1, conc.: 278 µg/kg, country: Denmark³¹⁶, sa from Kenya

incidence: 1/1, conc.: 278 µg/kg, country: Denmark³¹⁶, sa from Uganda

incidence: 2/2, conc. range: 56–833 µg/kg, Ø conc.: 444.5 µg/kg, country: Denmark³¹⁶, sa from Brazil

incidence: 1/1, conc.: 278 µg/kg, country: Denmark³¹⁶, sa from Ghana

AFLATOXIN B₂
incidence: 3/6, conc. range: 56–138 µg/kg, Ø conc.: 83.3 µg/kg, country: Denmark³¹⁶, sa from Nigeria

incidence: 2/5, conc. range: 111–694 µg/kg, Ø conc.: 402.5 µg/kg, country: Denmark³¹⁶, sa from Argentina

incidence: 3/3, conc. range: 56–694 µg/kg, Ø conc.: 287 µg/kg, country: Denmark³¹⁶, sa from Sudan

incidence: 4/7, conc. range: 56–556 µg/kg, Ø conc.: 237.5 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 1/2, conc.: 138 µg/kg, country: Denmark³¹⁶, sa from Indonesia

incidence: 1/1, conc.: 56 µg/kg, country: Denmark³¹⁶, sa from Kenya

incidence: 1/1, conc.: 139 µg/kg, country: Denmark³¹⁶, sa from Uganda

incidence: 1/2, conc.: 556 µg/kg, country: Denmark³¹⁶, sa from Brazil

incidence: 1/1, conc.: 56 µg/kg, country: Denmark³¹⁶, sa from Ghana

AFLATOXIN G₁

incidence: 3/6, conc. range: 56 µg/kg, Ø conc.: 56 µg/kg, country: Denmark³¹⁶, sa from Nigeria

incidence: 2/5, conc. range: 56–694 µg/kg, Ø conc.: 375 µg/kg, country: Denmark³¹⁶, sa from Argentina

incidence: 5/7, conc. range: 40–556 µg/kg, Ø conc.: 212.6 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 1/1, conc.: 278 µg/kg, country: Denmark³¹⁶, sa from Kenya

incidence: 1/1, conc.: 278 µg/kg, country: Denmark³¹⁶, sa from Uganda

incidence: 2/2, conc. range: 28–56 µg/kg, Ø conc.: 42 µg/kg, country: Denmark³¹⁶, sa from Brazil

incidence: 1/1, conc.: 56 µg/kg, country: Denmark³¹⁶, sa from Ghana

AFLATOXIN G₂

incidence: 1/6, conc.: 27 µg/kg, country: Denmark³¹⁶, sa from Nigeria

incidence: 1/5, conc.: 138 µg/kg, country: Denmark³¹⁶, sa from Argentina

incidence: 2/7, conc. range: 111–556 µg/kg, Ø conc.: 333.5 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 1/1, conc.: 139 µg/kg, country: Denmark³¹⁶, sa from Kenya

incidence: 1/1, conc.: 56 µg/kg, country: Denmark³¹⁶, sa from Uganda

Farro see Wheat

Feed may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 3/82*, conc. range: 17–25 µg/kg, Ø conc.: 20.3 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark and Hungary, *sow feed, wheat, and maize sa

ALTERNARIOL MONOMETHYL ETHER

incidence: 1/82*, conc.: 19 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark and Hungary, *sow feed, wheat, and maize sa

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1 or 2/8, conc. range: pr, country: Tunisia/France³¹, sa from Tunisia

incidence: 1/1*, conc.: 450 µg/kg, country: Indonesia³⁴, *quail feed

incidence: 12/42, conc. range: <5–40 µg/kg, country: South Africa⁷⁹

incidence: 34/302, conc. range: 1–80 µg/kg, Ø conc.: 27.93 µg/kg, country: Turkey⁸⁰

incidence: 22/749, conc. range: ≤200 µg/kg, country: USA¹⁶⁵

incidence: 94/278*, conc. range: 60–15,000 µg/kg, country: USA¹⁶⁶, *feed with 50–60% maize

incidence: 107/261, conc. range: <0.1–25 µg/kg, country: Turkey¹⁹³

incidence: 61/61, conc. range: <1–60 µg/kg, country: Netherlands²⁸³

incidence: 2/120, conc. range: 5–10 µg/kg,
Ø conc.: 7.5 µg/kg, country: Germany³⁴³

incidence: 45/105, conc. range: 7–300 µg/
kg, country: Germany³⁷⁶

incidence: 41/226, conc. range: 0.12–
1,000 µg/kg, country: Spain³⁷⁷

incidence: 23/25, Ø conc.*: 7.56 µg/kg,
country: Thailand⁴⁴⁹, *of pos sa only?

incidence: 14/18, conc. range: 5.5–90.0 µg/
kg, Ø conc.: 27.7 µg/kg, country: India⁴⁷⁶

incidence: 2/12, conc. range: pr, country:
Kenya⁵³¹

incidence: 18/18*, conc. range: <50 µg/kg
(9 sa), 50–250 µg/kg (9 sa), country:
Sri Lanka⁵⁶⁸, *coconut based animal feeds

incidence: 9/20*, conc. range: 1–30 µg/kg
(1 sa), 31–100 µg/kg (2 sa), 101–200 µg/kg
(2 sa), 301–400 µg/kg (2 sa), 501–600 µg/
kg (1 sa), 701–800 µg/kg (1 sa), country:
India⁵⁸⁰, *ready to use animal feed

AFLATOXIN B₂

incidence: 5/8, conc. range: pr, country:
Tunisia/France³¹, sa from Tunisia

incidence: 1/1*, conc.: 15 µg/kg, country:
Indonesia³⁴, *quail feed

incidence: 1/12, conc.: pr, country:
Kenya⁵³¹

AFLATOXIN G₁

incidence: 6/302, conc. range: 10–150 µg/
kg, Ø conc.: 15.57 µg/kg, country: Turkey⁸⁰

AFLATOXIN G₂

incidence: 1/302, conc.: 1–150 µg/kg?,
Ø conc.: 33 µg/kg?, country: Turkey⁸⁰

incidence: 107?/261, conc. range:
<0.5–1 µg/kg, country: Turkey¹⁹³

incidence: 2/19*, conc. range: 13–17 µg/
kg, Ø conc.: 15 µg/kg, country: Spain/
USA⁵¹¹, *5 sa contained tr of other
aflatoxins and ochratoxin A

AFLATOXIN

incidence: 95/172, conc. range: 1–350 µg/
kg, country: UK³⁷

incidence: 45/105, conc. range: 1–300 µg/
kg, country: UK³⁷, sa from Germany

incidence: 18/71, conc. range: 2–20 µg/kg*
(7 sa), >20 µg/kg* (11 sa), country:
Uruguay/Italy⁹¹, sa from Uruguay, *AFB₁,
AFB₂, AFG₁, and AFG₂

incidence: 1/1*, conc.: <30 µg/kg (1 sa),
country: India³⁸⁰, *bread crumbs

incidence: ?/142*, conc. range: ≤2,780 µg/
kg, country: USA⁴⁰⁶, *bird seed

incidence: 22/114, Ø conc.: 6.0 µg/kg*,
country: USA⁵⁴⁴, *of pos sa only?

incidence: 52/222, Ø conc.: 8.8 µg/kg*,
country: USA⁵⁴⁴, *of pos sa only?

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 4/13, conc. range:
4.2–10.3 µg/kg, Ø conc.: 6.9 µg/kg,
country: Croatia⁵⁷⁵

AFLATOXINS (TOTAL)

incidence: 2/120, conc. range: 14–24 µg/
kg, Ø conc.: 19 µg/kg, country: Germany³⁴³

AFLATOXINS

incidence: 11/12, conc. range: ≤69.0 µg/kg,
country: Vietnam/France¹⁵⁰, sa from
Vietnam

incidence: 4/118, conc. range: 1.4–4 µg/kg,
country: Germany³⁵³

incidence: 14/104, conc. range:
tr–1,920 µg/kg, country:
Czechoslovakia³⁷⁴, sa partly imported

incidence: 13/427, conc. range: 2–39 µg/
kg, country: Slovenia⁴²⁴

incidence: 50/342, conc. range:
5–1,906 µg/kg, country: Brazil⁴²⁵

incidence: 2/3, conc. range: ~186.7–
273.3 µg/l, country: Spain⁵⁴⁶

Aspergillus* and *Penicillium* Toxins*CYCLOPIAZONIC ACID**

incidence: 1/1*, conc.: 6,000 µg/kg,
country: Indonesia³⁴, *quail feed

OCHRATOXIN A

incidence: 3/8, conc. range: ≤360 µg/kg,
country: Tunisia/France³¹, sa from
Tunisia

incidence: 1/1*, conc.: 500 µg/kg, country:
Indonesia³⁴, *quail feed

incidence: 55/302, conc. range: 4–150 µg/
kg, Ø conc.: 48.87 µg/kg, country:
Turkey⁸⁰

incidence: 1/51* overall**, conc.: 5,900 µg/
kg, country: Canada¹³³, *wheat, oats, and
barley, **different kinds of sa

incidence: 1/5, conc.: 25 µg/kg, country:
Germany¹⁸⁶, sa of unknown origin

incidence: 54/100, conc. range: ≤1,300 µg/
kg, country: Norway²⁹¹

incidence: 68/384, conc. range:
0.1–≥20 µg/kg, country: Germany³³²

incidence: 42/170, conc. range:
0.1–145.0 µg/kg, country: Germany³⁵³

incidence: 18/76, conc. range: tr–400.0 µg/
kg, country: Yugoslavia/USA³⁷³, sa from
Yugoslavia

incidence: 18/77, conc. range:
12.0–100.0 µg/kg, country: Yugoslavia/
USA³⁷³, sa from Yugoslavia

incidence: 25/82, conc. range:
16.0–200.0 µg/kg, country: Yugoslavia/
USA³⁷³, sa from Yugoslavia

incidence: 24/326, conc. range: 20–580 µg/
kg, country: Slovenia⁴²⁴

incidence: 9/342, conc. range: 14–745 µg/
kg, country: Brazil⁴²⁵

incidence: 3/10, conc. range:
10.48–12.35 µg/kg, Ø conc.: 11.3 µg/kg,
country: Thailand⁴⁴⁹

incidence: 6/25, conc. range: 0.5–7.0 µg/
kg, Ø conc.: 3.2 µg/kg, country:
Germany⁵⁰³

incidence: 15/40, conc. range: ≤13.5 µg/kg,
country: Poland⁵⁰⁴

incidence: 2/82*, conc. range: 22–33 µg/
kg, Ø conc.: 27.5 µg/kg, country:
Belgium⁵²⁹, sa from Czech Republic,
Denmark, and Hungary, *sow feed, wheat,
and maize sa

incidence: ?/167*, conc. range: ≤109.9 µg/
kg, country: USA⁵³⁷, *game bird feeders

incidence: 14/92, conc. range: 2–438 µg/
kg, country: Norway⁵³⁸

incidence: 22/22*, conc. range: 0.2–
3.66 µg/kg, country: Italy⁵⁵⁵,
*conventional

incidence: 8/8*, conc. range: 0.43–38.4 µg/
kg, country: Italy⁵⁵⁵, *organic

incidence: 12/12*, conc. range: 0.09–
4.08 µg/kg, Ø conc.: 1.76 µg/kg, country:
Italy⁵⁷¹, *conventional feed for laying hens
and broilers

incidence: 8/8*, conc. range: 0.04–6.5 µg/
kg, Ø conc.: 2.66 µg/kg, country: Italy⁵⁷¹,
*organic feed for laying hens and
broilers

incidence: 2/13, conc. range: 5.4–12.9 µg/
kg, Ø conc.: 9.2 µg/kg, country:
Croatia⁵⁷⁵

incidence: 25/25*, Ø conc.: 188.8 µg/kg,
country: Bulgaria/South Africa⁵⁸², sa from
Bulgaria, *feed sa from pig/chicks farms

incidence: 25/25*, Ø conc.: 376.4 µg/kg,
country: Bulgaria/South Africa⁵⁸², sa from
Bulgaria, *feed sa from pig/chicks farms

incidence: 13/36*, conc. range: 4–100 µg/
kg, country: Finland⁵⁹², *barley, oats, feed
mixture, and ground grain sa

PATULIN

incidence: 3/42, conc. range: pr, country:
South Africa⁷⁹

PENICILLIC ACID

incidence: 22/25*, \emptyset conc.: 838.6 $\mu\text{g}/\text{kg}^{**}$,
country: Bulgaria/South Africa⁵⁸², sa from
Bulgaria, *feed sa from pig/chicks farms,
**of pos sa only?

incidence: 23/25*, \emptyset conc.: 904.9 $\mu\text{g}/\text{kg}^{**}$,
country: Bulgaria/South Africa⁵⁸², sa from
Bulgaria, *feed sa from pig/chick farms,
**of pos sa only?

Claviceps* Toxins*ERGOT ALKALOIDS**

incidence: 15/35, conc. range: 150–450 $\mu\text{g}/$
kg (6 sa), 450–750 $\mu\text{g}/\text{kg}$ (6 sa), >750 $\mu\text{g}/$
kg (3 sa), country: Uruguay/Italy⁹¹, sa
from Uruguay

incidence: 2/2, conc. range: 8,000–
18,000 $\mu\text{g}/\text{kg}^*$, country: Australia³³¹,
* >90% dihydroergosine

Fusarium* Toxins*BEAUVERICIN**

incidence: 3/3, conc. range: 100–3,000 $\mu\text{g}/$
kg, \emptyset conc.: 1,233 $\mu\text{g}/\text{kg}$, country: USA/
Italy¹¹³, sa from USA

DEOXYNIVALENOL

incidence: 1/1*, conc.: 550 $\mu\text{g}/\text{kg}$, country:
Papua, New Guinea/Japan⁷², sa most
probably from Australia, *mill run feed
from wheat

incidence: 17/58, conc. range: 8–500 $\mu\text{g}/\text{kg}$
(6 sa), 500–1,000 $\mu\text{g}/\text{kg}$ (4 sa), >1,000 $\mu\text{g}/$
kg (7 sa), country: Uruguay/Italy⁹¹, sa
from Uruguay

incidence: 4/4, conc. range: 220–590 $\mu\text{g}/$
kg, \emptyset conc.: 355 $\mu\text{g}/\text{kg}$, country: Canada¹²⁰,
sa probably from Canada

incidence: 7/9*, conc. range: 40–1,800 $\mu\text{g}/$
kg, country: USA¹⁷⁴, *different kinds of
feed sa

incidence: 24/55, conc. range: <100 $\mu\text{g}/\text{kg}$
(6 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (14 sa), >1,000 $\mu\text{g}/$
kg (4 sa), country: Austria¹⁹⁶

incidence: 193/319, conc. range: <100 $\mu\text{g}/$
kg (35 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (104 sa),
>1,000 $\mu\text{g}/\text{kg}$ (54 sa), country: Austria¹⁹⁶

incidence: 124/297, conc. range: <100 $\mu\text{g}/$
kg (17 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (76 sa),
>1,000 $\mu\text{g}/\text{kg}$ (31 sa), country: Austria¹⁹⁶

incidence: 112/244, conc. range: <100 $\mu\text{g}/$
kg (11 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (78 sa),
>1,000 $\mu\text{g}/\text{kg}$ (23 sa), country: Austria¹⁹⁶

incidence: 269/409, conc. range: <100 $\mu\text{g}/$
kg (24 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (164 sa),
1,000 $\mu\text{g}/\text{kg}$ (81 sa), country: Austria¹⁹⁶

incidence: 174/389, conc. range: <100 $\mu\text{g}/$
kg (25 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (134 sa),
>1,000 $\mu\text{g}/\text{kg}$ (15 sa), country: Austria¹⁹⁶

incidence: 157/200, conc. range: <100 $\mu\text{g}/$
kg (26 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (113 sa),
>1,000 $\mu\text{g}/\text{kg}$ (18 sa), country: Austria¹⁹⁶

incidence: 77/296, conc. range: 1.8–
10,000.0 $\mu\text{g}/\text{kg}$, country: Germany³⁵³

incidence: ?/92*, conc. range: \leq 3,490 $\mu\text{g}/$
kg, country: Germany³⁶⁴, *feed/products

incidence: 13/15, \emptyset conc.*: 33.77 $\mu\text{g}/\text{kg}$,
country: Thailand⁴⁴⁹, *of pos sa only?

incidence: 3/8*, conc. range: \leq 1,811 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 1,019 $\mu\text{g}/\text{kg}$, country:
Netherlands⁴⁵⁵, *feed commodities

incidence: 1,053/1,913, conc. range: <100 $\mu\text{g}/$
kg (144 sa), 100–1,000 $\mu\text{g}/\text{kg}$ (683 sa),
>1,000 $\mu\text{g}/\text{kg}$ (226 sa), country: Austria⁵⁰⁹

incidence: 52/82*, conc. range:
74–9,528 $\mu\text{g}/\text{kg}$, \emptyset conc.: 948.6 $\mu\text{g}/\text{kg}$,
country: Belgium⁵²⁹, sa from Czech
Republic, Denmark and Hungary, *sow
feed, wheat, and maize sa

incidence: 2/6*, conc. range: 50–630 $\mu\text{g}/$
kg, \emptyset conc.: 340 $\mu\text{g}/\text{kg}$, country: Croatia⁵⁸¹,
*mainly poultry feed

incidence: 15/21*, conc. range: 100–
1,050 $\mu\text{g}/\text{kg}$, \emptyset conc.: 420 $\mu\text{g}/\text{kg}$, country:
Croatia⁵⁸¹, *mainly poultry feed

incidence: 15/25*, \emptyset conc.: 72.7 $\mu\text{g}/\text{kg}^{**}$,
country: Bulgaria/South Africa⁵⁸², sa from
Bulgaria, *feed sa from pig/chick farms,
**of pos sa only?

incidence: 25/25*, \emptyset conc.: 51.4 $\mu\text{g}/\text{kg}^{**}$,
country: Bulgaria/South Africa⁵⁸², sa from
Bulgaria, *feed sa from pig/chick farms,
**of pos sa only?

3-ACETYLDEOXYNIVALENOL

incidence: 35/82*, conc. range: 6.0–339 $\mu\text{g}/$
kg, \emptyset conc.: 35.8 $\mu\text{g}/\text{kg}$, country: Belgium⁵²⁹,
sa from Czech Republic, Denmark, and
Hungary, *sow feed, wheat, and maize sa

15-ACETYLDEOXYNIVALENOL

incidence: 31/82*, conc. range:
9.9–1,047 $\mu\text{g}/\text{kg}$, \emptyset conc.: 118.3 $\mu\text{g}/\text{kg}$,
country: Belgium⁵²⁹, sa from Czech
Republic, Denmark, and Hungary, *sow
feed, wheat, and maize sa

DEOXYNIVALENOL AND METABOLITES

incidence: 345/505, conc. range:
20–8,510 $\mu\text{g}/\text{kg}$, country: Slovenia⁴²⁴

FUMONISIN B₁

incidence: 1/1*, conc.: 4,000 $\mu\text{g}/\text{kg}$,
country: USA⁵⁸, *associated with animal
health problems (ELEM)

incidence: 13/13*, conc. range:
1,300–16,800 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6,246.2 $\mu\text{g}/$
kg, country: USA¹⁰¹, *associated with
confirmed cases of ELEM

incidence: 3/3, conc. range: 300–9,500 $\mu\text{g}/$
kg, \emptyset conc.: 5,433 $\mu\text{g}/\text{kg}$, country: USA/
Italy¹¹³, sa from USA

incidence: ?/165*, conc. range: \leq 8,550 $\mu\text{g}/$
kg, \emptyset conc.: 570 $\mu\text{g}/\text{kg}^{**}$, country: South
Africa¹⁴⁷, *corn feed, **mean of all sa

incidence: 18/18*, conc. range: \leq 2,200 $\mu\text{g}/$
kg, \emptyset conc.: 536 $\mu\text{g}/\text{kg}$, country: Spain¹⁵⁹,
*maize-based

incidence: 1/1*, conc.: 756 $\mu\text{g}/\text{kg}$, country:
USA¹⁶¹, *mixture of alfalfa, corn, and
sorghum

incidence: 7/50*, conc. range:
278–637.2 $\mu\text{g}/\text{kg}$, \emptyset conc.: 366.4 $\mu\text{g}/\text{kg}$,
country: Germany²²⁵, *maize-based

incidence: 11/13*, conc. range:
89.1–2,105 $\mu\text{g}/\text{kg}$, \emptyset conc.: 585 $\mu\text{g}/\text{kg}$,
country: Spain³⁴⁷, *maize-based

incidence: 13/15*, \emptyset conc.: 438.6 $\mu\text{g}/\text{kg}$,
country: Tunisia⁴⁷⁴, *maize-based
products for ruminants and poultry

incidence: 36/82*, conc. range:
36–5,114 $\mu\text{g}/\text{kg}$, \emptyset conc.: 913.6 $\mu\text{g}/\text{kg}$,
country: Belgium⁵²⁹, sa from Czech
Republic, Denmark, and Hungary, *sow
feed, wheat, and maize sa

incidence: 2/7*, conc. range: 105–124 $\mu\text{g}/$
kg, \emptyset conc.: 115 $\mu\text{g}/\text{kg}$, country:
Colombia⁵⁴⁸, *maize gluten meal, complete
feed, and maize germ meal sa

incidence: 24/25*, \emptyset conc.: 5,564.1 $\mu\text{g}/$
kg**, country: Bulgaria/South Africa⁵⁸², sa
from Bulgaria, *feed sa from pig/chick
farms, **of pos sa only?

incidence: 23/25*, \emptyset conc.: 3,254.5 $\mu\text{g}/$
kg**, country: Bulgaria/South Africa⁵⁸², sa
from Bulgaria, *feed sa from pig/chick
farms, **of pos sa only?

incidence: 4/5*, conc. range: 550–2,250 $\mu\text{g}/$
kg, \emptyset conc.: 1,402.5 $\mu\text{g}/\text{kg}$, country:
Taiwan⁶¹², *maize-based

FUMONISIN B₂

incidence: 13/13*, conc. range: 100–
6,500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,253.8 $\mu\text{g}/\text{kg}$,
country: USA¹⁰¹, *associated with
confirmed cases of ELEM

incidence: 3/3, conc. range: 800–4,000 $\mu\text{g}/$
kg, \emptyset conc.: 2,100 $\mu\text{g}/\text{kg}$, country: USA/
Italy¹¹³, sa from USA

incidence: ?/165*, conc. range: \leq 1,500 $\mu\text{g}/$
kg, \emptyset conc.: 140 $\mu\text{g}/\text{kg}^{**}$, country: South
Africa¹⁴⁷, *corn feed, **mean of all sa

incidence: 8/18*, conc. range: \leq 600 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 308 $\mu\text{g}/\text{kg}$, country: Spain¹⁵⁹,
*maize-based

incidence: 1/1*, conc.: 252 µg/kg, country: USA¹⁶¹, *mixture of alfalfa, corn, and sorghum

incidence: 2/50*, conc. range: 109.1–144.8 µg/kg, Ø conc.: 127 µg/kg, country: Germany²²⁵, *maize-based

incidence: 8/15*, Ø conc.: 182.1 µg/kg, country: Tunisia⁴⁷⁴, *maize-based products for ruminants and poultry

incidence: 29/82*, conc. range: 28–1,527 µg/kg, Ø conc.: 292.5 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

FUMONISIN B₃

incidence: 12/13*, conc. range: 50–2,650 µg/kg, Ø conc.: 560 µg/kg, country: USA¹⁰¹, *associated with confirmed cases of ELEM

incidence: ?/165*, conc. range: ≤740 µg/kg, Ø conc.: 50 µg/kg**, country: South Africa¹⁴⁷, *corn feed, **mean of all sa

incidence: 23/82*, conc. range: 25–246 µg/kg, Ø conc.: 95.8 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

FUMONISINS (B₁ + B₂)

incidence: 13/15*, conc. range: 55–2,800 µg/kg, country: Tunisia⁴⁷⁴, *maize-based products for ruminants and poultry

FUMONISINS (B₁ + B₂ + B₃)

incidence: 7/13, conc. range: 200–5,000 µg/kg, Ø conc.: 2,300 µg/kg, country: Croatia⁵⁷⁵

FUSAPROLIFERIN

incidence: 2/3, conc. range: 500–30,000 µg/kg, Ø conc.: 15,250 µg/kg, country: USA/Italy¹¹³, sa from USA

HT-2 TOXIN

incidence: 7/82*, conc. range: 22–116 µg/kg, Ø conc.: 47 µg/kg, country: Belgium⁵²⁹,

sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

NIVALENOL

incidence: 3/68*, conc. range: 15–67 µg/kg, Ø conc.: 38 µg/kg, country: Finland⁹, sa imported?, *feed with 50–60% maize

incidence: 9/82*, conc. range: 70–2,547 µg/kg, Ø conc.: 416.2 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

DIACETOXYSCIRPENOL

incidence: 2/9*, conc. range: 380–500 µg/kg, Ø conc.: 490 µg/kg, country: USA¹⁷⁴, *different kinds of feed sa

incidence: 3/82*, conc. range: 3.5–6.3 µg/kg, Ø conc.: 5.1 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

incidence: 14/63*, conc. range: 100–400 µg/kg, Ø conc.: 180 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 23/66*, conc. range: 100–500 µg/kg, Ø conc.: 220 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 13/46*, conc. range: 100–500 µg/kg, Ø conc.: 190 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 5/28*, conc. range: 100–400 µg/kg, Ø conc.: 220 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 6/29*, conc. range: 100–1,200 µg/kg, Ø conc.: 480 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 6/16*, conc. range: 100–400 µg/kg, Ø conc.: 170 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 14/22*, conc. range: 100–400 µg/kg, Ø conc.: 210 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

DIACETOXYSCIRPENOL AND
METABOLITES

incidence: 19/215, conc. range: 20–160 µg/kg, country: Slovenia⁴²⁴

T-2 TOXIN

incidence: 1/9, conc.: 76 µg/kg, country: USA¹⁷⁴

incidence: 1/3, conc.: 4 µg/kg, country: Germany¹⁸⁶

incidence: ?/92*, conc. range: ≤37 µg/kg, country: Germany³⁶⁴, *feed/products

incidence: 10/10, Ø conc.: 6.91 µg/kg, country: Thailand⁴⁴⁹

incidence: 7/82*, conc. range: 10–112 µg/kg, Ø conc.: 28.9 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

incidence: 2/67*, conc. range: 100 µg/kg, Ø conc.: 100 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 7/65*, conc. range: 100 µg/kg, Ø conc.: 100 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 4/49*, conc. range: 100–200 µg/kg, Ø conc.: 130 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 7/28*, conc. range: 100–500 µg/kg, Ø conc.: 310 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 5/29*, conc. range: 100–500 µg/kg, Ø conc.: 240 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 8/17*, conc. range: 100–500 µg/kg, Ø conc.: 190 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

incidence: 12/21*, conc. range: 100–500 µg/kg, Ø conc.: 200 µg/kg, country: Croatia⁵⁸¹, *mainly poultry feed

T-2 TOXIN AND METABOLITES

incidence: 42/232, conc. range: 20–490 µg/kg, country: Slovenia⁴²⁴

TRICHOTHECENES

incidence: 3/42, conc. range: pr, country: South Africa⁷⁹

TYPE-A-TRICHOTHECENES
(HT-2 TOXIN, T-2 TOXIN)

incidence: 7/174, conc. range: 18.8–29.3 µg/kg, country: Germany³⁵³

ZEARALENONE

incidence: 1/1*, conc.: 1,020 µg/kg, country: Papua, New Guinea/Japan⁷², sa most probably from Australia, *mill run feed from wheat

incidence: 1/42, conc.: pr, country: South Africa⁷⁹

incidence: 12/69, conc. range: 100–200 µg/kg (2 sa), >200 µg/kg (10 sa), country: Uruguay/Italy⁹¹, sa from Uruguay

incidence: 14/14*, conc. range: 66–6,800 µg/kg, country: USA¹⁷⁴, sa from Canada and the USA, *different kinds of feed sa

incidence: 7/9*, conc. range: tr–3,600 µg/kg, country: USA¹⁷⁴, *different kinds of feed sa

incidence: 2/4, conc. range: 20 µg/kg, country: Germany¹⁸⁶

incidence: 40/342 overall*, conc. range: 100–8,000 µg/kg, Ø conc.: 660 µg/kg, country: USA²³⁷, *different kinds of sa

incidence: 36/100, conc. range: ≤137 µg/kg, country: Norway²⁹¹

incidence: 291/384, conc. range: 1–≥20.1 µg/kg, country: Germany³³²

incidence: 14/120, conc. range: 50–600 µg/kg, Ø conc.: 217 µg/kg, country: Germany³⁴³

incidence: 129/345, conc. range: 0.1–769.0 µg/kg, country: Germany³⁵³

incidence: 40/372, conc. range: 20–460 µg/kg, country: Slovenia⁴²⁴

incidence: 20/342, conc. range: 100–4,982 µg/kg, country: Brazil⁴²⁵

incidence: 3/8*, conc. range: ≤108 µg/kg, Ø conc.: 80 µg/kg, country: Netherlands⁴⁵⁵, *feed commodities

incidence: 1/1, conc.: ~50 µg/kg, country: UK⁴⁸⁶

incidence: 663/2,311, conc. range: <100 µg/kg (461 sa), 100–1,000 µg/kg (173 sa), >1,000 µg/kg (29 sa), country: Austria⁵⁰⁹

incidence: 41/158, Ø conc.: 36.8 µg/kg, country: Germany⁵²⁵

incidence: 12/82*, conc. range: 58–387 µg/kg, Ø conc.: 157.2 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

incidence: 13/13, conc. range: 49.7–1,168 µg/kg, Ø conc.: 626.6 µg/kg, country: Croatia⁵⁷⁵

incidence: 24/25*, Ø conc.: 133.2 µg/kg**, country: Bulgaria/South Africa⁵⁸², sa from Bulgaria, *feed sa from pig/chick farms, **of pos sa only?

incidence: 23/25*, Ø conc.: 108.2 µg/kg**, country: Bulgaria/South Africa⁵⁸², sa from Bulgaria, *feed sa from pig/chick farms, **of pos sa only?

incidence: 13/16*, conc. range: 0.5–158 µg/kg, Ø conc.: 31.1 µg/kg, country: Poland⁶⁰², *therapeutic feed for dogs with kidney problems

incidence: 1/1*, conc.: 15 µg/kg, country: Poland⁶⁰², *feed for castrated tomcats

incidence: 1/1*, conc.: 60 µg/kg, country: Poland⁶⁰², *non-allergenic feeds containing lamb

incidence: 1/1*, conc.: 24.5 µg/kg, country: Poland⁶⁰², *wet feeds for kittens

incidence: 32/38*, conc. range: 3.5–299.5 µg/kg, Ø conc.: 42.1 µg/kg, country: Poland⁶⁰², *standard feed for cats and dogs

Penicillium Toxins

CITRININ

incidence: 2/60, conc. range: 2,000–3,000 µg/kg*, country: USA³², *in maize and silage

incidence: 23/25*, Ø conc.: 54.7 µg/kg**, country: Bulgaria/South Africa⁵⁸², sa from Bulgaria, *feed sa from pig/chick farms, **of pos sa only?

incidence: 24/25*, Ø conc.: 120.5 µg/kg**, country: Bulgaria/South Africa⁵⁸², sa from Bulgaria, *feed sa from pig/chick farms, **of pos sa only?

PENITREM A

incidence: ?/?*, conc.: 10 µg/kg, country: Norway/Sweden⁴⁶¹, sa of unknown origin, *molded apples

incidence: 1/1*, conc.: ~35,000 µg/kg, country: Australia⁴⁹², *dried hamburger bun

incidence: 25/25*, Ø conc.: 1840.4 µg/kg, country: Bulgaria/South Africa⁵⁸², sa from Bulgaria, *feed sa from pig/chick farms

incidence: 24/25*, Ø conc.: 713.9 µg/kg**, country: Bulgaria/South Africa⁵⁸², sa from Bulgaria, *feed sa from pig/chick farms, **of pos sa only?

PENITREM E

incidence: ?/?*, conc.: pr, country: Norway/Sweden⁴⁶¹, sa of unknown origin, *molded apples

ROQUEFORTINE C

incidence: ?/?*, conc.: 100 µg/kg, country: Norway/Sweden⁴⁶¹, sa of unknown origin, *molded apples

incidence: 4/82*, conc. range: 1.3–14 µg/kg, Ø conc.: 4.6 µg/kg, country: Belgium⁵²⁹, sa from Czech Republic, Denmark, and Hungary, *sow feed, wheat, and maize sa

see also Feedstuff

Feed commodities see Feed

Feed components may contain the following mycotoxins:

***Aspergillus* Toxins**

AFLATOXIN B₁

incidence: 17/41, conc. range: tr (8 sa), 10 µg/kg (2 sa), 20 µg/kg (1 sa), 40 µg/kg (1 sa), 100 µg/kg (1 sa), 300 µg/kg (1 sa), 500 µg/kg (1 sa), 1,000 µg/kg (1 sa), 2,000 µg/kg (1 sa), country: Poland¹⁷⁰

***Fusarium* Toxins**

DEOXYNIVALENOL

incidence: 15/15, conc. range: 634–6,682 µg/kg, Ø conc.: 1,990 µg/kg, country: Germany³⁶⁶

3-ACETYLDEOXYNIVALENOL

incidence: 13/15, conc. range: 14–114 µg/kg, Ø conc.: 50 µg/kg, country: Germany³⁶⁶

15-ACETYLDEOXYNIVALENOL

incidence: 14/15, conc. range: 165–1,780 µg/kg, Ø conc.: 573 µg/kg, country: Germany³⁶⁶

FUSARENON X

incidence: 7/15, conc. range: 29–494 µg/kg, Ø conc.: 124 µg/kg, country: Germany³⁶⁶

HT-2 TOXIN

incidence: 13/15, conc. range: 5–99 µg/kg, Ø conc.: 34 µg/kg, country: Germany³⁶⁶

NEOSOLANIOL

incidence: 1/15, conc.: 9 µg/kg, country: Germany³⁶⁶

NIVALENOL

incidence: 15/15, conc. range: 21–2,050 µg/kg, Ø conc.: 374 µg/kg, country: Germany³⁶⁶

MONOACETOXYSCIRPENOL

incidence: 10/15, conc. range: 15–39 µg/kg, Ø conc.: 14 µg/kg, country: Germany³⁶⁶

DIACETOXYSCIRPENOL

incidence: 1/15, conc.: 21 µg/kg, country: Germany³⁶⁶

SCIRPENTRIOL

incidence: 5/15, conc. range: 12–38 µg/kg, Ø conc.: 20 µg/kg, country: Germany³⁶⁶

T-2 TOXIN

incidence: 10/15, conc. range: 7–70 µg/kg, Ø conc.: 21 µg/kg, country: Germany³⁶⁶

T-2 TETRAOL

incidence: 3/15, conc. range: 11–56 µg/kg, Ø conc.: 39 µg/kg, country: Germany³⁶⁶

T-2 TRIOL

incidence: 1/15, conc.: 8 µg/kg, country: Germany³⁶⁶

ZEARALENONE

incidence: 15/15, conc. range: 57–1,362 µg/kg, Ø conc.: 328 µg/kg, country: Germany³⁶⁶

Feed grain see Feed

Feed ingredients may contain the following mycotoxins:

***Aspergillus* Toxins**

AFLATOXIN B₁

incidence: 2/8*, conc. range: 20 µg/kg (2 sa), country: Poland¹⁷⁰, *mineral, vitamin, and antibiotic mixtures

incidence: 7/71, conc. range: ≤70 µg/kg,

Ø conc.: 31 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 11/30, conc. range: ≤656 µg/kg,

Ø conc.: 78 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

AFLATOXINS

incidence: 12/116*, conc. range: ≤135 µg/kg, Ø conc.: 42 µg/kg, country: USA²⁸⁰,

*miscellaneous feed ingredients

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 3/15, conc. range: ≤ 82 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 54 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 17/25, conc. range: ≤ 293 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 52 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Europe and
 Mediterranean Region

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 28/74, conc. range: $\leq 2,690$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 671 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and
 Oceania

incidence: 345/472, conc. range:
 $\leq 8,020$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 656 $\mu\text{g}/\text{kg}$, country:
 Austria/Singapore/USA⁶⁰⁸, sa from Europe
 and Mediterranean Region

FUMONISINS

incidence: 7/73, conc. range: ≤ 331 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 294 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and
 Oceania

incidence: 7/18, conc. range: ≤ 530 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 229 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Europe and
 Mediterranean Region

T-2 TOXIN

incidence: 102/235, conc. range:
 $\leq 1,776$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 361 $\mu\text{g}/\text{kg}$, country:
 Austria/Singapore/USA⁶⁰⁸, sa from Europe
 and Mediterranean Region

ZEARALENONE

incidence: 23/74, conc. range: $\leq 10,374$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 795 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 37/143, conc. range: $\leq 1,392$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 278 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Europe and
 Mediterranean Region

Feed, commercial mix may contain
 the following mycotoxins:

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 1*/94 overall**, conc.: 5 $\mu\text{g}/\text{kg}$,
 country: Canada²⁴⁰, *consumed by
 poultry, **different kinds of sa

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 3*/94 overall**, conc. range:
 19–45 $\mu\text{g}/\text{kg}$, \emptyset conc.: 27.7 $\mu\text{g}/\text{kg}$, country:
 Canada²⁴⁰, *consumed by swine and
 poultry, **different kinds of sa

15-ACETYLDEOXYNIVALENOL

incidence: 1*/94 overall**, conc.: 11 $\mu\text{g}/\text{kg}$,
 country: Canada²⁴⁰, *consumed by swine,
 **different kinds of sa

Feed, complete may contain the
 following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 24/24*, conc. range: 0.5–18.9 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 4.70 $\mu\text{g}/\text{kg}$, country: Vietnam⁵⁸⁸,
 *complete feed for growing pigs

incidence: 23/24*, conc. range: 1.2–
 38.6 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7.49 $\mu\text{g}/\text{kg}$, country:
 Vietnam⁵⁸⁸, *complete feed for sows

AFLATOXIN B₂

incidence: 13/24*, conc. range: 0.1–2.2 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 0.59 $\mu\text{g}/\text{kg}$, country: Vietnam⁵⁸⁸,
 *complete feed for growing pigs

incidence: 15/24*, conc. range:
 0.2–1.5 $\mu\text{g}/\text{kg}$, \emptyset conc.: 0.58 $\mu\text{g}/\text{kg}$,
 country: Vietnam⁵⁸⁸, *complete feed for
 sows

AFLATOXIN G₁

incidence: 5/24*, conc. range: 1.2–6.2 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 3.52 $\mu\text{g}/\text{kg}$, country: Vietnam⁵⁸⁸,
 *complete feed for growing pigs

incidence: 6/24*, conc. range: 0.5–8.4 µg/kg, Ø conc.: 3.30 µg/kg, country: Vietnam⁵⁸⁸, *complete feed for sows

Fusarium Toxins

ZEARALENONE

incidence: 16/24*, conc. range: 10–295 µg/kg, Ø conc.: 86 µg/kg, country: Vietnam⁵⁸⁸, *complete feed for growing pigs

incidence: 16/24*, conc. range: 20–571 µg/kg, Ø conc.: 101 µg/kg, country: Vietnam⁵⁸⁸, *complete feed for sows

Feed, compound may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/3*, conc.: 20 µg/kg, country: Australia¹²¹, *grower crumbles

incidence: 8/8, conc. range: 0.5–40 µg/kg, Ø conc.: 8.8 µg/kg, country: UK¹²²

incidence: 9/9*, conc. range: 140–600 µg/kg, Ø conc.: 240 µg/kg, country: India⁴⁹⁷, *poultry feedstuff

AFLATOXIN B₂

incidence: 7/8, conc. range: <0.1–7.7 µg/kg, country: UK¹²²

AFLATOXIN G₁

incidence: 3/8, conc. range: <0.1–6.0 µg/kg, country: UK¹²²

AFLATOXIN G₂

incidence: 1/8, conc.: 1.9 µg/kg, country: UK¹²²

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/3*, conc. range: 4.6–5.8 µg/kg, Ø conc.: 5.3 µg/kg, country: Belgium⁵⁶⁶, sa from France, *containing barley as main constituent

Fusarium Toxins

DEOXYNIVALENOL

incidence: 39/72, conc. range: ≤2,408 µg/kg, Ø conc.: 433 µg/kg, country: Netherlands⁴⁵⁵

ZEARALENONE

incidence: 20/72, conc. range: ≤363 µg/kg, Ø conc.: 80 µg/kg, country: Netherlands⁴⁵⁵

Feed, concentrate see

Concentrate(s)

Feed, finished may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/24*, conc.: 56 µg/kg, country: Morocco/USA⁴²⁹, sa from Morocco, *finished feed (mash)

incidence: 1/24*, conc.: 56 µg/kg, country: Morocco/USA⁴²⁹, sa from Morocco, *finished feed (crumbles)

incidence: 1/24*, conc.: 40 µg/kg, country: Morocco/USA⁴²⁹, sa from Morocco, *finished feed (pellets)

incidence: 109/536, conc. range: ≤330 µg/kg, Ø conc.: 24 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 18/56, conc. range: ≤60 µg/kg, Ø conc.: 21 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 23/87, conc. range: ≤59 µg/kg, Ø conc.: 8 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 24/33, conc. range: ≤ 530 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 305 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Europe and
 Mediterranean Region

Fusarium Toxins

DEOXYNIVALENOL

incidence: 194/531, conc. range:
 $\leq 4,994$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 634 $\mu\text{g}/\text{kg}$, country:
 Austria/Singapore/USA⁶⁰⁸, sa from Asia
 and Oceania

incidence: 166/294, conc. range:
 $\leq 2,226$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 290 $\mu\text{g}/\text{kg}$, country:
 Austria/Singapore/USA⁶⁰⁸, sa from Europe
 and Mediterranean Region

FUMONISINS

incidence: 306/524, conc. range:
 $\leq 4,909$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 452 $\mu\text{g}/\text{kg}$, country:
 Austria/Singapore/USA⁶⁰⁸, sa from Asia
 and Oceania

incidence: 3/10, conc. range: $\leq 1,077$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 638 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Europe and
 Mediterranean Region

T-2 TOXIN

incidence: 6/440, conc. range: ≤ 494 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 296 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and
 Oceania

incidence: 7/54, conc. range: ≤ 287 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 219 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Europe and
 Mediterranean Region

ZEARALENONE

incidence: 204/532, conc. range:
 $\leq 4,132$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 366 $\mu\text{g}/\text{kg}$, country:
 Austria/Singapore/USA⁶⁰⁸, sa from Asia
 and Oceania

incidence: 45/166, conc. range: $\leq 2,348$ $\mu\text{g}/$
 kg , \emptyset conc.: 144 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Europe and
 Mediterranean Region

Feed, general may contain the
 following mycotoxins:

Aspergillus Toxins

AFLATOXINS ($B_1 + B_2 + G_1 + G_2$)

incidence: 12/57, conc. range: < 20 $\mu\text{g}/\text{kg}$
 (2 sa), 20–100 $\mu\text{g}/\text{kg}$ (7 sa), 100–200 $\mu\text{g}/\text{kg}$
 (2 sa), 200–300 $\mu\text{g}/\text{kg}$ (1 sa), country:
 South Africa⁴⁴

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 2/57, conc. range: pr, country:
 South Africa⁴⁴

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/57, conc.: pr, country: South
 Africa⁴⁴

FUMONISIN B_1

incidence: 5/5, conc. range: 200–1,000 $\mu\text{g}/$
 kg (3 sa), $\leq 11,000$ $\mu\text{g}/\text{kg}$ (2 sa), country:
 South Africa⁴⁴

TRICHOTHECENES

incidence: 19/57, conc. range: pr, country:
 South Africa⁴⁴

Feed, hominy may contain the
 following mycotoxins:

Fusarium Toxins

FUMONISIN B_1

incidence: 10/10, conc. range:
 86–2,964 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,225 $\mu\text{g}/\text{kg}$,
 country: Colombia⁵⁴⁸

FUMONISIN B_2

incidence: 8/10, conc. range: 57–987 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 487 $\mu\text{g}/\text{kg}$, country: Colombia⁵⁴⁸

Feed, industrial may contain the
 following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 66/68, conc. range:
14–1,216 µg/kg, Ø conc.: 148 µg/kg,
country: Finland⁹

3-ACETYLDEOXYNIVALENOL

incidence: 21/68, conc. range: 5–87 µg/kg,
Ø conc.: 35 µg/kg, country: Finland⁹

NIVALENOL

incidence: 3/68, conc. range: 15–67 µg/kg,
Ø conc.: 38 µg/kg, country: Finland⁹

T-2 TOXIN

incidence: 6/68, conc. range: 44–90 µg/kg,
Ø conc.: 68 µg/kg, country: Finland⁹

ZEARALENONE

incidence: 6/68, conc. range: 24–42 µg/kg,
Ø conc.: 34 µg/kg, country: Finland⁹

Feed, maize-based may contain the
following mycotoxins:

Fusarium ToxinsFUMONISIN B₁

incidence: 13/13, conc. range:
256–6,342 µg/kg, Ø conc.: 2,573 µg/kg,
country: Uruguay/Canada/USA⁷, sa from
Uruguay

incidence: 61/61*, conc. range:
1,000–126,000 µg/kg, Ø conc.: 25,000 µg/
kg, country: USA¹⁴⁰, *associated with
confirmed ELEM cases

incidence: 12/12*, conc. range:
1,000–32,000 µg/kg, country: USA¹⁴⁰,
*associated with confirmed ELEM cases

FUMONISIN B₂

incidence: 1/13, conc.: tr, country:
Uruguay/Canada/USA⁷, sa from Uruguay

Feed, miscellaneous may contain
the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 68/194*, conc. range:
<5–400 µg/kg, country: South Africa⁷⁹,
*unspecified materials destined for
animal consumption

incidence: 1/12*, conc.: 2.1 µg/kg,
country: Colombia¹²⁵, *wheat by-products,
cassava meal, and palm meal

incidence: 5/27, conc. range: 1–20 µg/kg
(4 sa), >300 µg/kg (1 sa), country: USA³⁷⁰

incidence: 4/227, conc. range: pr, country:
UK⁵⁴⁵

incidence: 2/33, conc. range: pr, country:
UK⁵⁴⁵

AFLATOXIN B

incidence: 13/20*, conc. range: ≤10 µg/kg
(5 sa), >10–≤100 µg/kg (5 sa), >100 µg/kg
(3 sa)**, country: France⁴⁶, *different
kinds of feed, **125–375 µg/kg AFB₁

AFLATOXINS

incidence: 17/23*, conc. range: 0.8–156 µg/
kg, Ø conc.: 39.7 µg/kg, country: South
Africa⁵²⁸, *different kinds of feed sa

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 3/6, conc. range: 0.6–1.89 µg/
kg, country: Mexico/Spain²⁰, sa from
Spain

PATULIN

incidence: 13/194*, conc. range: pr,
country: South Africa⁷⁹, *unspecified
materials destined for animal
consumption

Fusarium Toxins

DEOXYNIVALENOL

incidence: 8/77, conc. range: <2–300 µg/
kg, Ø conc.: 159.1 µg/kg, country: Saudi
Arabia³⁸⁹

incidence: 424/424, conc. range: 0–100 µg/kg (85 sa), 101–500 µg/kg (260 sa), 501–1,000 µg/kg (50 sa), ≤2,200 µg/kg (29 sa), country: Austria⁴⁹¹

incidence: 274/342, conc. range: 100–41,600 µg/kg, Ø conc.: 3,100 µg/kg, country: USA⁵⁸⁵

FUMONISIN B₁

incidence: 19/19*, conc. range: <1,000–9,000 µg/kg, country: USA¹⁴⁰, *not associated with ELEM cases

incidence: 20/21*, conc. range: 200–38,500 µg/kg, Ø conc.: 9,350 µg/kg, country: Brazil/South Africa¹⁴³, sa from Brazil, *associated with outbreaks of mycotoxicoses

incidence: 6/23*, conc. range: 15–5,900 µg/kg, Ø conc.: 1,188.8 µg/kg, country: South Africa⁵²⁸, *different kinds of feed sa

FUMONISIN B₂

incidence: 18/21*, conc. range: 100–12,000 µg/kg, Ø conc.: 3,322 µg/kg, country: Brazil/South Africa¹⁴³, sa from Brazil, *associated with outbreaks of mycotoxicoses

NEOSOLANIOL

incidence: 1/77, conc.: 200 µg/kg, country: Saudi Arabia³⁸⁹

NIVALENOL

incidence: 4/77, conc. range: 25–600 µg/kg, Ø conc.: 337.5 µg/kg, country: Saudi Arabia³⁸⁹

TRICHOHECENES

incidence: 8/194*, conc. range: pr, country: South Africa⁷⁹, *unspecified materials destined for animal consumption

ZEARALENONE

incidence: 1/6, conc.: 0.71 µg/kg, country: Mexico/Spain²⁰, sa from Spain

incidence: 1/21*, conc.: 162 µg/kg, country: Taiwan /USA²²¹, sa from USA

and South Africa, *swine feeds prepared from maize

incidence: 1/3*, conc.: 203 µg/kg, country: Taiwan /USA²²¹, sa from USA and South Africa, *sa prepared from maize

incidence: 2/9*, conc. range: 126–152 µg/kg, Ø conc.: 139 µg/kg, country: Taiwan / USA²²¹, sa from USA and South Africa, *sa prepared from various cereals and maize

incidence: 180/180, conc. range: 0–10 µg/kg (138 sa), 11–50 µg/kg (32 sa), 51–100 µg/kg (5 sa), ≤100 µg/kg (5 sa), country: Austria⁴⁹¹

incidence: 3/23*, conc. range: 100–165,000 µg/kg, Ø conc.: 55,866.7 µg/kg, country: South Africa⁵²⁸, *different kinds of feed sa

Feed, mixed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/5*, conc.: 10 µg/kg, country: Egypt¹⁶, *egg production mixed feed

incidence: 3/5*, Ø conc.: 50 µg/kg, country: Egypt¹⁶, *calf fattening mixed feed

incidence: 2/5*, Ø conc.: 50 µg/kg, country: Egypt¹⁶, *milk production mixed feed

incidence: 12/102, conc. range: 40–3,000 µg/kg, country: India¹²⁷

incidence: 9/30, conc. range: 20–80 µg/kg, country: India¹⁸³

incidence: 8/30, conc. range: 40–60 µg/kg, country: India¹⁸³

incidence: 37/37*, conc. range: <5 µg/kg (30 sa), 6–10 µg/kg (5 sa), 11–20 µg/kg (2 sa), country: Germany²⁹⁸, *calf fattening mixed feed

incidence: ?/8*, conc. range: 10–300 µg/kg, country: Germany²⁹⁸, *calf fattening

mixed feed containing 4–20% peanut products

incidence: 4/4, conc. range: 16.8–146.0 µg/kg, Ø conc.: 63.1 µg/kg, country: USA³⁸⁷

incidence: 26/203, conc. range: ≤50 µg/kg (20 sa), >50 µg/kg (6 sa), country: Poland⁴⁹⁹

incidence: 7/10*, conc. range: tr–300 µg/kg, country: Argentina⁵⁷⁰, *mixed feeds for rabbits

AFLATOXIN B₂

incidence: 1/5*, conc.: 20 µg/kg, country: Egypt¹⁶, *egg production mixed feed

incidence: 1/1*, conc.: 0.016 µg/kg, country: Italy⁴⁶⁷, *oat, horse bean, and maize

incidence: 2/10*, conc. range: tr–4 µg/kg, country: Argentina⁵⁷⁰, *mixed feeds for rabbits

AFLATOXIN G₁

incidence: 2/5*, Ø conc.: 50 µg/kg, country: Egypt¹⁶, *milk production mixed feed

incidence: 1/1*, conc.: 0.440 µg/kg, country: Italy⁴⁶⁷, *oat, horse bean, and maize

AFLATOXINS

incidence: 2/18, conc. range: 51–500 µg/kg, country: Australia²¹

incidence: 4/27, conc. range: <5 µg/kg, country: Spain¹²⁸

incidence: 2/40, conc. range: ≤105 µg/kg, Ø conc.: 94 µg/kg, country: USA²⁸⁰

incidence: 5/6, conc. range: ≤67 µg/kg, Ø conc.: 36 µg/kg, country: USA²⁸⁰, sa imported

incidence: 18/30*, conc. range: 10–29 µg/kg (11 sa), 30–49 µg/kg (3 sa), 30–49 µg/kg (1 sa), >100–≤1,500 µg/kg (3 sa), country: India³⁴⁹, *poultry feed

incidence: 44/49, conc. range: 2–60 µg/kg, Ø conc.: 3.2 µg/kg, country: Egypt³⁵⁷

incidence: 6/6, conc. range: 2–10 µg/kg, Ø conc.: 4.7 µg/kg, country: Egypt³⁵⁷

STERIGMATOCYSTIN

incidence: 1/51* overall**, conc.: 2,300 µg/kg, country: Canada¹³³, *crumbled commercial mixed feed, **different kinds of sa

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 89/630, conc. range: 0.2–12.5 µg/kg, Ø conc.: 2.3 µg/kg, country: Germany¹³

incidence: 1/3*, conc.: 14 µg/kg, country: Egypt¹⁶, *egg production mixed feed

incidence: 2/3*, Ø conc.: 19 µg/kg, country: Egypt¹⁶, *milk production mixed feed

incidence: 1/25, conc.: 70,000 µg/kg, country: Australia²¹

incidence: 3/23, conc. range: <100 µg/kg (3 sa), country: Austria²⁹

incidence: 2/13, conc. range: 20–170 µg/kg, country: Canada⁹²

incidence: 1/51* overall**, conc.: 140 µg/kg, country: Canada¹³³, *pelleted commercial mixed feed, **different kinds of sa

incidence: 5/38, conc. range: 4–28 µg/kg, country: Germany¹⁸⁶, sa of unknown origin

incidence: 81/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 2/2, conc. range: 0.3–0.7 µg/l, Ø conc.: 0.35 µg/kg, country: Japan⁵⁰¹

incidence: 12/41, conc. range: <100 µg/kg (9 sa), 100–1,000 µg/kg (3 sa), country: Austria⁵⁰⁹

incidence: 19/208*, conc. range: 2.5–120 µg/kg, country: Poland⁵⁷⁹, *for cattle, poultry, sheep, and swine

OCHRATOXINS (A + B)

incidence: 10/203, conc. range: 10–50 µg/kg country: Poland⁴⁹⁹

PATULIN

incidence: 6/7,345 overall, conc. range: nc, country: Hungary²⁰⁹

Fusarium Toxins

DEOXYNIVALENOL

incidence: 3/4*, conc. range: 225–528 µg/kg, Ø conc.: 345 µg/kg, country: Egypt¹⁶, *egg production mixed feed

incidence: 3/4*, conc. range: 80–400 µg/kg, Ø conc.: 230 µg/kg, country: Egypt¹⁶, *calf fattening mixed feed

incidence: 11/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 134/342* overall**, conc. range: 100–22,000 µg/kg, Ø conc.: 2,700 µg/kg, country: USA²³⁷, *mixed feed (primarily maize), **different kinds of sa

FUMONISIN B₁

incidence: 1/1, conc.: 8,850 µg/kg, country: South Africa¹⁰⁰

FUMONISIN B₂

incidence: 1/1, conc.: 3,000 µg/kg, country: South Africa¹⁰⁰

FUSARIC ACID

incidence: 1/1*, conc.: 1,910 µg/kg, country: USA⁴¹³, *corn-based ration suspected toxic to livestock

MONILIFORMIN

incidence: 15/15, conc. range: <10 µg/kg (7 sa), 10–100 µg/kg (5 sa), 100–150 µg/kg (3 sa), country: Austria¹⁸²

NEOSOLANIOL

incidence: 1/30, conc.: 20 µg/kg, country: India¹⁸³

DIACETOXYSCIRPENOL

incidence: 8/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 1/188*, conc.: 125 µg/kg, country: Germany⁴⁷⁰, *69 mixed feed, flour, and 119 mixed feed, pellets sa

T-2 TOXIN

incidence: 360/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 3/188*, conc. range: 50–65 µg/kg, Ø conc.: 55 µg/kg, country: Germany⁴⁷⁰, *69 mixed feed, flour, and 119 mixed feed, pellets sa

ZEARALENONE

incidence: 4/4*, conc. range: 5–20 µg/kg, Ø conc.: 11 µg/kg, country: Egypt¹⁶, *milk production mixed feed

incidence: 1/1, conc.: 89 µg/kg, country: Japan⁷⁰, sa from China

incidence: 20/31*, conc. range: 3.58–55.84 µg/kg, Ø conc.: 11.57 µg/kg, country: Germany¹⁰⁷, *13 dairy cattle (5 contaminated) and 18 chicken feed sa (15 contaminated)

incidence: 1/267*, conc.: ~100 µg/kg, country: Germany¹²⁴, sa from EU, *mixed feed for cattle, calf, lamb, pig or poultry

incidence: 4/30, conc. range: 40 µg/kg, country: India¹⁸³

incidence: 3/30, conc. range: 30 µg/kg, country: India¹⁸³

incidence: 47/7,345 overall, conc. range: nc, country: Hungary²⁰⁹

incidence: 40/342*, conc. range: 100–8,000 µg/kg, Ø conc.: 660 µg/kg, country: USA²³⁷, *mixed feed (primarily maize also oats and wheat)

incidence: 1/203, conc.: 70 µg/kg country: Poland⁴⁹⁹

Penicillium Toxins

CITRININ

incidence: 2/7,345, conc. range: nc,
country: Hungary²⁰⁹

RUBRATOXIN B

incidence: 17/7,345 overall, conc. range:
nc, country: Hungary²⁰⁹

Feed, sweet may contain the
following mycotoxins:

Fusarium ToxinsFUMONISIN B₁

incidence: 12/17*, conc. range:
≤94,000 µg/kg, country: USA⁵⁸,
*associated with animal health problems
(ELEM)

incidence: 1/1*, conc.: 9,000 µg/kg,
country: USA⁵⁸, *sweet feed for horses

Feed (beef) may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 4/10, conc. range: <5 µg/kg
(2 sa), 6–20 µg/kg (1 sa), 51–100 µg/kg
(1 sa), country: UK²⁶⁷

Feed (bird) may contain the following
mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 8/30, conc. range:
23–256 µg/kg, Ø conc.: 109.75 µg/kg,
country: Brazil⁴

incidence: 1*/15, conc.: 370 µg/kg,
country: UK⁴², *wild bird food
(peanuts–plastic mesh bag)

AFLATOXIN B₂

incidence: 6/30, conc. range: 12–114 µg/
kg, Ø conc.: 70.5 µg/kg, country: Brazil⁴

incidence: 1*/15, conc.: 29 µg/kg, country:
UK⁴², *wild bird food (peanuts–plastic
mesh bag)

AFLATOXIN G₁

incidence: 2/30, conc. range: 43–87 µg/kg,
Ø conc.: 65 µg/kg, country: Brazil⁴

incidence: 1*/15, conc.: 3.3 µg/kg,
country: UK⁴², *wild bird food (in
peanuts–plastic mesh bag)

AFLATOXIN G₂

incidence: 2/30, conc. range: 18–36 µg/kg,
Ø conc.: 27 µg/kg, country: Brazil⁴

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 4*/15, conc. range: 1.5–7 µg/kg,
Ø conc.: 4 µg/kg, country: UK⁴², *domestic
bird food (budgerigar seed-loose and in a
box, parakeet seed-loose)

incidence: 1*/15, conc.: 6.0 µg/kg,
country: UK⁴², *wild bird food–loose

Fusarium ToxinsFUMONISIN B₁

incidence: 2*/15, conc. range: 240–410 µg/
kg, Ø conc.: 325 µg/kg, country: UK⁴²,
*wild bird food-loose

FUMONISIN B₂

incidence: 2*/15, conc. range: 50 µg/kg,
Ø conc.: 50 µg/kg, country: UK⁴², *wild
bird food-loose

FUSARIC ACID

incidence: 1/1*, conc.: 430 µg/kg, country:
USA⁴¹³, *lethal to ducks, poultry chicks,
and turkey poults

Feed (bovine) may contain the
following mycotoxins:

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 1/11, conc.: 0.55 µg/kg,
country: Mexico/Spain²⁰, sa from Spain

Feed (breeder) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 8*/8**, conc. range: ≤ 30 $\mu\text{g}/\text{kg}$ (5 sa), 31–100 $\mu\text{g}/\text{kg}$ (2 sa), > 100 $\mu\text{g}/\text{kg}$ (1 sa), country: India⁵¹⁵, *all sa contained aflatoxin, **poultry feed

incidence: 8*/8**, conc. range: ≤ 30 $\mu\text{g}/\text{kg}$ (3 sa), 31–100 $\mu\text{g}/\text{kg}$ (4 sa), > 100 $\mu\text{g}/\text{kg}$ (1 sa), country: India⁵¹⁵, *all sa contained aflatoxin, **poultry feed

Feed (broiler) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/5*, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, country: Egypt¹⁶, *broiler mixed feed

incidence: 14/14, conc. range: tr–108.0 $\mu\text{g}/\text{kg}$, country: India³⁸⁶

incidence: 1/60, conc.: 28 $\mu\text{g}/\text{kg}$, country: Brazil⁵³⁹

AFLATOXIN

incidence: 112*/112**, conc. range: ≤ 30 $\mu\text{g}/\text{kg}$ (68 sa), 31–100 $\mu\text{g}/\text{kg}$ (38 sa), > 100 $\mu\text{g}/\text{kg}$ (6 sa), country: India⁵¹⁵, *all sa contained aflatoxin, **poultry feed

incidence: 85*/85**, conc. range: ≤ 30 $\mu\text{g}/\text{kg}$ (52 sa), 31–100 $\mu\text{g}/\text{kg}$ (32 sa), > 100 $\mu\text{g}/\text{kg}$ (1 sa), country: India⁵¹⁵, *all sa contained aflatoxin, **poultry feed

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/3, conc.: 13 $\mu\text{g}/\text{kg}$, country: Egypt¹⁶

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/4, conc. range: 680–960 $\mu\text{g}/\text{kg}$, \emptyset conc.: 820 $\mu\text{g}/\text{kg}$, country: Egypt¹⁶

FUMONISIN B₁

incidence: 5/14, conc. range: 20–200 $\mu\text{g}/\text{kg}$, country: India³⁸⁶

ZEARALENONE

incidence: 4/4, conc. range: 3–426 $\mu\text{g}/\text{kg}$, \emptyset conc.: 143 $\mu\text{g}/\text{kg}$, country: Egypt¹⁶

incidence: 2/19*, conc.: 405–1,238 $\mu\text{g}/\text{kg}$, \emptyset conc.: 821.5 $\mu\text{g}/\text{kg}$, country: Taiwan/USA²²¹, sa from USA and South Africa, *sa prepared from maize

Feed (calf) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/3, conc. range: tr–1,670 $\mu\text{g}/\text{kg}$, country: India³²¹

incidence: 1/15, conc.: pr, country: UK⁵⁴⁵

Feed (cat) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXICOL

incidence: 14/16, \emptyset conc.: 0.01 $\mu\text{g}/\text{kg}$ *, country: Mexico³⁹⁵, *of all sa?

AFLATOXIN B₁

incidence: 1/25, conc.: 16 $\mu\text{g}/\text{kg}$, country: Brazil⁴

incidence: 1*/35, conc.: 2.1 $\mu\text{g}/\text{kg}$, country: UK⁴², *complete feed–plastic pack

incidence: 16/16, conc. range: ≤ 46.1 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8.02 $\mu\text{g}/\text{kg}$, country: Mexico³⁹⁵

AFLATOXIN B₂

incidence: 4/16, \emptyset conc.: 0.01 $\mu\text{g}/\text{kg}$ *, country: Mexico³⁹⁵, *of all sa?

AFLATOXIN G₁

incidence: 12/16, \emptyset conc.: 0.04 $\mu\text{g}/\text{kg}$ *, country: Mexico³⁹⁵, *of all sa?

AFLATOXIN G₂

incidence: 4/16, Ø conc.: 0.05 µg/kg*,
country: Mexico³⁹⁵, *of all sa?

AFLATOXIN M₁

incidence: 14/16, conc. range: ≤21.37 µg/
kg, Ø conc.: 3.00 µg/kg*, country:
Mexico³⁹⁵, *of all sa?

AFLATOXIN M₂

incidence: 11/16, Ø conc.: 0.76 µg/kg*,
country: Mexico³⁹⁵, *of all sa?

AFLATOXIN P₁

incidence: 13/16, Ø conc.: 0.01 µg/kg*,
country: Mexico³⁹⁵, *of all sa?

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 3*/35, conc. range: 1.2–2.3 µg/
kg, Ø conc.: 1.6 µg/kg, country: UK⁴²,
*cereal gourmet mix-box, cereal cocktail
mix-box, and biscuits-loose

incidence: 4/8*, Ø conc.: 1.03 µg/kg,
country: Poland/Austria³⁵⁰, sa from both
countries, *dry cat food

incidence: 8/20*, Ø conc.: 0.35 µg/kg,
country: Poland/Austria³⁵⁰, sa from both
countries, *canned cat food

Fusarium* Toxins*FUMONISIN B₁**

incidence: 3*/35, conc. range: 90–690 µg/kg,
Ø conc.: 340 µg/kg, country: UK⁴², *in cereal
kitten mix-box, complete feed-plastic pack

incidence: 2/2*, conc. range: 220–987 µg/
kg, Ø conc.: 603.5 µg/kg, country: USA¹⁵⁴,
*dry cat food

incidence: 2/2*, conc. range: 55.5–111 µg/
kg, Ø conc.: 83.3 µg/kg, country: USA⁴⁹⁰,
*dry cat feed

FUMONISIN B₂

incidence: 2*/35, conc. range: 60–80 µg/
kg, Ø conc.: 70 µg/kg, country: UK⁴², *in
cereal kitten mix-box, complete feed-
plastic pack

incidence: 2/2, conc. range: 125–140 µg/
kg, Ø conc.: 132.5 µg/kg, country: USA¹⁵⁴,
*dry cat food

Feed (cattle) may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 26/318, conc. range:
<10–750 µg/kg, country: UK³⁰

incidence: 2/2, conc. range: 100–200 µg/kg,
Ø conc.: 150 µg/kg, country: Australia¹²¹

incidence: 45/124, conc. range: 1–20 µg/kg
(1 sa), 21–250 µg/kg (5 sa), 501–1,000 µg/
kg (12 sa), 1,001–1,500 µg/kg (10 sa),
1,501–2,000 µg/kg (8 sa), 2,001–2,500 µg/
kg (5 sa), 2,501–≤2,960 µg/kg (4 sa),
country: India²²⁹

incidence: 378/498, conc. range: ≤25 µg/kg
(131 sa), 26–50 µg/kg (87 sa), 51–100 µg/kg
(61 sa), 101–200 µg/kg (60 sa), 201–500 µg/
kg (25 sa), 501–1,000 µg/kg (9 sa), 1,001–
1,500 µg/kg (4 sa), 1,754 µg/kg (1 sa),
Ø conc.: 103.02 µg/kg, country: India²⁴⁷

incidence: 4/4*, conc. range: 59.4–192.6 µg/
kg, Ø conc.: 116.0 µg/kg, country: India²⁵³,
*compounded cattle feed

incidence: 22/25, conc. range: ≤6,000 µg/
kg, country: India³²¹

incidence: ?/226, conc. range: ≤34 µg/kg*,
country: Netherlands³⁷⁹, * 3 sa exceeding
20 µg/kg

incidence: 171/171, conc. range: nd–20 µg/
kg (68 sa), 21–50 µg/kg (71 sa), 51–80 µg/
kg (19 sa), 81–250 µg/kg (13 sa), country:
India⁵⁷⁸

AFLATOXIN B₂

incidence: 234/498, Ø conc.: 19.34 µg/kg,
country: India²⁴⁷

AFLATOXIN B

incidence: 16/20, conc. range: ≤10 µg/kg (8
sa), >10–≤100 µg/kg (7 sa), >100 µg/kg (1
sa)*, country: France⁴⁶, *330 µg/kg AFB₁

AFLATOXINS (B₁ + G₁)

incidence: 2/6*, Ø conc.: 580 µg/kg,
country: India⁴³⁸, *feed for dry cattle

AFLATOXINS (B + G)

incidence: 5/23, conc. range: 5–2,000 µg/
kg, country: France⁴⁵

AFLATOXIN

incidence: 3/3, conc. range: <30 µg/kg
(2 sa), >30 µg/kg (1 sa), country: India³⁸⁰

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 11/59, conc.: range: ~ < 50 µg/
kg, country: Poland⁸⁴

AFLATOXINS

incidence: 7/7*, conc. range: 4.6–21.4 µg/
kg, Ø conc.: 12.9 µg/kg, country: South
Africa⁵³³, *grass

incidence: 1/1*, conc.: 2.3 µg/kg, country:
South Africa⁵³³, *lucerne (alfalfa)

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 1/59, conc.: 10–50 µg/kg,
country: Poland⁸⁴

incidence: 17/124, conc. range: 251–500 µg/
kg (7 sa), 501–1,000 µg/kg (5 sa), 1,001–
≤1,450 µg/kg (5 sa), country: India²²⁹

incidence: 3/7*, conc. range: 4.6–5.9 µg/
kg, Ø conc.: 5.2 µg/kg, country: South
Africa⁵³³, *grass

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 2/18, conc. range: 200 µg/kg,
Ø conc.: 200 µg/kg, country: Saudi
Arabia³⁸⁹

incidence: 4/7*, conc. range: 300–1,500 µg/
kg, Ø conc.: 650 µg/kg, country: South
Africa⁵³³, *grass

FUMONISINS

incidence: 3/7*, conc. range:
1,900–7,600 µg/kg, Ø conc.: 3,866.6 µg/kg,
country: South Africa⁵³³, *grass

incidence: 1/1*, conc.: 1,200 µg/kg,
country: South Africa⁵³³, *lucerne (alfalfa)

NIVALENOL

incidence: 1/18, conc.: 125 µg/kg, country:
Saudi Arabia³⁸⁹

T-2 TOXIN

incidence: 2/7*, conc. range: 34.6–42.7 µg/
kg, Ø conc.: 38.7 µg/kg, country: South
Africa⁵³³, *grass

T-2 TOXIN + HT-2 TOXIN

incidence: ?/4, conc. range: 67.68 µg/kg,
country: Croatia⁶¹¹

ZEARALENONE

incidence: 1/59, conc.: nc, country:
Poland⁸⁴

incidence: 8/395 overall*, conc. range:
23–694 µg/kg, Ø conc.: 168.6 µg/kg,
country: USA¹¹⁹, *different kinds of sa

incidence: 20/124, conc. range: 21–250 µg/
kg (3 sa), 251–500 µg/kg (6 sa),
501–1,000 µg/kg (6 sa), 1,001–1,500 µg/kg
(5 sa), country: India²²⁹

incidence: 7/7*, conc. range:
234.5–1,198 µg/kg, Ø conc.: 607.9 µg/kg,
country: South Africa⁵³³, *grass

incidence: 1/1*, conc.: 464.9 µg/kg,
country: South Africa⁵³³, *lucerne (alfalfa)

Penicillium* Toxins*CITRININ**

incidence: 24/124, conc. range:
251–500 µg/kg (6 sa), 501–1,000 µg/kg
(4 sa), 1,001–1,500 µg/kg (12 sa), 1,501–
≤1,825 µg/kg (2 sa), country: India²²⁹

Feed (cattle and dairy) may contain
the following mycotoxins:

Fusarium* Toxins*FUMONISIN**

incidence: 7/7, conc. range: ≤500 µg/kg,
country: South Africa¹⁴⁷, sa from USA

Feed (cattle and sheep) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/37, conc.: 300 µg/kg, country: Poland¹⁷⁰

Feed (cereals) see Cereal grain

Feed (chicken) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/4, conc. range: 0.1–0.5 µg/kg, country: Botswana¹⁰²

incidence: 274/290, conc. range: 1–500 µg/kg, country: Indonesia/Australia¹¹⁸, sa from Indonesia

incidence: ?/20, conc. range: 6–216 µg/kg, country: Thailand⁵⁸⁴

AFLATOXIN G₁
incidence: 4/4, conc. range: 0.2–0.5 µg/kg, country: Botswana¹⁰²

AFLATOXINS
incidence: 1/1, conc.: 2.9 µg/kg, country: South Africa⁵³³

Fusarium Toxins

DEOXYNIVALENOL
incidence: 1/1, conc.: <400 µg/kg, country: USA⁷¹

incidence: 1/1, conc.: 800 µg/kg, country: South Africa⁵³³

FUMONISIN B₁
incidence: ?/3, conc. range: 100–15,000 µg/kg, country: USA¹⁵⁸

FUMONISINS
incidence: 4/4, conc. range: 163–1,050 µg/kg, Ø conc.: 572 µg/kg, country: Botswana¹⁰²

incidence: 1/1, conc.: 8,300 µg/kg, country: South Africa⁵³³

ZEARALENONE

incidence: 1/4, conc.: 40 µg/kg, country: Botswana¹⁰²

incidence: 1/1, conc.: 165.4 µg/kg, country: South Africa⁵³³

Feed (chicken grower) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS
incidence: 1/1, conc.: 3 µg/kg, country: South Africa⁵³³

Fusarium Toxins

DEOXYNIVALENOL
incidence: 1/1, conc.: 700 µg/kg, country: South Africa⁵³³

FUMONISINS
incidence: 1/1, conc.: 6,200 µg/kg, country: South Africa⁵³³

ZEARALENONE
incidence: 1/1, conc.: 130.1 µg/kg, country: South Africa⁵³³

Feed (chicken starter) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS
incidence: 1/1, conc.: 3.3 µg/kg, country: South Africa⁵³³

Fusarium Toxins

DEOXYNIVALENOL
incidence: 1/1, conc.: 500 µg/kg, country: South Africa⁵³³

FUMONISINS
incidence: 1/1, conc.: 6,800 µg/kg, country: South Africa⁵³³

ZEARALENONE

incidence: 4/26*, conc. range: 354–1,973 µg/kg, country: Taiwan/USA²²¹, sa from South Africa/USA, *sa prepared from maize

incidence: 1/1, conc.: 146.4 µg/kg, country: South Africa⁵³³

Feed (cow) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN**

incidence: 13/18, conc. range: ≤268 µg/kg, country: Nigeria¹⁰⁹

Aspergillus and **Penicillium** Toxins**OCHRATOXIN A**

incidence: 6/24, conc. range: 12–324 µg/kg, country: Brazil¹¹

Feed (dairy cattle) may contain the following mycotoxins:

Alternaria Toxins**AAL-TOXIN**

incidence: 37/38*, conc. range: 90–1,470 µg/kg, country: USA³³⁴, *including corn meal, corn silage, and other mixed feed

Aspergillus Toxins**AFLATOXIN B₁**

incidence: ?/?*, conc. range: ≤1,900 µg/kg, country: UK³⁶, *feeding stuff components

incidence: 62/206, conc. range: <5 µg/kg (17 sa), 6–20 µg/kg (24 sa), 21–50 µg/kg (19 sa), >100 µg/kg (2 sa), country: UK²⁶⁷

incidence: 14/14*, conc. range: <5 µg/kg (4 sa), 6–10 µg/kg (1 sa), 11–20 µg/kg (5 sa), 21–30 µg/kg (3 sa), 37 µg/kg (1 sa), country: Germany²⁹⁸, *dairy cattle feed

incidence: 30/30* conc. range: <5 µg/kg (10 sa), 6–10 µg/kg (6 sa), 11–20 µg/kg (9 sa), 21–≤28 µg/kg (5 sa), country: Germany²⁹⁸, *dairy cattle feed

incidence: 16/16*, conc. range: <5 µg/kg (6 sa), 6–10 µg/kg (6 sa), 11–≤14 µg/kg (4 sa), country: Germany²⁹⁸, *dairy cattle feed

incidence: ?/13*, conc. range: 15–100 µg/kg, country: Germany²⁹⁸, *dairy cattle feed containing 2–5% peanut products

incidence: ?/20*, conc. range: ≤240 µg/kg, country: Germany²⁹⁸, *dairy cattle feed containing 2–5% peanut products

incidence: ?/16*, conc. range: 16–260 µg/kg, country: Germany²⁹⁸, *dairy cattle feed containing 2–5% peanut products

incidence: ?/11*, conc. range: 13–280 µg/kg, country: Germany²⁹⁸, *dairy cattle feed containing 6–10% peanut products

incidence: ?/5*, conc. range: ≤550 µg/kg, country: Germany²⁹⁸, *dairy cattle feed containing 6–10% peanut products

incidence: ?/2*, conc. range: 25–250 µg/kg, country: Germany²⁹⁸, *dairy cattle feed containing 6–12% peanut products

incidence: ?/3*, conc. range: 80–1,100 µg/kg, country: Germany²⁹⁸, *dairy cattle feed containing >20% peanut products

incidence: 14/96*, conc. range: 11.5–287 µg/kg, country: Brazil⁴⁰⁹, *dairy cattle feed

incidence: 300/300*, conc. range: <1 µg/kg (153 sa), 1–5 µg/kg (37 sa), 6–20 µg/kg (44 sa), 21–50 µg/kg (19 sa), >50 µg/kg (47 sa), country: Switzerland⁴⁹⁴, parts of the sa imported, *dairy cattle concentrate feed with gradual elimination of groundnut meal, for more detailed information please see the article

AFLATOXIN B₂

incidence: 14/96, conc. range: 19–40 µg/kg, country: Brazil⁴⁰⁹

AFLATOXINS (TOTAL)

incidence: 3/6*, Ø conc.: 620 µg/kg,
country: India⁴³⁸, *feed for milk cattle

incidence: 2/6*, Ø conc.: 580 µg/kg,
country: India⁴³⁸, *feed for dry cattle

STERIGMATOCYSTIN

incidence: 1/1*, conc.: 7,750 µg/kg,
country: USA⁵⁹³, *dairy cattle feed

Aspergillus* and *Penicillium* Toxins*CYCLOPIAZONIC ACID**

incidence: 33/38*, conc. range: 120–
1,820 µg/kg or less, country: USA³³⁴,
*including corn meal, corn silage, and
other mixed feed

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 2/4*, conc. range: 950–1,056 µg/
kg, Ø conc.: 1,003 µg/kg, country: Egypt¹⁶,
*dairy cattle feed

incidence: 38/38*, conc. range: 340–
6,020 µg/kg, country: USA³³⁴, *including
corn meal, corn silage, and other mixed
feed

FUMONISIN B₁

incidence: 14/38*, conc. range:
20–2,120 µg/kg, country: USA³³⁴,
*including corn meal, corn silage, and
other mixed feed

FUMONISIN

incidence: 1/1, conc.: ≤500 µg/kg, country:
South Africa¹⁴⁷, sa from USA

ZEARALENONE

incidence: 2/38*, conc. range: 120–310 µg/
kg, Ø conc.: 215 µg/kg, country: USA³³⁴,
*including corn meal, corn silage, and
other mixed feeds

incidence: 35/275, conc. range: 140.00–
960.00 µg/kg, country: Hungary/USA³⁴⁴, sa
from Hungary

Penicillium* Toxins*PR TOXIN**

incidence: 29/38*, conc. range: 50–260 µg/
kg, country: USA³³⁴, *including corn meal,
corn silage, and other mixed feeds

Feed (developing pig) see Feed
(pig)

Feed (dog) may contain the following
mycotoxins:

Aspergillus* Toxins*AFLATOXICOL**

incidence: 9/19, Ø conc.: 0.30 µg/kg,
country: Mexico³⁹⁵, *of all sa?

AFLATOXIN B₁

incidence: 3/45, conc. range: 15–25 µg/kg,
Ø conc.: 19 µg/kg, country: Brazil⁴

incidence: 15/19, conc. range: ≤39.7 µg/kg,
Ø conc.: 5.0 µg/kg, country: Mexico³⁹⁵, *of
all sa?

incidence: 8/9, conc. range: 222.8–
579 µg/kg, Ø conc.: 529.6 µg/kg, country:
USA⁵³⁴

AFLATOXIN B₂

incidence: 1/45, conc.: 12 µg/kg, country:
Brazil⁴

incidence: 5/19, Ø conc.: 0.07 µg/kg,
country: Mexico³⁹⁵, *of all sa?

incidence: 7/9, conc. range: 16–19 µg/kg,
Ø conc.: 18.6 µg/kg, country: USA⁵³⁴

AFLATOXIN G₁

incidence: 12/19, Ø conc.: 0.05 µg/kg,
country: Mexico³⁹⁵, *of all sa?

AFLATOXIN G₂

incidence: 4/19, Ø conc.: 0.03 µg/kg,
country: Mexico³⁹⁵, *of all sa?

AFLATOXIN M₁

incidence: 12/19, Ø conc.: 2 µg/kg,
country: Mexico³⁹⁵, *of all sa?

AFLATOXIN M₂

incidence: 17/19, Ø conc.: 0.14 µg/kg,
country: Mexico³⁹⁵, *of all sa?

AFLATOXIN P₁

incidence: 11/19, conc. range: ≤12.52 µg/
kg, Ø conc.: 1.16 µg/kg, country:
Mexico³⁹⁵, *of all sa?

AFLATOXINS (TOTAL)

incidence: 3/18, conc. range: ≤20 µg/kg,
country: Turkey³⁴⁰

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 2*/35, conc. range: 1.1–1.3 µg/
kg, Ø conc.: 1.2 µg/kg, country: UK⁴², *in
complete mix–paper bag

incidence: 1/2*, conc.: 13.12 µg/kg,
country: Poland/Austria³⁵⁰, sa from both
countries, *dry dog food

incidence: 5/10*, Ø conc.: 0.57 µg/kg,
country: Poland/Austria³⁵⁰, sa from both
countries, *canned dog food

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 2/167*, conc. range: 14–15 µg/
kg, Ø conc.: 14.5 µg/kg, country: Finland⁶²,
sa imported?, *different kinds of sa

incidence: 1/1, conc.: 300 µg/kg, country:
USA⁷¹

FUMONISIN B₁

incidence: 1*/35, conc.: 105 µg/kg,
country: UK⁴², *in complete breakfast-box

incidence: 2/2, conc. range: 820–1,410 µg/
kg, Ø conc.: 1,120 µg/kg, country: USA¹⁵⁴,
*dry dog food

incidence: 2/2*, conc. range: 112–222 µg/
kg, Ø conc.: 167 µg/kg, country: USA⁴⁹⁰,
*dry dog feed

FUMONISIN B₂

incidence: 1*/35, conc.:
30 µg/kg, country: UK⁴², *in complete
breakfast-box

incidence: 2/2, conc. range:
102–144 µg/kg, Ø conc.: 123 µg/kg,
country: US¹⁵⁴, *dry dog food

HT-2 TOXIN

incidence: 1/167*, conc.: 12 µg/kg,
country: Finland⁶², sa imported?,
*different kinds of sa

DIACETOXYSCIRPENOL

incidence: 1/167*, conc.: 6 µg/kg, country:
Finland⁶², sa imported?, *different kinds
of sa

T-2 TOXIN

incidence: 1/167*, conc.: 37 µg/kg,
country: Finland⁶², sa imported?,
*different kinds of sa

Penicillium* Toxins*PENITREM A**

incidence: 1/1*, conc.: 16,300 µg/kg,
country: Norway/Sweden⁴⁶¹,
sa of unknown origin, *dog
sausage

PENITREM B

incidence: 1/1*, conc.: 4,200 µg/kg,
country: Norway/Sweden⁴⁶¹, sa of
unknown origin, *dog sausage

PENITREM D

incidence: 1/1*, conc.: 6,500 µg/kg,
country: Norway/Sweden⁴⁶¹, sa of
unknown origin, *dog sausage

PENITREM E

incidence: 1/1*, conc.: 1,400 µg/kg,
country: Norway/Sweden⁴⁶¹, sa of
unknown origin, *dog sausage

PENITREM F

incidence: 1/1*, conc.: 2,900 µg/kg,
country: Norway/Sweden⁴⁶¹, sa of
unknown origin, *dog sausage

ROQUEFORTINE C

incidence: 1/1*, conc.: pr, country:
Norway/Sweden⁴⁶¹, sa of unknown origin,
*dog sausage

Feed (duck) may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 2/3, conc. range: 20–50 µg/kg,
Ø conc.: 35 µg/kg, country: Australia¹²¹

incidence: 3/3*, conc. range: tr–9 µg/kg,
country: USA⁴¹³, *lethal to ducks, poultry
chicks, and turkey poult

AFLATOXINS (TOTAL)

incidence: 7/10, Ø conc.: 980 µg/kg,
country: India⁴³⁸

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 3/3*, conc. range: 700–1,700 µg/
kg, Ø conc.: 1,033.3 µg/kg, country:
USA⁴¹³, *lethal to ducks, poultry chicks,
and turkey poult

FUMONISIN B₁

incidence: 3/3*, conc. range:
1,000–3,000 µg/kg, country: USA⁴¹³,
*lethal to ducks, poultry chicks, and
turkey poult

FUSARIC ACID

incidence: 3/3*, conc. range: 1,820–
2,180 µg/kg, Ø conc.: 2,046.6 µg/kg,
country: USA⁴¹³, *lethal to ducks, poultry
chicks, and turkey poult

ZEARALENONE

incidence: 3/3*, conc. range: 50–100 µg/
kg, Ø conc.: 73.3 µg/kg, country: USA⁴¹³,
*lethal to ducks, poultry chicks, and
turkey poult

Feed (fish) may contain the following
mycotoxins:

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 3/167*, conc. range: 1–60 µg/
kg, Ø conc.: 33 µg/kg, country: Finland⁶²,
sa imported?, *different kinds of sa

HT-2 TOXIN

incidence: 2/167*, conc. range: 10–90 µg/
kg, Ø conc.: 50 µg/kg, country: Finland⁶²,
sa imported?, *different kinds of sa

DIACETOXYSCIRPENOL

incidence: 1/167*, conc.: 41 µg/kg,
country: Finland⁶², sa imported?,
*different kinds of sa

T-2 TOXIN

incidence: 3/167*, conc. range: 206–705 µg/
kg, Ø conc.: 440 µg/kg, country: Finland⁶²,
sa imported?, *different kinds of sa

Feed (gluten) may contain the
following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 6/6, conc. range: 6.3–18.6 µg/
kg, Ø conc.: 12 µg/kg, country: Japan/
Korea/Brazil/Nepal/China¹⁴¹, 1 sa from
USA, others of unknown origin

incidence: 33/94, conc. range: 5–200 µg/
kg, Ø conc.: 55.3 µg/kg, country: Egypt³⁹⁷

Fusarium* Toxins*FUMONISIN B₁**

incidence: 6/6, conc. range: 300–2,400 µg/
kg, Ø conc.: 1,100 µg/kg, country: Japan/
Korea/Brazil/Nepal/China¹⁴¹, 1 sa from
USA, others of unknown origin

FUMONISIN B₂

incidence: 3/6, conc. range: 800–8,500 µg/
kg, Ø conc.: 3,700 µg/kg, country: Japan/
Korea/Brazil/Nepal/China¹⁴¹, 1 sa from
USA, others of unknown origin

see also Maize gluten

Feed (goat) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 1/1, conc.: 510–2,000 µg/kg, country: Australia²¹

Feed (grower) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/8*, conc. range: 100–250 µg/kg (1 sa), 1,000 µg/kg (2 sa), country: India⁴⁹⁵, *poultry feedstuff

incidence: 8/22*, conc. range: 250 µg/kg (7 sa), 1,000 µg/kg (1 sa), country: India⁴⁹⁶, *poultry feedstuff

Feed (hen) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B + G)

incidence: 4/15, conc. range: 2–10 µg/kg, country: France⁴⁵

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/8*, conc. range: 0.50–0.55 µg/kg, country: Mexico/Spain²⁰, sa from Spain, *egg-laying hen feed

Feed (horse) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/5, conc. range: 80.0–150.0 µg/kg, country: India³⁸⁶

incidence: ?/20, conc. range: 158–746 µg/kg, country: Thailand⁵⁸⁴

AFLATOXIN B₂

incidence: ?/20, conc. range: tr–31 µg/kg, country: Thailand⁵⁸⁴

AFLATOXINS (TOTAL)

incidence: 2/20, conc. range: ≤14 µg/kg, country: Turkey³⁴⁰

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/1, conc.: 20 µg/kg, country: Canada⁹²

Fusarium Toxins

FUMONISIN B₁

incidence: 3/3, conc. range: 55,200–70,000 µg/kg, Ø conc.: 60,000 µg/kg, country: Italy¹³⁸

incidence: 14/20, conc. range: 400–23,600 µg/kg, Ø conc.: 3,500 µg/kg, country: Spain¹⁵⁵

incidence: ?/5, conc. range: <100–37,000 µg/kg, country: USA¹⁵⁸

incidence: 2/17*, conc. range: 108.0–105.0 µg/kg, Ø conc.: 106.5 µg/kg, country: Argentina¹⁸⁴, *race horse feeding (oats)

incidence: 1/5, conc. range: 560 µg/kg, country: India³⁸⁶

incidence: 5/5*, conc. range: 2,150–10,480 µg/kg, Ø conc.: 6,048 µg/kg, country: Brazil⁴¹⁴, *different kinds of feed sa

FUMONISIN B₂

incidence: 3/3, conc. range: 13,800–16,300 µg/kg, Ø conc.: 14,600 µg/kg, country: Italy¹³⁸

incidence: 1/20, conc.: 300 µg/kg, country: Spain¹⁵⁵

incidence: 5/5*, conc. range: 740–4,060 µg/kg, Ø conc.: 2,084 µg/kg, country: Brazil⁴¹⁴, *different kinds of feed sa

FUMONISIN

incidence: 3/3, conc. range: ≤ 500 $\mu\text{g}/\text{kg}$
(3 sa), country: South Africa¹⁴⁷, sa from USA

Feed (layer) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 15/15, conc. range:
65.0–150.0 $\mu\text{g}/\text{kg}$, country: India³⁸⁶

incidence: 9/16*, conc. range: 100–500 $\mu\text{g}/\text{kg}$
(6 sa), 500–1,000 $\mu\text{g}/\text{kg}$ (1 sa), 1,100–
3,000 $\mu\text{g}/\text{kg}$ (2 sa), country: India⁴⁹⁵,
*poultry feedstuff

incidence: 15/34*, conc. range: 250 $\mu\text{g}/\text{kg}$
(9 sa), 500 $\mu\text{g}/\text{kg}$ (5 sa), 1,000 $\mu\text{g}/\text{kg}$ (1 sa),
country: India⁴⁹⁶, *poultry feedstuff

AFLATOXIN

incidence: 7*/7**, conc. range: ≤ 30 $\mu\text{g}/\text{kg}$
(4 sa), 31–100 $\mu\text{g}/\text{kg}$ (3 sa), country:
India⁵¹⁵, *all sa contained aflatoxin,
**poultry feed

incidence: 6*/6**, conc. range: ≤ 30 $\mu\text{g}/\text{kg}$
(5 sa), 31–100 $\mu\text{g}/\text{kg}$ (1 sa), country:
India⁵¹⁵, *all sa contained aflatoxin,
**poultry feed

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 37/52, conc. range: 1.5–5 $\mu\text{g}/\text{kg}$
(23 sa), 5–10 $\mu\text{g}/\text{kg}$ (7 sa), 10–15 $\mu\text{g}/\text{kg}$ (3
sa), 15–20 $\mu\text{g}/\text{kg}$ (2 sa), ≤ 46.8 $\mu\text{g}/\text{kg}$ (2 sa),
country: Turkey⁵³⁵

Fusarium* Toxins*FUMONISIN B₁**

incidence: 13/15, conc. range:
80–8,500 $\mu\text{g}/\text{kg}$, country: India³⁸⁶

Feed (mice) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXINS (B + G)**

incidence: 2/12, conc. range: 1–20 $\mu\text{g}/\text{kg}$,
country: France⁴⁵

Feed (mice and rat) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN**

incidence: 2/2, conc. range: > 200 $\mu\text{g}/\text{kg}$
(2 sa), country: India³⁸⁰

Fusarium* Toxins*FUMONISIN B₁**

incidence: 1/1, conc.: 6,000 $\mu\text{g}/\text{kg}$,
country: USA⁵⁸

Feed (mink) may contain the following mycotoxins:

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 2/167*, conc. range:
32–47 $\mu\text{g}/\text{kg}$, \emptyset conc.: 39.5 $\mu\text{g}/\text{kg}$, country:
Finland⁶², sa imported?, *different kinds
of sa

DIACETOXYSCIRPENOL

incidence: 2/167*, conc. range: 155–230 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 192.5 $\mu\text{g}/\text{kg}$, country: Finland⁶²,
sa imported?, *different kinds of sa

T-2 TOXIN

incidence: 2/167*, conc. range:
23–109 $\mu\text{g}/\text{kg}$, \emptyset conc.: 66 $\mu\text{g}/\text{kg}$, country:
Finland⁶², sa imported?, *different kinds
of sa

Feed (ostrich) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 3/3*, conc. range: 1–5 µg/kg,
 Ø conc.: 3 µg/kg, country: USA⁴¹³,
 *suspect toxic to ostrich chicks

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 3/3*, conc. range: 330–640 µg/
 kg, Ø conc.: 463.3 µg/kg, country: USA⁴¹³,
 *suspect toxic to ostrich chicks

FUMONISIN B₁

incidence: 3/3*, conc. range: <5,000 µg/kg,
 country: USA⁴¹³, *suspect toxic to ostrich
 chicks

FUSARIC ACID

incidence: 3/3*, conc. range: 750–980 µg/
 kg, Ø conc.: 866.7 µg/kg, country: USA⁴¹³,
 *suspect toxic to ostrich chicks

ZEARALENONE

incidence: 3/3*, conc. range: 110–140 µg/
 kg, Ø conc.: 126.7 µg/kg, country: USA⁴¹³,
 *suspect toxic to ostrich chicks

Feed (pig) may contain the following
 mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/1, conc.: 400 µg/kg, country:
 Australia¹²¹

incidence: 7/16, conc. range: 1.7–12.3 µg/
 kg, Ø conc.: 6.8 µg/kg, country:
 Colombia¹²⁵

incidence: 14/121, conc. range: 10 µg/kg
 (3 sa), 20 µg/kg (1 sa), 40 µg/kg (2 sa),
 50 µg/kg (1 sa), 500 µg/kg (1 sa),
 1,000 µg/kg (5 sa), 2,000 µg/kg (1 sa),
 country: Poland¹⁷⁰

incidence: 146/163, conc. range: ≤25 µg/kg
 (36 sa), 26–50 µg/kg (45 sa), 51–100 µg/kg
 (35 sa), 101–200 µg/kg (15 sa),

201–500 µg/kg (11 sa), 501–1,000 µg/kg
 (3 sa), 1,231 µg/kg (1 sa), Ø conc.:
 91.34 µg/kg, country: India²⁴⁷

incidence: 7/70, conc. range: <5 µg/kg (2
 sa), 6–20 µg/kg (2 sa), 51–100 µg/kg (1
 sa), > 100 µg/kg (2), country: UK²⁶⁷

incidence: 4/4, conc. range: 270–
 6,000 µg/kg, Ø conc.: 2,250 µg/kg,
 country: India²²¹

incidence: 6/15, conc. range: pr, country:
 UK⁵⁴⁵

incidence: ?/20, conc. range: 619–678 µg/
 kg, country: Thailand⁵⁸⁴

AFLATOXIN B₂

incidence: 1/16, conc.: 1.1 µg/kg, country:
 Colombia¹²⁵

incidence: 115/163, conc. range: nc,
 Ø conc.: 18.91 µg/kg, country: India²⁴⁷

incidence: ?/20, conc. range: 254–2,117 µg/
 kg, country: Thailand⁵⁸⁴

AFLATOXIN B

incidence: 19/30, conc. range: ≤10 µg/kg
 (7 sa), >10–≤100 µg/kg (8 sa), >100 µg/kg
 (4 sa)*, country: France⁴⁶, *125–300 µg/kg
 AFB₁

AFLATOXINS (B₁ + B₂)

incidence: 1/2*, conc.: pr, country:
 UK⁹³, *compound pig feed

AFLATOXINS (B + G)

incidence: 3/12, conc. range: 10–50 µg/kg,
 country: France⁴⁵

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 14/90, conc.: range: ~ < 50 µg/
 kg, country: Poland⁸⁴

AFLATOXINS (TOTAL)

incidence: 3/6, Ø conc.: 593 µg/kg,
 country: India⁴³⁸

AFLATOXINS

incidence: 1/12, conc.: 51–500 µg/kg,
 country: Australia²¹

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 5/40*, conc. range: <36 µg/kg, Ø conc.: 30 µg/kg, country: Argentina/Brazil¹, sa from Argentina, *feed ec composition for pigs: corn, sunflower pellets or soy pellets, vitamins or growth regulators, essential amino acids (lysine, methionine), coccidiostats

incidence: 8/90, conc. range: 10–50 µg/kg, country: Poland⁸⁴

incidence: 27/39, conc. range: 1–5 µg/kg (8 sa), 5–20 µg/kg (6 sa), >20 µg/kg (13 sa), country: Czechoslovakia¹¹⁰

incidence: 4/40, conc. range: ≤36 µg/kg, Ø conc.: 30 µg/kg, country: Argentina⁵¹⁴

incidence: 8/26*, conc. range: 36–120 µg/kg, country: Brazil/Argentina⁵⁶³, sa from Brazil, *finished swine feed

incidence: 23/25*, conc. range: ≤68 µg/kg, Ø conc.: 26 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for pigs

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 1/167*, conc.: 120 µg/kg, country: Finland⁶², sa imported?, *different kinds of sa

incidence: 3/3, conc. range: 2,000–9,700 µg/kg, Ø conc.: 5,633 µg/kg, country: USA⁷¹

incidence: 56/60, conc. range: 1,000–20,000 µg/kg, country: Austria¹⁴⁹

incidence: 3/3*, conc. range: 1,700–8,000 µg/kg, Ø conc.: 4,100 µg/kg, country: Argentina²¹³, *growing, fattening, and finishing ration

incidence: 365/365*, conc. range: 0–100 µg/kg (47 sa), 101–500 µg/kg (246 sa), 501–1,000 µg/kg (37 sa), ≤2,100 µg/kg (35 sa), country: Austria⁴⁹¹, *sow feed

incidence: 25/25*, conc. range: ≤155 µg/kg, Ø conc.: 68 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for pigs

FUMONISIN B₁

incidence: 1/2*, conc.: 5,000 µg/kg, country: USA⁵⁸, *mixed feed

incidence: 42/47, conc. range: 400–11,600 µg/kg, Ø conc.: 2,400 µg/kg, country: Spain¹⁵⁵

FUMONISINS (B₁ + B₂)

incidence: 8/9*, conc. range: 6,000–33,000 µg/kg, Ø conc.: 14,750 µg/kg, country: USA¹⁴⁴, *control herds (for detailed information please see the article)

incidence: 12/12*, conc. range: 7,000–73,000 µg/kg, Ø conc.: 31,000 µg/kg, country: USA¹⁴⁴, *case herds (for detailed information please see the article)

FUSARENON X

incidence: 3/25*, conc. range: ≤45 µg/kg, Ø conc.: 28 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for pigs

HT-2 TOXIN

incidence: 1/167*, conc.: 207 µg/kg, country: Finland⁶², sa imported?, *different kinds of sa

incidence: 1/25*, conc.: 126 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for pigs

NIVALENOL

incidence: 21/25*, conc. range: ≤235 µg/kg, Ø conc.: 86 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for pigs

DIACETOXYSCIRPENOL

incidence: 5/13, conc. range: pr, country: South Africa⁴⁴

incidence: 1/167*, conc.: 60 µg/kg, country: Finland⁶², sa imported?, *different kinds of sa

T-2 TOXIN

incidence: 2/23 overall*, conc. range: 4,100–5,800 µg/kg, Ø conc.: 4,950 µg/kg, country: Hungary⁵⁰, *different kinds of sa

incidence: 1/167*, conc.: 490 µg/kg, country: Finland⁶², sa imported?, *different kinds of sa

incidence: 6/25*, conc. range: ≤3,852 µg/kg, Ø conc.: 901 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for pigs

T-2 TOXIN + HT-2 TOXIN

incidence: ?/16, conc. range: 29.98 µg/kg, country: Croatia⁶¹¹

TRICHOTHECENES

incidence: 3/13, conc. range: pr, country: South Africa⁴⁴

ZEARALENONE

incidence: 15/395 overall*, conc. range: tr–109 µg/kg, country: USA¹¹⁹, *different kinds of sa

incidence: 56/60, conc. range: 50–1,600 µg/kg, country: Austria¹⁴⁹

incidence: 3/3*, conc. range: 100–50,000 µg/kg, Ø conc.: 16,866.6 µg/kg, country: USA¹⁷³, *sa involved in porcine hyperestrogenism or internal hemorrhaging

incidence: 2/4*, conc. range: 243–300 µg/kg, Ø conc.: 271.5 µg/kg, country: Taiwan/USA²²¹, sa from USA and South Africa, *sow feed prepared from maize

incidence: 1/7*, conc.: 1,203 µg/kg, country: Taiwan/USA²²¹, sa from USA and South Africa, *developing pig feed prepared from maize

incidence: 237/237*, conc. range: 0–10 µg/kg (168 sa), 11–50 µg/kg (58 sa), 51–100 µg/kg (10 sa), 200 µg/kg (1 sa), country: Austria⁴⁹¹, *sow feed

incidence: 16/62*, conc. range: 54–403 µg/kg, Ø conc.: 161.7 µg/kg, country: Poland⁵⁹⁷, *mixed feeds for swine

incidence: 8/25*, conc. range: ≤77 µg/kg, Ø conc.: 32 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for pigs

Penicillium* Toxins*CITRININ**

incidence: 1/2*, conc.: 8,600 µg/kg, country: UK⁹³, *compound pig feed

Feed (poultry) may contain the following mycotoxins:

Alternaria* Toxins*ALTENUENE**

incidence: 3/20, Ø conc.: 140 µg/kg, country: Egypt⁸⁹

ALTERNARIOL MONOMETHYL ETHER

incidence: 4/20, Ø conc.: 270 µg/kg, country: Egypt⁸⁹

ALTERTOXIN-I

incidence: 3/20, Ø conc.: 880 µg/kg, country: Egypt⁸⁹

TENUAZONIC ACID

incidence: 8/20, Ø conc.: 295.7 µg/kg, country: Egypt⁸⁹

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 8/202, conc. range: <10–20 µg/kg, country: UK³⁰

incidence: 2/42, conc. range: <20 µg/kg (1 sa), 20–100 µg/kg (1 sa), country: South Africa⁴⁴

incidence: 63/130, conc. range: 10–123 µg/kg, Ø conc.: 27.3 µg/kg, country: Argentina⁷⁸

incidence: 50/144, conc. range: <5–100 µg/kg, country: South Africa⁷⁹

incidence: 14/14, conc. range: 0.38–108.61 µg/kg, Ø conc.: 37.88 µg/kg, country: India⁹⁸

incidence: 12/30, conc. range: 1.5–23.2 µg/kg, Ø conc.: 6.9 µg/kg, country: Colombia¹²⁵

incidence: 1/59, conc.: 30 µg/kg, country: Poland¹⁷⁰

incidence: 55/120, Ø conc.: 14–174 µg/kg, country: Argentina²¹⁵

incidence: 41/300, conc. range: 17–197 µg/kg, country: Argentina²⁴³

incidence: 1,108/1,368, conc. range: ≤25 µg/kg (371 sa), 26–50 µg/kg (212 sa), 51–100 µg/kg (224 sa), 101–200 µg/kg (134 sa), 201–500 µg/kg (112 sa), 501–1,000 µg/kg (45 sa), 1,001–1,500 µg/kg (7 sa), 1,501–2,000 µg/kg (1 sa), ≤2,410 µg/kg (2 sa), Ø conc.: 110.42 µg/kg, country: India²⁴⁷

incidence: 14/20*, conc. range: 46.1–259.1 µg/kg, Ø conc.: 118.3 µg/kg, country: India²⁵³, *compounded poultry feed

incidence: 8/127, conc. range: <5 µg/kg (1 sa), 6–20 µg/kg (6 sa), 21–50 µg/kg (1 sa), country: UK²⁶⁷

incidence: 2/11*, conc. range: 20 µg/kg, Ø conc.: 20 µg/kg, country: Ireland²⁷⁹, *poultry feeds containing peanut

incidence: 1/3, conc.: 640 µg/kg, country: India³²¹

incidence: 1/10, conc.: 1.4 µg/kg, country: Morocco⁴²³

incidence: 50/101, conc. range: ≤160 µg/kg, Ø conc.: 14.9 µg/kg, country: Bangladesh/UK⁴²⁸, sa from Bangladesh

incidence: 8/41*, conc. range: 20–50 µg/kg (3 sa), 51–200 µg/kg (1 sa), ≤5,625 µg/kg (4 sa), country: Morocco/USA⁴²⁹, sa from Morocco, *pellets

incidence: 4/25*, conc. range: 20–50 µg/kg (4 sa), country: Morocco/USA⁴²⁹, sa from Morocco, *crumbles

incidence: 5/33*, conc. range: 20–50 µg/kg (1 sa), 51–200 µg/kg (4 sa), country: Morocco/USA⁴²⁹, sa from Morocco, *mash

incidence: 320/480, conc. range: 1.2–17.5 µg/kg, country: Brazil/Argentina⁵⁴⁰, sa from Brazil

incidence: 4/15*, conc. range: 1–30 µg/kg (1 sa), 31–100 µg/kg (1 sa), 201–300 µg/kg (2 sa), country: India⁵⁸⁰, *ready to use poultry feed

incidence: 14[?]/21, conc. range: 0.05–5.38 µg/kg, Ø conc.: 1.26 µg/kg, country: Morocco/Spain⁶⁰¹, sa from Morocco

AFLATOXIN B₂

incidence: 1/30, conc.: 2.0 µg/kg, country: Colombia¹²⁵

incidence: 894/1,368, Ø conc.: 16.57 µg/kg, country: India²⁴⁷

incidence: 5/20*, conc. range: 46.1–125.9 µg/kg, Ø conc.: 99.3 µg/kg, country: India²⁵³, *compounded poultry feed

incidence: 14[?]/21, conc. range: 0.03–0.58 µg/kg, Ø conc.: 0.18 µg/kg, country: Morocco/Spain⁶⁰¹, sa from Morocco

AFLATOXINS (B₁ + B₂)

incidence: 3/3*, conc.: 6–20 µg/kg, (1 sa), ≤71 µg/kg, (2 sa), country: Guatemala³⁷⁵, *poultry feed (concentrate)

AFLATOXIN B

incidence: 34/60, conc. range: ≤10 µg/kg (17 sa), >10–≤100 µg/kg (13 sa), >100 µg/kg (4 sa)*, country: France⁴⁶, *125–225 µg/kg AFB₁

AFLATOXINS (G₁ + G₂)

incidence: 30/300, conc. range: pr, country: Argentina²⁴³

AFLATOXIN

incidence: 4/10, conc. range: 11–30 µg/kg (3 sa), 31–100 µg/kg (1 sa), country: India/UK³¹¹, sa from India

incidence: 23/23, conc. range: <30 µg/kg (4 sa), >30 µg/kg (3 sa), > 200 µg/kg (10 sa), >600 µg/kg (5 sa), >1,750 µg/kg (1 sa), country: India³⁸⁰

incidence: 360/1,174*, conc. range: 50 µg/kg (197 sa), 51–200 µg/kg (96 sa), 201–2,000 µg/kg (67 sa), country: Egypt/USA⁴¹⁵, sa from USA?

AFLATOXINS (B₁ + B₂ + G₁ + G₂)
incidence: 3/42, conc. range: <20 µg/kg (1 sa), 20–100 µg/kg (2 sa), country: South Africa⁴⁴

incidence: 2/54, conc. range: ≈ <50 µg/kg, country: Poland⁸⁴

AFLATOXINS
incidence: 8/93, conc. range: 5–50 µg/kg (5 sa), 51–500 µg/kg (2 sa), 510–≤2,000 µg/kg (1 sa), country: Australia²¹

incidence: 2/4*, conc. range: 210–310 µg/kg, Ø conc.: 260 µg/kg, country: USA²⁰⁸, *in part moldy

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 6/40*, conc. range: 25–30 µg/kg, Ø conc.: 27 µg/kg, country: Argentina/Brazil¹, sa from Argentina, *feed ec composition for poultry: corn, sunflower pellets or soy pellets, vitamins or growth regulators, essential amino acids (lysine, methionine), coccidiostats

incidence: 6/14, conc. range: 0.42–0.58 µg/kg, country: Mexico/Spain²⁰, sa from Spain

incidence: 6/203, conc. range: <25–150 µg/kg, country: UK³⁰

incidence: 1/54, conc.: 10–50 µg/kg, country: Poland⁸⁴

incidence: 31/47, conc. range: 1–5 µg/kg (13 sa), 5–20 µg/kg (8 sa), >20 µg/kg (10 sa), country: Czechoslovakia¹¹⁰

incidence: 47/50*, conc. range: 2.558–<5 µg/kg (5 sa), 5–10 µg/kg (14 sa), 10–20 µg/kg (21 sa), 20–31.978 µg/kg (7 sa), country: Venezuela/Spain⁴⁶⁶, sa from Venezuela, *concentrated poultry feed

incidence: 6/40, conc. range: ≤30 µg/kg, Ø conc.: 27 µg/kg, country: Argentina⁵¹⁴

incidence: 25/27*, conc. range: ≤68 µg/kg, Ø conc.: 30 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for poultry

PATULIN

incidence: 10/144, conc. range: pr, country: South Africa⁷⁹

Fusarium Toxins

DEOXYNIVALENOL
incidence: 8/120, Ø conc.: 124 µg/kg, country: Argentina²¹⁵

incidence: 25/300, conc. range: 240–410 µg/kg, country: Argentina²⁴³

incidence: 49/277, conc. range: <2–500 µg/kg, Ø conc.: 211.2 µg/kg, country: Saudi Arabia³⁸⁹

incidence: 28/50*, conc. range: 64–1,230 µg/kg, Ø conc.: 303 µg/kg, country: Slovakia/Austria⁴²⁰, sa from Slovakia, *poultry (chicken) feed mixtures

incidence: 188/188, conc. range: 0–100 µg/kg (9 sa), 101–500 µg/kg (84 sa), 501–1,000 µg/kg (39 sa), ≤4,200 µg/kg (56 sa), country: Austria⁴⁹¹

incidence: 5/5, conc. range: 413–535 µg/kg, Ø conc.: 485 µg/kg, country: Austria⁵⁷⁶

incidence: 11/100*, conc. range: 288–2,800 µg/kg, Ø conc.: 997.1 µg/kg, country: Poland⁵⁹⁷, *mixed feeds for poultry

incidence: 26/27*, conc. range: ≤328 µg/kg, Ø conc.: 153 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for poultry

3-ACETYLDEOXYNIVALENOL
incidence: 3/50*, conc. range: 207–1,497 µg/kg, Ø conc.: 858.3 µg/kg, country: Slovakia/Austria⁴²⁰, sa from Slovakia, *poultry (chicken) feed mixtures

15-ACETYLDEOXYNIVALENOL

incidence: 2/50*, conc. range: 130–229 µg/kg, Ø conc.: 179.5 µg/kg, country: Slovakia/Austria⁴²⁰, sa from Slovakia, *poultry (chicken) feed mixtures

FUMONISIN B₁

incidence: 27/32, conc. range: 200–1,000 µg/kg (21 sa), ≤4,000 µg/kg (6 sa), country: South Africa⁴⁴

incidence: 5/14, conc. range: 20–260 µg/kg, Ø conc.: 100 µg/kg, country: India⁹⁸

incidence: 6/22, conc. range: ≤480 µg/kg, Ø conc.: 235 µg/kg, country: Switzerland¹⁴⁸

incidence: 2/2, conc. range: 1,100–1,400 µg/kg, Ø conc.: 1,300 µg/kg, country: Spain¹⁵⁵

incidence: 116/120, Ø conc.: 136–4,270 µg/kg, country: Argentina²¹⁵

incidence: 42/50, conc. range: <1,000 µg/kg (11 sa), 1,000–10,000 µg/kg (18 sa), 11,000–20,000 µg/kg (10 sa), ≤28,000 µg/kg (3 sa), country: India/USA³⁹¹, sa from India

incidence: 4/6*, conc. range: 3,010–10,650 µg/kg, Ø conc.: 5,307.5 µg/kg, country: Brazil⁴¹⁴, *different kinds of feed sa

incidence: 49/50, conc. range: 43–798 µg/kg, Ø conc.: 235 µg/kg, country: Slovakia/Austria⁴³⁰, sa from Slovakia

incidence: 469/480, conc. range: 1,500–5,500 µg/kg, country: Brazil/Argentina⁵⁴⁰, sa from Brazil

incidence: 11/100*, conc. range: 288–2800 µg/kg, Ø conc.: 997.1 µg/kg, country: Poland⁵⁹⁷, *mixed feeds for poultry

FUMONISIN B₂

incidence: 2/22, conc. range: ≤115 µg/kg, Ø conc.: 90 µg/kg, country: Switzerland¹⁴⁸

incidence: 116/120, Ø conc.: 38.5–1,710 µg/kg, country: Argentina²¹⁵

incidence: 4/6*, conc. range: 1,160–3,630 µg/kg, Ø conc.: 1,875 µg/kg, country: Brazil⁴¹⁴, *different kinds of feed sa

incidence: 42/50, conc. range: 26–362 µg/kg, Ø conc.: 87 µg/kg, country: Slovakia/Austria⁴³⁰, sa from Slovakia

FUMONISIN B₃

incidence: 116/120, Ø conc.: 27.5–955 µg/kg, country: Argentina²¹⁵

FUSARENON X

incidence: 1/277, conc.: 500 µg/kg, country: Saudi Arabia³⁸⁹

incidence: 5/27*, conc. range: ≤24 µg/kg, Ø conc.: 18 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for poultry

HT-2 TOXIN

incidence: 1/277, conc.: 18.8 µg/kg, country: Saudi Arabia³⁸⁹

incidence: 38/50*, conc. range: 3–173 µg/kg, Ø conc.: 18 µg/kg, country: Slovakia/Austria⁴²⁰, sa from Slovakia, *poultry (chicken) feed mixtures

incidence: 6/27*, conc. range: ≤94 µg/kg, Ø conc.: 70 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for poultry

MONILIFORMIN

incidence: 26/50, conc. range: 42–1,214 µg/kg, Ø conc.: 217 µg/kg, country: Slovakia/Austria⁴³⁰, sa from Slovakia

NEOSOLANIOL

incidence: 1/277, conc.: 100 µg/kg, country: Saudi Arabia³⁸⁹

NIVALENOL

incidence: 1/277, conc.: 3.1 µg/kg, country: Saudi Arabia³⁸⁹

incidence: 25/27*, conc. range: ≤221 µg/kg, Ø conc.: 104 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *mixed feed for poultry

DIACETOXYSCIRPENOL

incidence: 10/50*, conc. range: 3–5 µg/kg,
 Ø conc.: 4 µg/kg, country: Slovakia/
 Austria⁴²⁰, sa from Slovakia, *poultry
 (chicken) feed mixtures

T-2 TOXIN

incidence: 45/50*, conc. range: 1–130 µg/
 kg, Ø conc.: 13 µg/kg, country: Slovakia/
 Austria⁴²⁰, sa from Slovakia, *poultry
 (chicken) feed mixtures

incidence: 2/100*, conc. range: 240–
 750 µg/kg, Ø conc.: 495.0 µg/kg, country:
 Poland⁵⁹⁷, *mixed feeds for poultry

incidence: 3/27*, conc. range: ≤510 µg/kg,
 Ø conc.: 295 µg/kg, country: Lithuania/
 Sweden⁶⁰⁷, sa from Lithuania, *mixed feed
 for poultry

incidence: 1/2, conc.: 130 µg/kg, country:
 India⁶⁰⁹

T-2 TOXIN + HT-2 TOXIN

incidence: ?/5, conc. range: 16.04 µg/kg,
 country: Croatia⁶¹¹

TRICHOTHECENES

incidence: 13/37, conc. range: pr, country:
 South Africa⁴⁴

incidence: 1/144, conc.: pr, country: South
 Africa⁷⁹

ZEARALENONE

incidence: 1/14, conc.: 0.53 µg/kg,
 country: Mexico/Spain²⁰, sa from Spain

incidence: 22/130, conc. range: 327–
 5,850 µg/kg, Ø conc.: 2,544.3 µg/kg,
 country: Argentina⁷⁸

incidence: 23/120, Ø conc.: 1,550–
 4,507 µg/kg, country: Argentina²¹⁵

incidence: 3/300, conc. range: 30–280 µg/
 kg, Ø conc.: 143.3 µg/kg, country:
 Argentina²⁴³

incidence: 44/50*, conc. range: 3–86 µg/
 kg, Ø conc.: 21 µg/kg, country: Slovakia/
 Austria⁴²⁰, sa from Slovakia, *poultry
 (chicken) feed mixtures

incidence: 31/31, conc. range: 0–10 µg/kg
 (12 sa), 11–50 µg/kg (15 sa), ≤70 µg/kg
 (4 sa), country: Austria⁴⁹¹

incidence: 13/18, conc. range:
 10.1–122 µg/kg, Ø conc.: 32.2 µg/kg,
 country: Indonesia/Austria⁵³⁶, sa from
 Indonesia

incidence: 370/480, conc. range: 100–
 7,000 µg/kg, country: Brazil/Argentina⁵⁴⁰,
 sa from Brazil

incidence: 14/100*, conc. range: 60–240 µg/
 kg, Ø conc.: 116.6 µg/kg, country:
 Poland⁵⁹⁷, *mixed feeds for poultry

incidence: 22/27*, conc. range: ≤83 µg/kg,
 Ø conc.: 27 µg/kg, country: Lithuania/
 Sweden⁶⁰⁷, sa from Lithuania, *mixed feed
 for poultry

Feed (poultry, pig) may contain the
 following mycotoxins:

***Aspergillus* Toxins**

AFLATOXIN B₁
 incidence: 2/75, conc. range: ≤10 µg/kg,
 country: France⁷⁷

***Aspergillus* and *Penicillium* Toxins**

OCHRATOXIN A
 incidence: 2/75, conc. range: ≤10 µg/kg,
 country: France⁷⁷

***Fusarium* Toxins**

ZEARALENONE
 incidence: 62/75, conc. range:
 ≤170,000 µg/kg, country: France⁷⁷

Feed (rabbit) may contain the
 following mycotoxins:

***Aspergillus* Toxins**

AFLATOXIN B₁
 incidence: 3/4, conc. range: 26–50 µg/kg
 (2 sa), 381 µg/kg (1 sa), Ø conc.:
 122.67 µg/kg, country: India²⁴⁷

AFLATOXIN B₂
incidence: 3/4, Ø conc.: 32.35 µg/kg,
country: India²⁴⁷

AFLATOXINS (B + G)
incidence: 9/18, conc. range: 9–1,500 µg/
kg, country: France⁴⁵

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 5/40*, conc. range: <28 µg/kg,
Ø conc.: 19 µg/kg, country: Argentina/
Brazil¹, sa from Argentina, *feed ec
composition for rabbits: alfalfa, sunflower
pellets or soy pellets, vitamins or growth
regulators, essential amino acids (lysine,
methionine), coccidiostats

incidence: 5/40, conc. range: ≤28 µg/kg,
Ø conc.: 19 µg/kg, country: Argentina⁵¹⁴

Fusarium Toxins

FUMONISIN B₁
incidence: 2/2*, conc. range: 100–472 µg/
kg, Ø conc.: 286 µg/kg, country: USA⁴⁹⁰,
*dry rabbit feed

Feed (rat) may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: ?/20, conc. range: tr–247 µg/kg,
country: Thailand⁵⁸⁴

AFLATOXINS (B + G)
incidence: 7/20, conc. range: 5–650 µg/kg,
country: France⁴⁵

Fusarium Toxins

FUMONISIN B₁
incidence: 1/1*, conc.: 219 µg/kg, country:
USA¹⁵⁴, *rat chow

incidence: ?/5, conc. range: 100–2,000 µg/
kg, country: USA¹⁵⁸

FUMONISIN B₂
incidence: 1/1*, conc.: <20 µg/kg, country:
USA¹⁵⁴, *rat chow

Feed (reindeer) may contain the
following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL
incidence: 1/167*, conc.: 52 µg/kg,
country: Finland⁶², sa imported?,
*different kinds of sa

HT-2 TOXIN
incidence: 1/167*, conc.: 23 µg/kg,
country: Finland⁶², sa imported ?,
*different kinds of sa

NIVALENOL
incidence: 1/167*, conc.: 10 µg/kg,
country: Finland⁶², sa imported?,
*different kinds of sa

DIACETOXYSCIRPENOL
incidence: 1/167*, conc.: 766 µg/kg,
country: Finland⁶², sa imported?,
*different kinds of sa

Feed (rodent) may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 15/21, conc. range: 0.3–3.1 µg/
kg, Ø conc.: 0.93 µg/kg, country:
Sweden⁵⁹⁵, sa from different European
manufacturers

Fusarium Toxins

DEOXYNIVALENOL
incidence: 5/21, conc. range: 100–298 µg/
kg, Ø conc.: 155.8 µg/kg, country:
Sweden⁵⁹⁵, sa from different European
manufacturers

FUMONISIN B₁

incidence: 12/12, conc. range: 32.3–663.7 µg/kg, Ø conc.: 221.6 µg/kg, country: USA⁹⁹

FUMONISIN B₂

incidence: 12/12, conc. range: 11.2–204.2 µg/kg, Ø conc.: 73.4 µg/kg, country: USA⁹⁹

FUMONISIN B₃

incidence: 11/12, conc. range: 2.6–54.7 µg/kg, Ø conc.: 20 µg/kg, country: USA⁹⁹

FUSARIC ACID

incidence: 3/3*, conc. range: 640–8,390 µg/kg, Ø conc.: 3,420 µg/kg, country: USA⁴¹³, *commercial rodent chow feed sa with *Fusarium moniliforme* cultured on corn

NIVALENOL

incidence: 1/21, conc.: 118 µg/kg, country: Sweden⁵⁹⁵, sa from different European manufacturers

ZEARALENONE

incidence: 2/5, conc. range: 19.4–26.7 µg/kg, Ø conc.: 23.1 µg/kg, country: Sweden⁵⁹⁵, sa from different European manufacturers

Feed (sheep) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 2/3, conc. range: 3–245.2 µg/kg, Ø conc.: 203.05 µg/kg?, country: India²⁴⁷

incidence: 1/1, conc.: 8,400 µg/kg, country: India³²¹

incidence: 3/11, conc. range: pr, country: UK⁵⁴⁵

incidence: 4/7, conc. range: pr, country: UK⁵⁴⁵

AFLATOXIN B₂

incidence: 2/3, Ø conc.: 19.6 µg/kg, country: India²⁴⁷

Feed (shrimp) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXINS (B₁, B₂, G₁ OR G₂)**

incidence: 57/150, conc. range: 0.003–0.651 µg/kg, country: Thailand/Japan⁴⁴⁰, sa from Thailand

Feed (starter) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 43/43*, conc. range: ≤500 µg/kg (36 sa), 600–1,000 µg/kg (2 sa), 1,500–2,000 µg/kg (5 sa), country: India⁴⁹⁵, *poultry feedstuff

incidence: 15/39*, conc. range: 250 µg/kg (10 sa), 500 µg/kg (4 sa), 1,000 µg/kg (1 sa), country: India⁴⁹⁶, *poultry feedstuff

Feed (trout) may contain the following mycotoxins:

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 4/13, conc. range: 0.4–1.9 µg/kg, Ø conc.: 0.93 µg/kg, country: Italy¹⁴

Feedstuff may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 4/123*, conc. range: 40–70 µg/kg, Ø conc.: 50 µg/kg, country: UK¹⁶⁸, *feedstuff excluding peanut meal

incidence: 18/624, conc. range: 0.5–50.0 µg/kg, Ø conc.: 10.7 µg/kg, country: Germany¹⁸⁵

incidence: 9/53, conc. range: 5.1–59.9 µg/kg, Ø conc.: 28.81 µg/kg, country: Turkey⁵⁴¹

AFLATOXIN B₂

incidence: 3/53, conc. range: 15.3–48.7 µg/kg, Ø conc.: 30.66 µg/kg, country: Turkey⁵⁴¹

AFLATOXIN G₁

incidence: 3/123*, conc. range: 40–200 µg/kg, Ø conc.: 146.7 µg/kg, country: UK¹⁶⁸, *feedstuff excluding peanut meal

incidence: 1/53, conc.: 29.3 µg/kg, country: Turkey⁵⁴¹

AFLATOXINS

incidence: 5/2,022, conc. range: ≤800 µg/kg, country: Canada¹³⁵

STERIGMATOCYSTIN

incidence: 2/123*, conc. range: pr–~3,000 µg/kg, country: UK¹⁶⁸, *feedstuff excluding peanut meal

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 1/123*, conc.: pr, country: UK¹⁶⁸, *feedstuff excluding peanut meal

incidence: 38/608, conc. range: 0.1–206.0 µg/kg, Ø conc.: 13.9 µg/kg, country: Germany¹⁸⁵

OCHRATOXINS

incidence: 3/2,022, conc. range: pr, country: Canada¹³⁵

Claviceps* Toxins*ERGOT ALKALOIDS**

incidence: 1/2,022, conc.: pr, country: Canada¹³⁵

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 13/20*, conc. range: 11–151 µg/kg, Ø conc.: 37 µg/kg, country: Finland⁹, *rapeseed, turnip, fish meal, and concentrates

incidence: 4/8* **, conc. range: 29–47 µg/kg, Ø conc.: 35 µg/kg, country: Finland⁹, *sa imported, **maize gluten and soy granules

incidence: 13/over 200*, conc. range: 25–7,400 µg/kg, Ø conc.: 1,216.9 µg/kg, country: USA²⁶⁰, sa from South Africa/USA/Zambia, *different kinds of sa

incidence: 6/6, conc. range: 20–60 µg/kg (5 sa), 1,230 µg/kg (1 sa), country: Belgium⁵⁸⁷

3-ACETYLDEOXYNIVALENOL

incidence: 2/20*, conc. range: 5–20 µg/kg, Ø conc.: 13 µg/kg, country: Finland⁹, *rapeseed, turnip, fish meal, and concentrates

incidence: 1/8* **, conc.: 15 µg/kg, country: Finland⁹, *sa imported, **maize gluten and soy granules

FUMONISIN B₁

incidence: 820/1,000* **, conc. range: ≤330,000 µg/kg, country: Italy⁵⁹⁴, sa from Europe/USA, *maize, **majority of the sa involved in ELEM, PPE, and other mycotoxicoses

FUSARIC ACID

incidence: 7/8*, conc. range: 9,740–125,740 µg/kg, Ø conc.: 35,760 µg/kg, country: Canada⁶⁶, *whole feeds (including finishing and dry sow ration as well as sow feed)

DIACETOXYSCIRPENOL

incidence: 2/over 200*, conc. range: 380–500 µg/kg, Ø conc.: 440 µg/kg, country: USA²⁶⁰, *different kinds of sa

T-2 TOXIN

incidence: 1/2,022, conc.: pr, country: Canada¹³⁵

incidence: 1/over 200*, conc.:

76 µg/kg, country: USA²⁶⁰, *different kinds of sa

TRICHOTHECENES

incidence: 23/529, conc. range: 50.0–859.0 µg/kg*, Ø conc.: 191.4 µg/kg*, country: Germany¹⁸⁵, *diacetoxyscirpenol, HT-2 toxin, monoacetoxyscirpenol, neosolaniol, T-2 toxin

ZEARALENONE

incidence: 1/20, conc.: 32 µg/kg, country: Finland⁹

incidence: 2/8* **, conc. range: 31–38 µg/kg, Ø conc.: 35 µg/kg, country: Finland⁹, *sa imported, **maize gluten and soy granules

incidence: 28/65, conc. range: 100–2,909,000 µg/kg, country: USA⁸⁸

incidence: 266/2,022, conc. range: tr–141,000 µg/kg, Ø conc.: 3,850 µg/kg, country: Canada¹³⁵

incidence: 88/641, conc. range: 1.0–1,726.0 µg/kg, Ø conc.: 41.6 µg/kg, country: Germany¹⁸⁵

see also Feed

Fenugreek Feed fenugreek may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXINS (B₁ + B₂ + G₁ + G₂)**

incidence: 2/13, conc. range: 7.5–35.2 µg/kg, Ø conc.: 21.35 µg/kg, country: Sudan⁶¹⁴

Field bean see Bean

Finished feed see Feed, finished

Finisher ration see Ration (finisher)

Finisher (broiler) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN**

incidence: 14/25, conc. range: ≤180 µg/kg, country: Nigeria¹⁰⁹

AFLATOXINS (TOTAL)

incidence: 23/28*, conc. range: ≤1.05 µg/kg, country: Kuwait⁴²¹, *poultry feed

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 17/19*, conc. range: ≤14.3 µg/kg, country: Kuwait⁴²¹, *poultry feed

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 19/19*, conc. range: 220–280 µg/kg, country: Kuwait⁴²¹, *poultry feed

FUMONISIN

incidence: 19/19*, conc. range: 220–6,000 µg/kg, Ø conc.: 3,200 µg/kg, country: Kuwait⁴²¹, *poultry feed

ZEARALENONE

incidence: 16/19*, conc. range: ≤400 µg/kg, country: Kuwait⁴²¹, *poultry feed

Finisher (pig) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN**

incidence: 1/5, conc.: 260 µg/kg, country: Nigeria¹⁰⁹

Fish Feed fish may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN**

incidence: 1/1*, conc.: ≤30 µg/kg, country: India⁵¹⁵, *poultry feed

Fish feed see Feed (fish)

Fish meal see Meal (fish)

Flaked maize see Maize flakes

Flour Feed flour may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B

incidence: 15/32, conc. range: ≤ 10 $\mu\text{g}/\text{kg}$ (7 sa), >10 – ≤ 100 $\mu\text{g}/\text{kg}$ (6 sa), >100 $\mu\text{g}/\text{kg}$ (2 sa)*, country: France⁴⁶, *180 and 225 $\mu\text{g}/\text{kg}$ AFB₁

Flour (maize) Feed maize flour may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (TOTAL)

incidence: 78/92, conc. range: ≤ 23.3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5.9 $\mu\text{g}/\text{kg}$, country: Spain⁴⁴⁶, sa from Argentina

Fusarium Toxins

FUMONISIN

incidence: 92/92, conc. range: 3,335–19,976 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8,268 $\mu\text{g}/\text{kg}$, country: Spain⁴⁴⁶, sa from Argentina

Flour (sunflower) Feed sunflower flour may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 10/15, conc. range: >10 – 20 $\mu\text{g}/\text{kg}$ (9 sa), >50 – $1,020$ $\mu\text{g}/\text{kg}$ (1 sa), country: Cuba¹⁰⁶

Flour (wheat) Feed wheat flour may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B

incidence: 7/25, conc. range: ≤ 10 $\mu\text{g}/\text{kg}$ (5 sa), >100 $\mu\text{g}/\text{kg}$ (2 sa)*, country: France⁴⁶, *125 and 150 $\mu\text{g}/\text{kg}$ AFB₁

AFLATOXIN

incidence: 1/1, conc. range: <30 $\mu\text{g}/\text{kg}$ (1 sa), country: India³⁸⁰

Forage may contain the following mycotoxins:

Aspergillus and **Penicillium** Toxins

PATULIN

incidence: 2/10*, conc. range: pr, country: South Africa⁷⁹, *hay, lucerne, and silage sa

Fusarium Toxins

DEOXYNIVALENOL

incidence: ?/?*, \emptyset conc.: 46.02 $\mu\text{g}/\text{kg}$ ***, country: Czech Republic⁶⁰, **Lolium perenne*, **of all sa?

incidence: ?/?*, \emptyset conc.: 37.78 $\mu\text{g}/\text{kg}$ **, country: Czech Republic⁶⁰, **Festulolium pabulare*, **of all sa?

incidence: ?/?*, \emptyset conc.: 33.83 $\mu\text{g}/\text{kg}$ **, country: Czech Republic⁶⁰, **Festulolium braunii*, **of all sa?

incidence: ?/?*, \emptyset conc.: 46.60 $\mu\text{g}/\text{kg}$ **, country: Czech Republic⁶⁰, *mixture with *Festuca rubra*, **of all sa?

incidence: ?/?*, \emptyset conc.: 45.55 $\mu\text{g}/\text{kg}$ **, country: Czech Republic⁶⁰, *mixture with *Poa pratensis*, **of all sa?

incidence: 2/13*, conc. range: ≤ 489 $\mu\text{g}/\text{kg}$, \emptyset conc.: 348 $\mu\text{g}/\text{kg}$, country: Netherlands⁴⁵⁵, *forage products

FUMONISIN B₁

incidence: 4/40*, conc. range: 1,000–9,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5,000 $\mu\text{g}/\text{kg}$, country: USA/New Zealand¹⁵⁶, sa from New Zealand, *forage grass

FUMONISIN B₁ METHYL ESTER

incidence: 4/40*, conc. range: 500–4,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,750 $\mu\text{g}/\text{kg}$, country: USA/New Zealand¹⁵⁶, sa from New Zealand, *forage grass

DIACETOXYSCIRPENOL

incidence: 180/832*, conc. range: 3–60 $\mu\text{g}/\text{kg}$, country: Germany³⁷², *forage grass

T-2 TOXIN

incidence: 208/832*, conc. range:
40–2,780 µg/kg, country: Germany³⁷²,
*forage grass

TRICHOTHECENES

incidence: 1/10*, conc.: pr, country:
South Africa⁷⁹, *hay, lucerne, and
silage sa

ZEARALENONE

incidence: ?/?*, Ø conc.: 34.06 µg/kg**,
country: Czech Republic⁶⁰, **Lolium*
perenne, **of all sa?

incidence: ?/?*, Ø conc.: 9.82 µg/kg**,
country: Czech Republic⁶⁰, **Festulolium*
pabulare, **of all sa?

incidence: ?/?*, Ø conc.: 72.85 µg/kg**,
country: Czech Republic⁶⁰, **Festulolium*
braunii, **of all sa?

incidence: ?/?*, Ø conc.: 91.81 µg/kg**,
country: Czech Republic⁶⁰, *mixture with
Festuca rubra, **of all sa?

incidence: ?/?*, Ø conc.: 96.24 µg/kg**,
country: Czech Republic⁶⁰, *mixture with
Poa pratensis, **of all sa?

incidence: 557/832*, conc. range:
10–4,750 µg/kg, country: Germany³⁷²,
*forage grass

incidence: 1/13*, conc.: 82 µg/kg, country:
Netherlands⁴⁵⁵, *forage products

Gestation ration see Ration (gestation)

Goat feed see Feed (goat)

Grain(s) Feed grains may contain the
following mycotoxins:

***Alternaria* Toxins**

ALTERNARIOL MONOMETHYL ETHER
incidence: 1/2*, conc.: 8 µg/kg, country:
Germany²⁹⁴, *mixed grains

incidence: 2/7* **, conc. range: 4–8 µg/kg,
Ø conc.: 6 µg/kg, country: Germany²⁹⁴,
*ncac, **mixed grains

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 4/47, conc. range:
1–20 µg/kg (3 sa), 101–300 µg/kg (1 sa),
country: USA³⁷⁰

AFLATOXINS

incidence: 27/80*, conc. range: 1–3 µg/kg,
country: Brazil¹⁰, *brewers' grains

incidence: 22/55* **, conc. range:
0.5–4.5 µg/kg (1 sa), 5–49.5 µg/kg (4 sa),
50–400 µg/kg (14 sa), >400 µg/kg (3 sa),
country: Sweden³³³, *formic acid-treated
(700 g/l⁻¹), **mainly barley, oats, or
mixtures of both

incidence: 20/52* **, conc. range: 0.5–
4.5 µg/kg (1 sa), 5–49.5 µg/kg (7 sa),
50–400 µg/kg (5 sa), >400 µg/kg (7 sa),
country: Sweden³³³, *formic acid-treated
(850 g/l⁻¹), **mainly barley, oats, or
mixtures of both

incidence: 2/37* **, conc. range: 20 µg/kg
(1 sa), 100 µg/kg (1 sa), country:
Sweden³³³, *propionic acid-treated,
**mainly barley, oats, or mixtures of both

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 10/22, conc. range: 26.8–
439 µg/kg, country: Brazil¹¹

incidence: 6*/68**, conc. range:
30–6,000 µg/kg, country: Canada¹⁹, *wheat
sa, **barley, oats, and wheat

incidence: 1*/94** overall***, conc.:
1,600 µg/kg, country: Canada²⁴⁰,
*consumed by poultry, **mixed grains,
***different kinds of sa

incidence: 4/16*, conc. range: 28–135 µg/
kg, country: Brazil/Argentina⁵⁶³, sa from
Brazil, *brewers' grains

Claviceps Toxins

ERGOT ALKALOIDS

incidence: 8/8, conc. range: <100–50,000 µg/kg*, country: Australia³³¹, * > 90% dihydroergosine

incidence: 4/4, conc. range: 4,000–30,000 µg/kg*, country: Australia³³¹, * > 90% dihydroergosine

Fusarium Toxins

DEOXYNIVALENOL

incidence: 4/11*, conc. range: 90–200 µg/kg, Ø conc.: 145 µg/kg, country: Sweden¹⁹⁷, *mixed grains

incidence: ?/58* **, conc. range: ≤2,580 µg/kg, country: Germany³⁶⁴, *ncac, **barley, rye, wheat

incidence: 16/49* **, conc. range: ≤500 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 170/290* **, conc. range: ≤2,780 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 32/52* **, conc. range: ≤650 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 1/7, conc.: 100 µg/kg, country: Croatia⁵⁸¹

incidence: 3/5, conc. range: 1,500–3,440 µg/kg, Ø conc.: 2,700 µg/kg, country: Croatia⁵⁸¹

HT-2 TOXIN

incidence: 1*/94** overall* **, conc.: 66 µg/kg, country: Canada²⁴⁰, *consumed by beef cattle, **mixed grains, ***different kinds of sa

incidence: 17/49* **, conc. range: 120–1,200 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 2/55* **, conc. range: 120–440 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 4/52* **, conc. range: 130–190 µg/kg, Ø conc.: 157.5 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

DIACETOXYSCIRPENOL

incidence: 4/49* **, conc. range: 110–150 µg/kg, Ø conc.: 130 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 2/55* **, conc. range: 110 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 18/52* **, conc. range: 100–2,270 µg/kg, Ø conc.: 543 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 2/15, conc. range: 100 µg/kg, Ø conc.: 100 µg/kg, country: Croatia⁵⁸¹

incidence: 9/29, conc. range: 100–400 µg/kg, Ø conc.: 220 µg/kg, country: Croatia⁵⁸¹

incidence: 7/27, conc. range: 100–400 µg/kg, Ø conc.: 190 µg/kg, country: Croatia⁵⁸¹

incidence: 4/19, conc. range: 100–400 µg/kg, Ø conc.: 180 µg/kg, country: Croatia⁵⁸¹

incidence: 5/21, conc. range: 100–400 µg/kg, Ø conc.: 190 µg/kg, country: Croatia⁵⁸¹

incidence: 2/22, conc. range: 100–500 µg/kg, Ø conc.: 300 µg/kg, country: Croatia⁵⁸¹

incidence: 3/6, conc. range: 100–200 µg/kg, Ø conc.: 130 µg/kg, country: Croatia⁵⁸¹

T-2 TOXIN

incidence: ?/58* **, conc. range: ≤1.6 µg/kg, country: Germany³⁶⁴, *ncac, **barley, rye, wheat

incidence: 1/49* **, conc.: 160 µg/kg, country: Canada⁴³², *ncac, **spring and winter wheat as well as 2- and 6-row barley

incidence: 5/55* **, conc. range:
160–310 µg/kg, country: Canada⁴³², *ncac,
**spring and winter wheat as well as
2- and 6-row barley

incidence: 4/38, conc. range: 100 µg/kg,
Ø conc.: 100 µg/kg, country: Croatia⁵⁸¹

incidence: 9/30, conc. range: 100–200 µg/
kg, Ø conc.: 110 µg/kg, country: Croatia⁵⁸¹

incidence: 4/19, conc. range: 100–200 µg/
kg, Ø conc.: 130 µg/kg, country: Croatia⁵⁸¹

incidence: 2/21, conc. range: 100–200 µg/
kg, Ø conc.: 150 µg/kg, country: Croatia⁵⁸¹

incidence: 4/23, conc. range: 100–700 µg/
kg, Ø conc.: 350 µg/kg, country: Croatia⁵⁸¹

incidence: 4/6, conc. range: 100–520 µg/
kg, Ø conc.: 410 µg/kg, country: Croatia⁵⁸¹

ZEARALENONE

incidence: 14/395 overall*, conc. range:
tr–1,280 µg/kg, country: USA¹¹⁹, *different
kinds of sa

incidence: 2/12, conc. range: 500–750 µg/
kg, Ø conc.: 625 µg/kg, country: Scotland¹⁷⁸

incidence: 13/49* **, conc. range:
≤300 µg/kg, country: Canada⁴³², *ncac,
**spring and winter wheat as well as 2-
and 6-row barley

incidence: 72/290* **, conc. range:
≤1,240 µg/kg, country: Canada⁴³², *ncac,
**spring and winter wheat as well as 2-
and 6-row barley

incidence: 15/52* **, conc. range: ≤400 µg/
kg, country: Canada⁴³², *ncac, **spring
and winter wheat as well as 2- and 6-row
barley

ZEARALENOL

incidence: 5/395 overall*, conc. range:
tr–40 µg/kg, country: USA¹¹⁹, *different
kinds of sa

Penicillium Toxins

ROQUEFORTINE C

incidence: 3/3*, Ø conc.: 25,300 µg/kg,
country: Sweden⁴⁸², *moldy grain sa

Grain by-products see By-products
(grain)

Grain diets see Diet

Grain mixture may contain the
following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/9, conc. range: 20–130 µg/kg,
Ø conc.: 79.5 µg/kg, country: Germany⁶⁸

HT-2 TOXIN

incidence: 3/9, conc. range: 200–400 µg/
kg, country: Germany⁶⁸

DIACETOXYSCIRPENOL

incidence: 2/38, conc. range: 300–
19,000 µg/kg, country: Germany⁶⁸

T-2 TOXIN

incidence: 1/10, conc.: 300 µg/kg,
country: Germany⁶⁸

T-2 TRIOL

incidence: 1/9, conc.: 400 µg/kg, country:
Germany⁶⁸

ZEARALENONE

incidence: 17/41, conc. range: 10–500 µg/
kg, country: Germany⁶⁸

incidence: 1/10, conc.: 20 µg/kg, country:
Germany⁶⁸

Grain, whole may contain the
following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 164/164, conc. range: 0–100 µg/
kg (19 sa), 101–500 µg/kg (91 sa), 501–
1,000 µg/kg (38 sa), ≤2,100 µg/kg (16 sa),
country: Austria⁴⁹¹

ZEARALENONE

incidence: 94/94, conc. range: 0–10 µg/kg
(77 sa), 11–50 µg/kg (12 sa), 51–100 µg/kg
(1 sa), ≤200 µg/kg (4 sa), country: Austria⁴⁹¹

Grains and mixed feed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1* **/65, conc.: between 240–2,600 µg/kg***, country: Sweden²⁵, *oats treated with formic acid, **2 cows fed with this oats died, ***surface of stored grain

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 6*/68, conc. range: 40**–1,690 µg/kg, Ø conc.: 750 µg/kg, country: Sweden²⁵, *in barley and mixtures of barley and oats, **associated with damaged pig kidneys

Fusarium Toxins

ZEARALENONE
incidence: 2/68, conc. range: 100*–1,200** µg/kg, Ø conc.: 650 µg/kg, country: Sweden²⁵, *in a mixture of barley and oats, **in barley

Grains, damaged may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 26/26, conc. range: nd–20 µg/kg (20 sa), 21–50 µg/kg (2 sa), 51–80 µg/kg (2 sa), 81–250 µg/kg (2 sa), country: India⁵⁷⁸

Grains, heated may contain the following mycotoxins.

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 18/32, conc. range: 30–27,000 µg/kg, country: Canada⁹²

Penicillium Toxins

CITRININ

incidence: 13/32, conc. range: 70–80,000 µg/kg, country: Canada⁹²

Grains (spring and winter wheat, 2- and 6-row barley) see Grain(s)

Gram (bengal) Feed bengal gram may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 2/5, conc. range: 1–30 µg/kg (1 sa), 201–300 µg/kg (1 sa), country: India⁵⁸⁰

Gram (black) Feed black gram may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 5/10, conc. range: 10–15 µg/kg, country: India¹⁸³

incidence: 1/5, conc. range: 101–200 µg/kg, country: India⁵⁸⁰

AFLATOXIN B₂
incidence: 2/10, conc. range: 10 µg/kg, country: India¹⁸³

Gram (green) Feed green gram may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 6/10, conc. range: tr–20 µg/kg, country: India¹⁸³

Gram (horse) Feed horse gram may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 16/35, conc. range: ≤25 µg/kg (8 sa), 26–50 µg/kg (2 sa), 51–100 µg/kg (5 sa), 107 µg/kg (1 sa), Ø conc.: 36.56 µg/kg, country: India²⁴⁷

AFLATOXIN B₂

incidence: 1/35, conc.: 9 µg/kg, country: India²⁴⁷

Gram (red) Feed red gram may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/5, conc.: 31–100 µg/kg, country: India⁵⁸⁰

Grass see Feed (cattle)

Grass silage see Silage (grass)

Green gram see Gram (green)

Groundnut cake see Cake (peanut)

Groundnut kernels see Peanut

Groundnut oil cake see Oil cake (peanut)

Groundnut meal see Meal (peanut)

Grower feed see Feed (grower)

Grower ration see Ration (grower)

Grower's mash see Mash (grower's)

Hamburger bun, dried see Feed

Hard red spring wheat see Wheat (spring)

Hay may contain the following mycotoxins:

Alternaria Toxins

AAL-TOXIN

incidence: 25/25*, conc. range: 290–1,160 µg/kg, Ø conc.: 720 µg/kg, country: USA³³⁴, *including hay and hay silage

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/47*, conc. range: 1–20 µg/kg (3 sa), country: USA³⁷⁰, *hay/silage

incidence: 4?/4, conc. range: 0.017–0.032 µg/kg, country: Italy⁴⁶⁷

AFLATOXIN B₂

incidence: 3?/4, conc. range: ≤0.024 µg/kg, country: Italy⁴⁶⁷

AFLATOXIN G₁

incidence: 3?/4, conc. range: ≤0.012 µg/kg, country: Italy⁴⁶⁷

Aspergillus and **Penicillium** Toxins

CYCLOPIAZONIC ACID

incidence: 20/25*, conc. range: 120–1,820 µg/kg, Ø conc.: 390 µg/kg, country: USA³³⁴, *including hay and hay silage

GLIOTOXIN

incidence: 1/1*, conc.: 495.0 µg/kg, country: Germany⁴⁷², sa from Saudi Arabia, *hot spot

OCHRATOXIN A

incidence: 2*/7,345 overall**, conc. range: nc, country: Hungary²⁰⁹, *hay and straw, **different kinds of sa

incidence: 1/1*, conc.: 0.5 µg/kg, country: Germany⁴⁷², sa from Saudi Arabia, *ground

incidence: 1/1*, conc.: 25.0 µg/kg, country: Germany⁴⁷², sa from Saudi Arabia, *hot spot

PATULIN

incidence: 2*/7,345**, conc. range: nc, country: Hungary²⁰⁹, *hay and straw, **different kinds of sa

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1*/7,345 overall**, conc.: nc, country: Hungary²⁰⁹, *hay and straw, **different kinds of sa

incidence: 25/25*, conc. range: 510–720 µg/kg, Ø conc.: 610 µg/kg, country: USA³³⁴, *including hay and hay silage

incidence: 10/10, conc. range: 1,200–3,600 µg/kg, Ø conc.: 2140 µg/kg, country: Canada/Finland⁵⁵⁸, sa from Canada

incidence: 4/28, conc. range: ≤69 µg/kg, Ø conc.: 41 µg/kg, country: Germany⁵⁷²

3-ACETYLDEOXYNIVALENOL

incidence: 1/28, conc.: 20 µg/kg country: Germany⁵⁷²

FUMONISIN B₁

incidence: 13/25*, conc. range: 20–450 µg/kg, Ø conc.: 120 µg/kg, country: USA³³⁴, *including hay and hay silage

NIVALENOL

incidence: 2/28, conc. range: 40–222 µg/kg, Ø conc.: 131 µg/kg, country: Germany⁵⁷²

T-2 TOXIN

incidence: 10*/7,345 overall**, conc. range: nc, country: Hungary²⁰⁹, *hay and straw, **different kinds of sa

incidence: 10/10, conc. range: ≤150–400 µg/kg, country: Canada/Finland⁵⁵⁸, sa from Canada

ZEARALENONE

incidence: 1/1, conc.: 14,000 µg/kg, country: USA/UK¹⁷⁷, sa from UK

incidence: 6*/7,345 overall**, conc. range: nc, country: Hungary²⁰⁹, *hay and straw, **different kinds of sa

incidence: 10/10, conc. range: ≤250–1,210 µg/kg, country: Canada/Finland⁵⁵⁸, sa from Canada

incidence: 12/28, conc. range: ≤115 µg/kg, Ø conc.: 24 µg/kg, country: Germany⁵⁷²

Penicillium Toxins

CITRININ

incidence: 1/7,345, conc.: nc, country: Hungary²⁰⁹

PR TOXIN

incidence: 20/25*, conc. range: 50–260 µg/kg, Ø conc.: 150 µg/kg, country: USA³³⁴, *including hay and hay silage

Hay or silage see Hay

Hay/silage see Hay

Hay/straw see Hay

Herbage may contain the following mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 10/60, conc. range: 400–4,000 µg/kg, country: New Zealand⁵²⁴

Hominy feed see Feed, hominy

Horse bean see Bean

Horse feed see Feed (horse)

Horse gram see Gram (horse)

Hull (peanut) may contain the following mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 2/12, conc. range: 70–150 µg/kg, country: USA³⁷⁰

Hull (soybean) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 17/17, conc. range: <10–420 µg/kg, country: USA⁸³

DIACETOXYSCIRPENOL

incidence: 12/17, conc. range: <10–130 µg/kg, country: USA⁸³

T-2 TOXIN EQUIVALENTS

incidence: 17/17, conc. range: 10–4,610 µg/kg*, Ø conc.: 707.1 µg/kg*, country: USA⁸³, *T-2 tetraol after base hydrolysis (primarily HT-2)

ZEARALENONE

incidence: 16/17, conc. range: 800–11,260 µg/kg, Ø conc.: 4,042.5 µg/kg, country: USA⁸³

ZEARALENOL

incidence: 11/17, conc. range: 240–1,200 µg/kg, Ø conc.: 490 µg/kg, country: USA⁸³

Husk may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/10, conc. range: 10–20 µg/kg, Ø conc.: 15 µg/kg, country: India¹⁸³

Husk (bengal gram) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/8, conc. range: 17 µg/kg, country: India²⁴⁷

Husk (black gram) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/17, conc. range: 9–39 µg/kg (1 sa), Ø conc.: 24 µg/kg, country: India²⁴⁷

AFLATOXIN B₂

incidence: 1/17, conc.: 3 µg/kg, country: India²⁴⁷

Husk (maize) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 76 µg/kg, country: India²⁴⁷

AFLATOXIN B₂

incidence: 1/1, conc.: 23 µg/kg, country: India²⁴⁷

Husk (red gram) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 3/16, conc. range: ≤25 µg/kg (2 sa), 46 µg/kg (1 sa), Ø conc.: 22.67 µg/kg, country: India²⁴⁷

AFLATOXIN B₂

incidence: 2/16, Ø conc.: 6.5 µg/kg, country: India²⁴⁷

Husked barley see Barley

Husked wheat see Wheat

Industrial feed see Feed, industrial

Jagni cake see Cake (*jagni*)

Jawar may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 1*/1**, conc.: ≤30 µg/kg,
country: India⁵¹⁵, *sa contained aflatoxin,
**poultry feed

Lactation ration see Ration
(lactation)

Layer feed see Feed (layer)

Layer mash see Mash (layer)

Legume mixture may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 5/10, conc. range: 20–40 µg/kg,
country: India¹⁸³

Aspergillus and *Penicillium* Toxins

PENICILLIC ACID

incidence: 1/10, conc.: 20 µg/kg, country:
India¹⁸³

Legumes, hay, forage may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/70, conc.: 30 µg/kg, country:
Canada¹⁹

see also Alfalfa brome hay

Linseed Feed linseed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 6/21, conc. range: 5–10 µg/kg,
Ø conc.: 9 µg/kg, country: Germany²⁹⁸, sa
imported?

Linseed cake see Cake (linseed)

Livol may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 18 µg/kg, country:
India²⁴⁷

Lolium spp. see Forage

Lucerne see Alfalfa and
see Feed (cattle)

Lupine may contain the following mycotoxins:

Fusarium Toxins

HT-2 TOXIN

incidence: 1/9, conc.: 5 µg/kg, country:
Germany⁵⁷²

NIVALENOL

incidence: 1/9, conc.: 23 µg/kg, country: Germany⁵⁷²

15-MONOACETOXYSCIRPENOL

incidence: 2/9, conc. range: 5 µg/kg, Ø conc.: 5 µg/kg, country: Germany⁵⁷²

T-2 TOXIN

incidence: 1/9, conc.: 6 µg/kg, country: Germany⁵⁷²

Mahua cake see Cake (*mahua*)

Maize Feed maize may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 3/5*, Ø conc.: 30 µg/kg, country: Egypt¹⁶, *hybrid maize

incidence: 187/238, conc. range: 1–19 µg/kg (48 sa), 20–49 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), >1,000 µg/kg (3 sa), country: USA³⁸

incidence: 3/3, conc. range: 30–1,477 µg/kg, Ø conc.: 545.7 µg/kg, country: Canada³⁹

incidence: 19/111, conc. range: 5–5,000 µg/kg, country: USA⁴⁰

incidence: 37/40*, conc. range: 0.1–203.3 µg/kg, Ø conc.: 36.8 µg/kg, country: USA⁴⁷, *ncac

incidence: 39/155*, conc. range: <5–1,500 µg/kg, country: South Africa⁷⁹, *ncac

incidence: 4/111, conc. range: 19–24 µg/kg, country: Poland⁸⁴

incidence: 5/5, conc. range: 70–707 µg/kg, Ø conc.: 409.4 µg/kg, country: USA⁹⁰

incidence: 14/15, conc. range: 9.4–96.0 µg/kg, Ø conc.: 28.4 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

incidence: 25/26* **, conc. range: tr–1,050 µg/kg, country: Indonesia/Australia¹⁰⁵, sa from Indonesia, *sa collected over 1 year, **poultry feed

incidence: 3/3*, conc. range: 11–606 µg/kg, Ø conc.: 313.3 µg/kg, country: Japan¹¹⁷, sa from Thailand, *visually moldy corn

incidence: 1/2, conc.: 1 µg/kg, country: Japan¹¹⁷, sa from Thailand, *visually healthy corn

incidence: 50/52*, conc. range: 1–20,000 µg/kg, country: Indonesia/Australia¹¹⁸, sa from Indonesia, *included are purple, insect-damaged, BGYF, moldy, and good kernels

incidence: 1/3, conc.: 70 µg/kg, country: Australia¹²¹

incidence: 3/3*, conc. range: 7.5–47 µg/kg, Ø conc.: 23.8 µg/kg, country: UK¹²², *ncac

incidence: 4/33, conc. range: 3.9–66.1 µg/kg, Ø conc.: 20.7 µg/kg, country: Colombia¹²⁵

incidence: 10/10, conc. range: 7–422 µg/kg, Ø conc.: 156.9 µg/kg, country: USA¹³⁶

incidence: 2/9, conc. range: 12–16.7 µg/kg, Ø conc.: 14.4 µg/kg, country: Japan/Korea/Brazil/Nepal/China¹⁴¹, sa from Argentina, South Africa, and USA

incidence: 68/239, conc. range: 4–487 µg/kg, Ø conc.: 49.6 µg/kg, country: Pakistan¹⁶³

incidence: 4/102, conc. range: 10–90 µg/kg, Ø conc.: 32.5 µg/kg, country: Greece¹⁷⁶

incidence: 1/2, conc.: 70 µg/kg, country: Australia¹⁸¹

incidence: 5/10, conc. range: 10–20 µg/kg, country: India¹⁸³

incidence: 98?/98*, conc. range: <2 µg/kg (86 sa), 2–20 µg/kg (11 sa), 109 µg/kg (1 sa), Ø conc.: 1.9 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 104?/104*, conc. range: <2 µg/kg (101 sa), 2–≤13 µg/kg (3 sa), Ø conc.: 0.3 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 94?/94*, conc. range: <2 µg/kg (77 sa), 2–20 µg/kg (15 sa), ≤32 µg/kg (2 sa), Ø conc.: 1.5 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 114?/114*, conc. range: <2 µg/kg (89 sa), 2–20 µg/kg (24 sa), 28 µg/kg (1 sa), Ø conc.: 1.5 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 93?/93*, conc. range: <2 µg/kg (81 sa), 2–20 µg/kg (9 sa), ≤158 µg/kg (3 sa), Ø conc.: 1.5 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 19/103* **, conc. range: 3–130 µg/kg, Ø conc.: 22 µg/kg, country: Nigeria²⁰⁷, *ncac, **preharvest maize

incidence: 6/283*, conc. range: 6–25 µg/kg, Ø conc.: 15 µg/kg, country: USA²¹⁷, *ncac

incidence: 8/293* **, conc. range: <6–25 µg/kg, country: USA²¹⁸, *ncac, **export cargo

incidence: 563/862, conc. range: ≤25 µg/kg (213 sa), 26–50 µg/kg (84 sa), 51–100 µg/kg (83 sa), 101–200 µg/kg (63 sa), 201–500 µg/kg (59 sa), 501–1,000 µg/kg (39 sa), 1,001–1,500 µg/kg (3 sa), 1,501–2,000 µg/kg (6 sa), 2,001–3,000 µg/kg (4 sa), 3,001–4,000 µg/kg (4 sa), 4,001–5,000 µg/kg (4 sa), 8,260 µg/kg (1 sa), Ø conc.: 226.27 µg/kg, country: India²⁴⁷

incidence: 1/4, conc.: 112.6 µg/kg, country: India²⁵³

incidence: 1/461, conc.: 42 µg/kg, country: France²⁶²

incidence: 4/30, conc. range: <20 µg/kg (3 sa), 101–1,000 µg/kg (1 sa), country: UK²⁶⁷, sa imported?

incidence: 44/328*, conc. range: 5–900 µg/kg, Ø conc.: 64.6 µg/kg, country: Brazil²⁷¹, *ncac

incidence: 37/214*, conc. range: <5–56 µg/kg, country: USA²⁷⁷, *shelled

incidence: 92/297* **, conc. range: ≤9 µg/kg (12 sa), 10–19 µg/kg (18 sa), 20–39 µg/kg (24 sa), 40–79 µg/kg (18 sa), 80–159 µg/kg (11 sa), 160–319 µg/kg (6 sa), 320–639 µg/kg (3 sa), country: USA²⁸⁶, *ncac, **collected from the field

incidence: 60/297* **, conc. range: ≤9 µg/kg (9 sa), 10–19 µg/kg (19 sa), 20–39 µg/kg (14 sa), 40–79 µg/kg (9 sa), 80–159 µg/kg (7 sa), 160–319 µg/kg (1 sa), >640 µg/kg (1 sa), country: USA²⁸⁶, *ncac, **collected from elevators

incidence: 3/30*, conc. range: 22–50 µg/kg, Ø conc.: 34 µg/kg, country: Argentina/Chile³²², sa from Argentina, *ncac

incidence: 1/1*, conc.: 114 µg/kg, country: USA³⁶⁸, *associated with equine death

incidence: 316/644, conc. range: 1–20 µg/kg (224 sa), 21–100 µg/kg (69 sa), 101–300 µg/kg (13 sa), >300 µg/kg (10 sa), country: USA³⁷⁰

incidence: 30/1,311, conc. range: 3–19 µg/kg, country: USA³⁸¹

incidence: 34/35*, conc. range: 0.11–4,030.0 µg/kg, country: India³⁸⁶, *ncac

incidence: 19/19* **, conc. range: 5.0–126.0 µg/kg, country: India³⁸⁶, *ncac, **rain-affected

incidence: 3/3*, conc. range: 11.5–72.5 µg/kg, Ø conc.: 34.2 µg/kg, country: USA³⁸⁷, *ncac

incidence: 57/110*, conc. range: 6–1,600 µg/kg, Ø conc.: 315.3 µg/kg, country: Brazil³⁹⁴, *ncac

incidence: 51/57, conc. range: 5–200 µg/kg, Ø conc.: 80.9 µg/kg, country: Egypt³⁹⁷

incidence: 267/833*, conc. range: 5–200 µg/kg, Ø conc.: 47.7 µg/kg, country: Egypt³⁹⁷, *yellow corn

incidence: 82/214*, conc. range: 0.2–129 µg/kg, Ø conc.: 9.4 µg/kg, country: Brazil⁴⁰³, *for food and feed

incidence: 3/31*, conc. range: ≤ 345 $\mu\text{g}/\text{kg}$,
country: USA⁴⁰⁵, *wild turkey feed

incidence: 8/23*, conc. range: 12–878 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 166.5 $\mu\text{g}/\text{kg}$, country: Brazil⁴¹⁹,
*for food and feed

incidence: 31/34*, conc. range: < 100 $\mu\text{g}/\text{kg}$
(3 sa), 100–500 $\mu\text{g}/\text{kg}$ (10 sa), 500–
1,000 $\mu\text{g}/\text{kg}$ (5 sa), 1,000– $\leq 4,074$ $\mu\text{g}/\text{kg}$
(13 sa), country: Denmark⁴²⁶, sa from
Indonesia, *poultry feedstuff

incidence: 41/61*, conc. range: ≤ 245 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 49.2 $\mu\text{g}/\text{kg}$, country: Bangladesh/
UK⁴²⁸, sa from Bangladesh, *ncac

incidence: 1/24, conc.: 110 $\mu\text{g}/\text{kg}$, country:
Morocco/USA⁴²⁹, sa from Morocco

incidence: 3/174, conc. range: 1–40 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 14.7 $\mu\text{g}/\text{kg}$, country: Australia⁴³³

incidence: 1/1*, conc.: 10.0 $\mu\text{g}/\text{kg}$,
country: Thailand/USA⁴³⁶, sa from
Thailand, *stored

incidence: 1/1*, conc.: 0.8 $\mu\text{g}/\text{kg}$, country:
Thailand/USA⁴³⁶, sa from Thailand,
*nonstored

incidence: 1/1*, conc.: 17.0 $\mu\text{g}/\text{kg}$,
country: Thailand/USA⁴³⁶, sa from USA,
*crib corn

incidence: 7/8* **, conc. range: 230–
1,900 $\mu\text{g}/\text{kg}$ **, \emptyset conc.: 879.7 $\mu\text{g}/\text{kg}$ **,
country: USA⁴⁵¹, *farms, **in shell corn

incidence: 1/18*, conc.: 2.41 $\mu\text{g}/\text{kg}$,
country: China⁴⁶⁸, *ncac

incidence: 1/1*, conc.: 0.1 $\mu\text{g}/\text{kg}$, country:
South Africa⁴⁷³, sa from USA, *associated
with ELEM and hepatocarcinogenicity in
rats

incidence: 6/6*, conc.: 2,152 $\mu\text{g}/\text{kg}$,
country: USA⁴⁸³, *sweet corn

incidence: 5/5, conc.: 800 $\mu\text{g}/\text{kg}$, country:
USA⁴⁸⁴

incidence: 1/1, conc.: 10.8 $\mu\text{g}/\text{kg}$, country:
Thailand/Japan⁴⁸⁸, sa of unknown origin

incidence: 7/10, conc. range: 0.49–4.30 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 3.1 $\mu\text{g}/\text{kg}$, country: Japan⁴⁸⁹,
sa of the USA

incidence: 2/2, conc. range: 1.82–7.27 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 4.6 $\mu\text{g}/\text{kg}$, country: Japan⁴⁸⁹,
sa of China

incidence: 2/2, conc. range: 23.27–
31.21 $\mu\text{g}/\text{kg}$, \emptyset conc.: 27.2 $\mu\text{g}/\text{kg}$, country:
Japan⁴⁸⁹, sa of Thailand

incidence: 58/58*, conc. range: ≤ 500 $\mu\text{g}/\text{kg}$
(48 sa), 600–1,000 $\mu\text{g}/\text{kg}$ (7 sa), 1,100–
2,800 $\mu\text{g}/\text{kg}$ (3 sa), country: India⁴⁹⁵,
*poultry feedstuff

incidence: 26/52* **, conc. range: 250 $\mu\text{g}/\text{kg}$
(17 sa), 500 $\mu\text{g}/\text{kg}$ (5 sa), 700 $\mu\text{g}/\text{kg}$ (1
sa), 1,000 $\mu\text{g}/\text{kg}$ (3 sa), country: India⁴⁹⁶,
*yellow maize, **poultry feedstuff

incidence: 18/32*, conc. range:
60–1,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 388.9 $\mu\text{g}/\text{kg}$,
country: India⁴⁹⁷, *poultry feedstuff

incidence: 59/90* **, conc. range: 0.05–
5.20 $\mu\text{g}/\text{kg}$, country: Italy⁵²⁶, *ncac, **corn
hybrids

incidence: 4/28, conc. range: 7–135 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 63 $\mu\text{g}/\text{kg}$, country: Sweden⁵⁴², sa
imported

incidence: 21/200*, conc. range:
 $\leq 1,393.0$ $\mu\text{g}/\text{kg}$, country: Brazil⁵⁶², *ncac

incidence: 31/36*, conc. range: 8.56–
30.96 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18.1 $\mu\text{g}/\text{kg}$, country:
Pakistan/UK⁵⁷⁷, sa from Pakistan

incidence: 11/12, conc. range: 0.4–555 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 77.5 $\mu\text{g}/\text{kg}$, country:
Vietnam⁵⁸⁸

incidence: 8/9, conc. range: 0.22–73.10 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 17.9 $\mu\text{g}/\text{kg}$, country: Iran/
Italy⁵⁹⁹, sa from Iran

incidence: 1/52*, conc.: 17 $\mu\text{g}/\text{kg}$, country:
Argentina⁶⁰⁶, *ncac

incidence: 54/311, conc. range: ≤ 457 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 60 $\mu\text{g}/\text{kg}$, country: Austria/
Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 3/14, conc. range: ≤ 311 $\mu\text{g}/\text{kg}$,
country: Austria/Singapore/USA⁶⁰⁸, sa
from Europe and Mediterranean Region

incidence: 7/12, conc. range: 7–126.5 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 51.2 $\mu\text{g}/\text{kg}$, country: France⁶¹⁰,
sa from Vietnam

AFLATOXIN B₂

incidence: 3/3, conc. range: 3.2–70 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 29.4 $\mu\text{g}/\text{kg}$, country: Canada³⁹

incidence: 4/111, conc. range: 1–2 $\mu\text{g}/\text{kg}$,
country: Poland⁸⁴

incidence: 5/5, conc. range: 34–134 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 70 $\mu\text{g}/\text{kg}$, country: USA⁹⁰

incidence: 20/26* **, conc. range:
tr–158 $\mu\text{g}/\text{kg}$, country: Indonesia/
Australia¹⁰⁵, sa from Indonesia, *sa
collected over 1 year, **poultry feed

incidence: 3/3*, conc. range: 3–73 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 41.3 $\mu\text{g}/\text{kg}$, country: Japan¹¹⁷, sa
from Thailand, *visually moldy corn

incidence: 3/3*, conc. range:
0.9–42 $\mu\text{g}/\text{kg}$, \emptyset conc.: 14.7 $\mu\text{g}/\text{kg}$,
country: UK¹²², *ncac

incidence: 1/33, conc.: 10.4 $\mu\text{g}/\text{kg}$,
country: Colombia¹²⁵

incidence: 8/103* **, conc. range: 4–26 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, country: Nigeria²⁰⁷,
*ncac, **preharvest maize

incidence: 3/293* **, conc. range: 3–6 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 5 $\mu\text{g}/\text{kg}$, country: USA²¹⁸,
*ncac, **export cargo

incidence: 245/862, \emptyset conc.: 37.41 $\mu\text{g}/\text{kg}$,
country: India²⁴⁷

incidence: 1/461, conc.: 6 $\mu\text{g}/\text{kg}$, country:
France²⁶²

incidence: 2/30*, conc. range: tr–3 $\mu\text{g}/\text{kg}$,
country: Argentina/Chile³²², sa from
Argentina, *ncac

incidence: 1/1*, conc.: 10 $\mu\text{g}/\text{kg}$, country:
USA³⁶⁸, *associated with equine death

incidence: 55/110*, conc. range: 1.9–192 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 30.9 $\mu\text{g}/\text{kg}$, country: Brazil³⁹⁴,
*ncac

incidence: 43/214*, conc. range: 0.1–32 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 2.1 $\mu\text{g}/\text{kg}$, country: Brazil⁴⁰³,
*for food and feed

incidence: 1?/31*, conc.: 35 $\mu\text{g}/\text{kg}$,
country: USA⁴⁰⁵, *wild turkey feed

incidence: 3/23*, conc. range: 7–180 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 78.3 $\mu\text{g}/\text{kg}$, country: Brazil⁴¹⁹,
*for food and feed

incidence: 24/34*, conc. range: <100 $\mu\text{g}/\text{kg}$
(5 sa), 100–500 $\mu\text{g}/\text{kg}$ (7 sa), 500–1,000 $\mu\text{g}/\text{kg}$
(4 sa), 100– $\leq 3,021$ $\mu\text{g}/\text{kg}$ (8 sa),
country: Denmark⁴²⁶, sa from Indonesia,
*poultry feedstuff

incidence: 1/174, conc.: 50 $\mu\text{g}/\text{kg}$, country:
Australia⁴³³

incidence: 1/1*, conc.: 1.4 $\mu\text{g}/\text{kg}$, country:
Thailand/USA⁴³⁶, sa from Thailand, *stored

incidence: 1/1*, conc.: 0.2 $\mu\text{g}/\text{kg}$, country:
Thailand/USA⁴³⁶, sa from Thailand,
*nonstored

incidence: 1/1*, conc.: 3.8 $\mu\text{g}/\text{kg}$, country:
Thailand/USA⁴³⁶, sa from USA, *crib corn

incidence: 7/8*, conc. range: 11–120 $\mu\text{g}/\text{kg}$
kg**, \emptyset conc.: 58.6 $\mu\text{g}/\text{kg}$ **, country:
USA⁴⁵¹, *farms, **in shell corn

incidence: 1/18*, conc.: 0.68 $\mu\text{g}/\text{kg}$,
country: China⁴⁶⁸, *ncac

incidence: 1/1*, conc.: 0.1 $\mu\text{g}/\text{kg}$, country:
South Africa⁴⁷³, sa from USA, *associated
with ELEM and hepatocarcinogenicity in
rats

incidence: 6?/6*, conc.: 213 $\mu\text{g}/\text{kg}$,
country: USA⁴⁸³, *sweet corn

incidence: 5?/5, conc.: 200 $\mu\text{g}/\text{kg}$, country:
USA⁴⁸⁴

incidence: 7/200*, conc. range: 5.6–
55.7 $\mu\text{g}/\text{kg}$, country: Brazil⁵⁶², *ncac

incidence: 3/12, conc. range: 0.3–4.8 µg/kg, Ø conc.: 1.82 µg/kg, country: Vietnam⁵⁸⁸

incidence: 6/9, conc. range: 0.02–12.70 µg/kg, Ø conc.: 4.6 µg/kg, country: Iran/Italy⁵⁹⁹, sa from Iran

AFLATOXINS (B₁ + B₂)

incidence: 8/8*, conc. range: 7–360 µg/kg, Ø conc.: 147.4 µg/kg, country: USA³²⁶, *ncac

AFLATOXIN B

incidence: 9/34, conc. range: ≤10 µg/kg (4 sa), >10–≤100 µg/kg (4 sa), >100 µg/kg (1 sa)*, country: France⁴⁶, *187 µg/kg AFB₁

incidence: ?/8, conc. range: 6–11 µg/kg, Ø conc.: 8.5 µg/kg, country: Pakistan¹⁶²

AFLATOXIN G₁

incidence: 32/238, conc. range: 1–19 µg/kg (14 sa), 20–49 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), >1,000 µg/kg (1 sa), country: USA³⁸

incidence: 1/3, conc.: 74 µg/kg, country: Canada³⁹

incidence: 10/26* **, conc. range: tr–10 µg/kg, country: Indonesia/Australia¹⁰⁵, sa from Indonesia, *sa collected over 1 year, **poultry feed

incidence: 2/3*, conc. range: 0.3–105 µg/kg, Ø conc.: 52.7 µg/kg, country: UK¹²², *ncac

incidence: 3/103* **, conc. range: 5–11 µg/kg, Ø conc.: 8 µg/kg, country: Nigeria²⁰⁷, *ncac, **preharvest maize

incidence: 2/283*, tr–12 µg/kg, country: USA²¹⁷, *ncac

incidence: 1/293* **, conc.: 25 µg/kg, country: USA²¹⁸, *ncac, **export cargo

incidence: 4?/862, Ø conc.: 212 µg/kg, country: India²⁴⁷

incidence: 1/461, conc.: 4 µg/kg, country: France²⁶²

incidence: 5/1,311, conc. range: 2–8 µg/kg, country: USA³⁸¹

incidence: 11/110*, conc. range: 25–254 µg/kg, Ø conc.: 70.7 µg/kg, country: Brazil³⁹⁴, *ncac

incidence: 11/214*, conc. range: 0.2–12 µg/kg, Ø conc.: 1.9 µg/kg, country: Brazil⁴⁰³, *for food and feed

incidence: 2/23*, conc. range: 28 µg/kg, Ø conc.: 28 µg/kg, country: Brazil⁴¹⁹, *for food and feed

incidence: 2/34*, conc. range: 101–528 µg/kg, Ø conc.: 314.5 µg/kg, country: Denmark⁴²⁶, sa from Indonesia, *poultry feedstuff

incidence: 1/174, conc.: 2 µg/kg, country: Australia⁴³³

incidence: 1/1*, conc.: 28 µg/kg, country: Thailand/USA⁴³⁶, sa from USA, *ground corn

incidence: 1/8*, conc.: 65 µg/kg**, country: USA⁴⁵¹, *farms, **in shell corn

incidence: 1/18*, conc.: 1.72 µg/kg, country: China⁴⁶⁸, *ncac

incidence: 1/200*, conc.: 39.2 µg/kg, country: Brazil⁵⁶², *ncac

AFLATOXIN G₂

incidence: 3/26* **, conc. range: tr–1 µg/kg, country: Indonesia/Australia¹⁰⁵, sa from Indonesia, *sa collected over 1 year, **poultry feed

incidence: 1/3*, conc.: 40 µg/kg, country: UK¹²², *ncac

incidence: 1/103* **, conc.: 7 µg/kg, country: Nigeria²⁰⁷, *ncac, **preharvest maize

incidence: 1/293* **, conc.: 6 µg/kg, country: USA²¹⁸, *ncac, **export cargo

incidence: 4?/862, Ø conc.: 30 µg/kg, country: India²⁴⁷

incidence: 7/110*, conc. range: 7–58 µg/kg, Ø conc.: 22.6 µg/kg, country: Brazil³⁹⁴, *ncac

incidence: 2/214*, conc. range: 0.4–4.0 µg/kg, Ø conc.: 2.2 µg/kg, country: Brazil⁴⁰³, *for food and feed

incidence: 2/23*, conc. range: 6–11 µg/kg, Ø conc.: 8.5 µg/kg, country: Brazil⁴¹⁹, *for food and feed

incidence: 1/34*, conc.: 144 µg/kg, country: Denmark⁴²⁶, sa from Indonesia, *poultry feedstuff

incidence: 1/18*, conc.: 0.86 µg/kg, country: China⁴⁶⁸, *ncac

incidence: 1/200*, conc.: 29.7 µg/kg, country: Brazil⁵⁶², *ncac

AFLATOXIN G

incidence: ?/8, conc. range: 4–5 µg/kg, Ø conc.: 4.5 µg/kg, country: Pakistan¹⁶²

AFLATOXIN M₁

incidence: 1/1*, conc.: 6 µg/kg*, country: USA³⁶⁸, *associated with equine death

AFLATOXIN

incidence: 2/23, conc. range: 6.7–131.8 µg/kg, Ø conc.: 69.3 µg/kg, country: UK/Honduras³, sa from Honduras

incidence: 6/26, conc. range: 10–450 µg/kg (estimated), country: India³³

incidence: 355/516*, conc. range: 1–20 µg/kg (288 sa), 21–100 µg/kg (54 sa), >100–1,030 µg/kg (13 sa), country: USA⁸⁶, *ncac

incidence: 1/71* **, conc. range: 2–20 µg/kg*** (1 sa), country: Uruguay/Italy⁹¹, sa from Uruguay, *ncac, **and by-products, ***AFB₁, AFB₂, AFG₁, and AFG₂

incidence: 5/223*, conc. range: tr–10 µg/kg, country: USA²¹⁶, *thereof 26 sa intended for food use

incidence: ?/23*, conc. range: ≤416 µg/kg, country: India²⁵⁰, *commonly used as poultry feed ingredient

incidence: 349/1,283* **, 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), ≤306 µg/kg (29 sa), country: USA²⁷⁸, *ncac, **white corn

incidence: 8/8* **, conc. range: 7.5–1,100 µg/kg, Ø conc.: 413 µg/kg, country: USA²⁹⁶, *ncac, **combine-harvested sa

incidence: 45/45* **, conc. range: ≤19 µg/kg (23 sa), 20–99 µg/kg (15 sa), 100–399 µg/kg (5 sa), 400–799 µg/kg (2 sa), country: USA³⁰³, *ncac, **preharvest dent corn fields in July

incidence: 45/45* **, conc. range: ≤19 µg/kg (33 sa), 20–99 µg/kg (7 sa), 100–399 µg/kg (2 sa), 400–799 µg/kg (3 sa), country: USA³⁰³, *ncac, **preharvest dent corn fields in September

incidence: 33/76*, conc. range: 11–30 µg/kg (14 sa), 31–100 µg/kg (12 sa), >100–≤806 µg/kg (7 sa), country: India/UK³¹¹, sa from India, *ncac

incidence: 113/250*, Ø conc. range: 46**–8,665*** µg/kg, country: USA³²⁰, *ncac, **NBGYF and ***BGYF kernels

incidence: 90/7,937*, conc. range: ≤396 µg/kg, country: USA³²⁸, *ncac

incidence: 235/17,245*, conc. range: nc, country: USA³²⁸, *ncac

incidence: 7/7, conc. range: <30 µg/kg (3 sa), >30 µg/kg (1 sa), >200 µg/kg (2 sa), >600 µg/kg (1 sa), country: India³⁸⁰

incidence: 6/923*, conc. range: 13–151 µg/kg, Ø conc.: 45 µg/kg, country: USA³⁸⁵, *ncac

incidence: 20/39*, conc. range: tr–750 µg/kg, country: USA⁴²⁷, *as bait for deer

incidence: 13*/13**, conc. range: ≤30 µg/kg (8 sa), 31–100 µg/kg (5 sa), country: India⁵¹⁵, *all sa contained aflatoxin, **poultry feed

incidence: 3*/3**, conc. range: ≤30 µg/kg (2 sa), >100 µg/kg (1 sa), country: India⁵¹⁵, *all sa contained aflatoxin, **poultry feed

incidence: 12/57, Ø conc.: 1.2 µg/kg*,
country: USA⁵⁴⁴, *of pos sa only?

incidence: 1/1, conc.: 800 µg/kg, country:
USA⁵⁶¹

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 1/1*, conc.: pr, country:
UK⁹³, *ncac

incidence: 8/10* **, Ø conc.: 480 µg/kg,
country: Egypt⁵¹⁶, *grind maize, **poultry
feedstuff ingredient

incidence: 15/26, conc. range: 1.5–5 µg/kg
(3 sa), 5–10 µg/kg (4 sa), 15–20 µg/kg
(1 sa), ≤133 µg/kg (7 sa), country: Turkey⁵³⁵

AFLATOXINS (TOTAL)

incidence: 612/2,884* **, conc. range:
≤3,300 µg/kg, country: USA¹⁶⁴, *shelled,
**from country elevator storage, farmer
loads, and blended grain at country
elevators and freshly harvested

incidence: 19/19, conc. range: 0.01–
32.3 µg/kg, Ø conc.: 10.94 µg/kg, country:
Turkey¹⁶⁹

incidence: 7/7, conc. range: 0.09–1.5 µg/
kg, Ø conc.: 0.78 µg/kg, country: Turkey¹⁶⁹,
sa from USA

incidence: 7/14, conc. range: 1.7–11.3 µg/
kg, Ø conc.: 6.4 µg/kg, country:
Argentina¹⁹⁴

incidence: 7/17, conc. range: 0.2–22.4 µg/
kg, Ø conc.: 4.94 µg/kg, country:
Argentina¹⁹⁴

incidence: 28/54*, conc. range: ≤1.69 µg/
kg, country: Kuwait⁴²¹, *yellow maize
(poultry feed)

incidence: 37/74, Ø conc.: 628 µg/kg,
country: India⁴³⁸

incidence: 5/5, conc. range: 1.18–21.8 µg/
kg, Ø conc.: 4.17 µg/kg, country: Brazil/
Argentina⁴⁴⁴, sa from Brazil

AFLATOXINS

incidence: 4/13, conc. range: 5–50 µg/kg
(2 sa), 51–500 µg/kg (2 sa), country:
Australia²¹

incidence: 17/150*, conc. range:
38.0–460.0 µg/kg, Ø conc.: 191 µg/kg,
country: Brazil/Cuba/Japan¹¹¹, sa from
Brazil, *freshly harvested corn

incidence: 146/1,012*, conc. range: <20 µg/
kg (100 sa), <100 µg/kg (32 sa), <200 µg/kg
(10 sa), <300 µg/kg (2 sa), >300 µg/kg
(2 sa), country: USA¹⁹⁵, *shelled

incidence: 70/173*, conc. range: <20 µg/kg
(61 sa), <100 µg/kg (5 sa), <200 µg/kg
(1 sa), <300 µg/kg (1 sa), >300 µg/kg
(2 sa), country: USA¹⁹⁵, *shelled

incidence: 71/123*, conc. range: <20 µg/kg
(29 sa), <100 µg/kg (28 sa), <200 µg/kg
(7 sa), <300 µg/kg (2 sa), >300 µg/kg
(5 sa), country: USA¹⁹⁵, *shelled

incidence: 65/203, conc. range: ≤3,872 µg/
kg, country: USA²⁸⁰

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), country: USA³⁰², *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), country: USA³⁰²,
*ncac, **1.8 kg sa

incidence: 41/95*, conc. range:
10–29 µg/kg (15 sa), 30–49 µg/kg
(9 sa), 50–100 µg/kg (8 sa),
>100–≤300 µg/kg (9 sa), country: India³⁴⁹,
*poultry feed

incidence: 6/6, conc. range: 2–4 µg/kg,
country: Egypt³⁵⁷

incidence: ?/114* **, conc. range:
≤10 µg/kg, country: South Africa/

Zambia⁵³⁰, sa from Zambia, *ncac,
**preharvest maize

STERIGMATOCYSTIN

incidence: 4/155*, conc. range: pr,
country: South Africa⁷⁹, *ncac

incidence: 2/16, conc. range: ~50 µg/kg,
country: Czechoslovakia⁶⁰⁴

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 10/26, conc. range: 400–
12,000 µg/kg, country: India³³

incidence: 21/26*, conc. range:
≤9,000 µg/kg, country: Indonesia³⁴,
*poultry feed

incidence: 19/26* **, conc. range:
30–9,220 µg/kg, Ø conc.: 2,117 µg/kg,
country: Indonesia/Australia¹⁰⁵, sa from
Indonesia, *sa collected over 1 year,
**poultry feed

incidence: 18/60*, conc. range: 20–380 µg/
kg, country: USA⁵²¹, *freshly harvested
maize for silage

KOJIC ACID

incidence: 3/155*, conc. range: pr,
country: South Africa⁷⁹, *ncac

OCHRATOXIN A

incidence: 71/760, conc. range:
60–1,850 µg/kg, Ø conc.: 320 µg/kg,
country: Hungary⁶

incidence: 8/26, conc. range: 4.9–132 µg/
kg, country: Brazil¹¹

incidence: 3/40*, conc. range: 1.7–82 µg/
kg, Ø conc.: 80.3 µg/kg, country:
Germany¹³, *ncac

incidence: 1/3*, conc.: 12 µg/kg, country:
Egypt¹⁶, *white maize

incidence: 9/27, conc. range: 0.5–12.2 µg/
kg, country: Mexico/Spain²⁰, sa from Spain

incidence: 3/26, conc. range: <100 µg/kg
(2 sa), 100–1,000 µg/kg (1 sa), country:
Austria²⁹

incidence: 50/191, conc. range:
45–5,125 µg/kg, Ø conc.: 490 µg/kg,
country: Yugoslavia⁷⁵

incidence: 1/6, conc.: 73 µg/kg, country:
Netherlands¹⁰³

incidence: 1/26* **, conc.: 3 µg/kg,
country: Indonesia/Australia¹⁰⁵, sa from
Indonesia, *sa collected over 1 year,
**poultry feed

incidence: 5/29, conc. range: 13–39 µg/kg,
country: Germany¹⁸⁶

incidence: 51/7,345 overall*, conc. range: nc,
country: Hungary²⁰⁹, *different kinds of sa

incidence: 1/283*, conc.: 110–150 µg/kg,
country: USA²¹⁷, *ncac

incidence: 3/293* **, conc. range:
83–166 µg/kg, Ø conc.: 122.7 µg/kg,
country: USA²¹⁸, *ncac, **export cargo

incidence: 12/463, conc. range: 20–200 µg/
kg, Ø conc.: 74.6 µg/kg, country: France²⁶²

incidence: 6/461, conc. range: 20–200 µg/
kg, Ø conc.: 52.5 µ/kg, country: France²⁶²

incidence: 4/60, conc. range: 10–22 µg/kg,
country: Canada³⁴⁶

incidence: 17/51*, conc. range: 0.02–
40.00 µg/kg, country: Croatia³⁷¹, sa from
Croatia and Slovenia, *ncac

incidence: 2/110*, conc. range: 128–
206 µg/kg, Ø conc.: 167 µg/kg, country:
Brazil³⁹⁴, *ncac

incidence: 19/49* **, conc. range: 0.9–
2.54 µg/kg, Ø conc.: 1.47 µg/kg, country:
Croatia⁴¹⁷, *ncac, **visually mold free

incidence: 31/32*, conc. range: 5–14.5 µg/
kg, Ø conc.: 6.38 µg/kg, country: Kuwait⁴²¹,
*yellow maize (poultry feed)

incidence: 4/61*, conc. range: ≤114 µg/kg,
Ø conc.: 66.25 µg/kg, country: Bangladesh/
UK⁴²⁸, sa from Bangladesh, *ncac

incidence: 5/32, conc. range: 1.9–8.3 µg/
kg, Ø conc.: 4.9 µg/kg, country:
Hungary⁴⁶⁴

incidence: 10/105, conc. range: 0.36–223.6 µg/kg, Ø conc.: 37.87 µg/kg, country: Croatia/Italy⁴⁹⁸, sa from Croatia

incidence: 36/104, conc. range: 0.26–613.7 µg/kg, Ø conc.: 57.13 µg/kg, country: Croatia/Italy⁴⁹⁸, sa from Croatia

incidence: 1/1*, conc.: 1.66 µg/kg**, country: Poland⁵⁰⁶, *ncac, **in moist grain

incidence: 1/1*, conc.: 1.93 µg/kg**, country: Poland⁵⁰⁶, *ncac, **in dry grain

incidence: 3/27, conc. range: <100 µg/kg (2 sa), 100–1,000 µg/kg (1 sa), country: Austria⁵⁰⁹

incidence: 14/90*, conc. range: 1–2 µg/kg, country: Italy⁵²⁶, *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), country: Italy⁵³², *ncac

incidence: 15/33*, conc. range: 42–224 µg/kg, country: Brazil/Argentina⁵⁶³, sa from Brazil, *swine feed

incidence: 28/36*, conc. range: 1.13–7.32 µg/kg, Ø conc.: 4.0 µg/kg, country: Pakistan/UK⁵⁷⁷, sa from Pakistan

incidence: 1/9, conc.: 0.35 µg/kg, country: Iran/Italy⁵⁹⁹, sa from Iran

incidence: 9/36, conc. range: ≤143 µg/kg, Ø conc.: 20 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

OCHRATOXIN B

incidence: 2/293* **, conc. range: tr, country: USA²¹⁸, *ncac, **export cargo

PATULIN

incidence: 4/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 10/60*, conc. range: 10–910 µg/kg, country: USA⁵²¹, *freshly harvested maize for silage

Fusarium Toxins

BEAUVERICIN

incidence: 4/6* **, conc. range: 5,000–10,000 µg/kg, Ø conc.: 7,500 µg/kg, country: Italy⁵², *ncac, **preharvest maize

incidence: 3/30*, conc. range: ≤73 µg/kg, country: Denmark⁹⁷, *cattle feed

incidence: 42/43*, conc. range: ≤998 µg/kg, country: Denmark⁹⁷, *cattle feed

incidence: 2/5, conc. range: 500 µg/kg, country: USA/Italy¹¹³, sa from USA

incidence: 1/11* **, conc.: 3,000 µg/kg, country: Slovakia/Italy¹⁷⁵, sa from Slovakia, *ncac, **visibly moldy maize ears collected at preharvest

incidence: 12/12, conc. range: 1,800–36,890 µg/kg, Ø conc.: 15,220 µg/kg, country: Poland²⁵⁹

incidence: 13/14* ** ***, conc. range: 5,000–60,000 µg/kg, Ø conc.: 17,500 µg/kg, country: Italy/Poland²⁶⁹, sa from Poland, *ncac, **preharvest, ***visibly moldy

incidence: 4/42* **, conc. range: 4,000–40,000 µg/kg, Ø conc.: 21,000 µg/kg, country: Italy²⁷⁵, *preharvest, **visibly moldy

incidence: 18/105*, conc. range: 13–1,864 µg/kg, Ø conc.: 393 µg/kg, country: Croatia/Italy³¹⁸, sa from Croatia, *for food and feed

incidence: 1/104*, conc.: 696 µg/kg, country: Croatia/Italy³¹⁸, sa from Croatia, *for food and feed

DEOXYNIVALENOL

incidence: 83/760, conc. range: 50–870 µg/kg, Ø conc.: 191 µg/kg, country: Hungary⁶

incidence: 4/4*, conc. range: 100–222 µg/kg, Ø conc.: 178 µg/kg, country: Egypt¹⁶, *yellow hybrid maize

incidence: 4/4*, conc. range: 70–700 µg/kg, Ø conc.: 345 µg/kg, country: Egypt¹⁶, white maize

incidence: 161/161, conc. range: <100 µg/kg (1 sa), 100–<500 µg/kg (21 sa), 500–<1,000 µg/kg (17 sa), 1,000–<2,000 µg/kg (53 sa), 2,000–<5,000 µg/kg (52 sa), ≥5,000 µg/kg (17 sa), country: Austria²⁶

incidence: 57/57, conc. range: 100–<500 µg/kg (34 sa), 500–<1,000 µg/kg (14 sa), 1,000–<2,000 µg/kg (8 sa), 2,000–<5,000 µg/kg (1 sa), country: Austria²⁶

incidence: 3/3*, conc. range: 140–250 µg/kg, Ø conc.: 200 µg/kg, country: UK³⁶, sa imported?, *maize from flaking plant

incidence: 2/2*, conc. range: 170–180 µg/kg, Ø conc.: 175 µg/kg, country: UK³⁶, sa imported?, *distillers maize grains

incidence: 4/6*, conc. range: 120–240 µg/kg, Ø conc.: 180 µg/kg, country: UK³⁶, sa imported?

incidence: 2/5*, conc. range: 160–210 µg/kg, Ø conc.: 185 µg/kg, country: UK³⁶, sa imported?, *maize-based, dried distillers solubles

incidence: 3/161*, conc. range: pr, country: South Africa⁴⁴, *ncac

incidence: 17/20* **, conc. range: 400–65,800 µg/kg, Ø conc.: 20,300 µg/kg, country: USA⁴⁸, *dent corn, **moldy or damaged by hail

incidence: 2/23 overall* **, conc. range: 200–1,300 µg/kg, Ø conc.: 700 µg/kg, country: Hungary⁵⁰, *ncac, **different kinds of sa

incidence: 3/6* ** ***, conc. range: 550–50,500 µg/kg, Ø conc.: 17,350 µg/kg, country: Italy⁵¹, sa from Austria, *ncac, **preharvest, ****Fusarium*-infected

incidence: 8/8, conc. range: 18–668 µg/kg*, Ø conc.: 188.75 µg/kg*, country: Italy⁵³, *in corn stalk rot sa

incidence: 14/30, conc. range: ≤160,000 µg/kg, Ø conc.: 13,000 µg/kg, country: Romania/Germany⁵⁴, sa from Romania

incidence: 2/3, conc. range: 140–600 µg/kg, Ø conc.: 370 µg/kg, country: Japan/France⁶¹, sa from France

incidence: 3/12*, conc. range: 4,000–18,800 µg/kg, Ø conc.: 10,100 µg/kg, country: Nigeria⁶⁴, *moldy

incidence: 4/7, conc. range: 1,000–2,000 µg/kg, country: Germany⁶⁸

incidence: 6/28, conc. range: 30–120 µg/kg, country: Germany⁶⁸

incidence: 24/52, conc. range: 500–10,700 µg/kg, Ø conc.: 4,992 µg/kg, country: USA⁷¹

incidence: 8/8?, conc. range: 4,700–15,000 µg/kg, Ø conc.: 8,913 µg/kg, country: USA⁷¹

incidence: 4/4*, conc. range: 100–340 µg/kg, Ø conc.: 192.5 µg/kg, country: UK⁹⁵, **"baby" maize

incidence: 3/6, conc. range: 100–190 µg/kg, Ø conc.: 140 µg/kg, country: Netherlands¹⁰³

incidence: 16/33*, conc. range: 500–16,000 µg/kg, Ø conc.: 5,560 µg/kg, country: Zambia¹¹⁴, *visibly moldy

incidence: 2/2*, conc. range: 270–400 µg/kg, Ø conc.: 335 µg/kg, country: Canada¹²⁰, sa probably from Canada, *ncac

incidence: 2/2, conc. range: 900–3,200 µg/kg, Ø conc.: 2,050 µg/kg, country: Canada¹³⁰

incidence: 3/6* **, conc. range: 200–300 µg/kg, Ø conc.: 233.3 µg/kg, country: New Zealand¹³¹, *ncac, **field maize

incidence: 2/7* **, conc. range: 30–90 µg/kg, Ø conc.: 60 µg/kg, country: New Zealand¹³¹, *ncac, **harvest maize

incidence: 4/5*, conc. range: 20–100 µg/kg, Ø conc.: 62.5 µg/kg, country: New Zealand¹³¹, *stored maize destined for animal consumption

incidence: 926/926, conc. range: <100 µg/kg (531 sa), 100–500 µg/kg (202 sa), 500–1,000 µg/kg (103 sa), 1,000–2,000 µg/kg (68 sa), 2,000–5,000 µg/kg (19 sa), >5,000 µg/kg (3 sa), country: Austria¹⁸²

incidence: 4/12, conc. range: 159.9–834.4 µg/kg, Ø conc.: 355.4 µg/kg, country: Argentina¹⁹⁴

incidence: 98?/98*, conc. range: <500 µg/kg (95 sa), 500–1,000 µg/kg (2 sa), 1,230 µg/kg (1 sa), Ø conc.: 194 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 104?/104*, conc. range: <500 µg/kg (8 sa), 500–1,000 µg/kg (17 sa), ≤9,357 µg/kg (79 sa), Ø conc.: 2,716 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 94?/94*, conc. range: <500 µg/kg (44 sa), 500–1,000 µg/kg (20 sa), ≤3,116 µg/kg (33 sa), Ø conc.: 802 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 114?/114*, conc. range: <500 µg/kg (96 sa), 500–1,000 µg/kg (13 sa), ≤1,511 µg/kg (5 sa), Ø conc.: 298 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 93?/93*, conc. range: <500 µg/kg (74 sa), 500–1,000 µg/kg (15 sa), ≤1,915 µg/kg (4 sa), Ø conc.: 290 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 2/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 116/144, conc. range: 42–9,200 µg/kg, Ø conc.: 932 µg/kg, country: Austria²²³

incidence: 2/2*, conc. range: 2,500–7,400 µg/kg, Ø conc.: 4,950 µg/kg,

country: South Africa²²⁸, sa from South Africa and Zambia, *visibly moldy

incidence: 4/5*, conc. range: 240–570 µg/kg, Ø conc.: 410 µg/kg, country: Japan²³⁰, *ncac

incidence: 3/3*, conc. range: 24–36 µg/kg, Ø conc.: 30.7 µg/kg, country: Netherlands²³², sa of unknown origin, *ncac

incidence: 129/342 overall*, conc. range: 230–41,600 µg/kg, Ø conc.: 3,100 µg/kg, country: USA²³⁷, *different kinds of sa

incidence: 81/85, conc. range: ≤2,435 µg/kg, Ø conc.: 728 µg/kg, country: Austria²³⁹

incidence: 3*/94 overall**, conc. range: 20–105 µg/kg, Ø conc.: 52.7 µg/kg, country: Canada²⁴⁰, *consumed by swine, **different kinds of sa

incidence: 9/209*, conc. range: 43–315 µg/kg, country: Spain²⁴², *freshly harvested and stored sa

incidence: 9/223, conc. range: 15,000–28,000 µg/kg, Ø conc.: 22,250 µg/kg, country: USA²⁵¹

incidence: 24/52, conc. range: 500–10,700 µg/kg, Ø conc.: 4991.7 µg/kg, country: USA²⁵⁵

incidence: 3/5, conc. range: 1,300–7,900 µg/kg, Ø conc.: 5,700 µg/kg, country: USA²⁹², sa from Austria and Canada

incidence: 1/7, conc.: 1,900 µg/kg, country: Poland/Austria/Sweden³⁴⁵, sa from Poland

incidence: 1/7*, conc.: 63,000 µg/kg, country: Poland/Austria/Sweden³⁴⁵, sa from Poland, *axial stems

incidence: 600/673, conc. range: ≤17,500 µg/kg, Ø conc.: 530 µg/kg, country: Canada³⁴⁶

incidence: 3/5* **, conc. range: 12,500–175,200 µg/kg, Ø conc.: 88,633 µg/

kg, country: Italy/Poland³⁴⁸, sa from Poland, *ncac, **kernels

incidence: 15/45*, conc. range: $\leq 1,500$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 140 $\mu\text{g}/\text{kg}$, country: USA³⁵², *ncac

incidence: 41/46, conc. range: 60–2,810 $\mu\text{g}/\text{kg}$, \emptyset conc.: 645 $\mu\text{g}/\text{kg}$, country: Austria³⁶³

incidence: 38/58, conc. range: 50–580 $\mu\text{g}/\text{kg}$, \emptyset conc.: 140 μ/kg , country: Austria³⁶³

incidence: 36/48, conc. range: 50–1,360 $\mu\text{g}/\text{kg}$, \emptyset conc.: 380 $\mu\text{g}/\text{kg}$, country: Austria³⁶³

incidence: ?/126*, conc. range: $\leq 1,950$ $\mu\text{g}/\text{kg}$, country: Germany³⁶⁴, *corn/corn products

incidence: 24/24, conc. range: 14–4,700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,101 $\mu\text{g}/\text{kg}$, country: Germany³⁶⁶

incidence: 15/18*, conc. range: tr–2,800 $\mu\text{g}/\text{kg}$, \emptyset conc.: 400 $\mu\text{g}/\text{kg}$, country: France⁴⁰⁴, sa from different countries, *ncac

incidence: 14/21*, conc. range: tr–558 $\mu\text{g}/\text{kg}$, \emptyset conc.: 70 $\mu\text{g}/\text{kg}$, country: France⁴⁰⁴, sa from different countries, *ncac

incidence: 5/9*, conc. range: 100–500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 200 $\mu\text{g}/\text{kg}$, country: Cameroon/South Africa/ Benin⁴¹⁶, sa from Cameroon (origin: humid forest), *ncac

incidence: 9/9*, conc. range: 100–1,300 $\mu\text{g}/\text{kg}$, \emptyset conc.: 433 $\mu\text{g}/\text{kg}$, country: Cameroon/ South Africa/ Benin⁴¹⁶, sa from Cameroon (origin: western highlands), *ncac

incidence: 29/32*, conc. range: ≤ 350 $\mu\text{g}/\text{kg}$, country: Kuwait⁴²¹, *yellow maize (poultry feed)

incidence: 10/61*, conc. range: ≤ 337 $\mu\text{g}/\text{kg}$, country: Bangladesh/UK⁴²⁸, sa from Bangladesh, *ncac

incidence: 54/54*, conc. range: 42–3,680 $\mu\text{g}/\text{kg}$, \emptyset conc.: 753 $\mu\text{g}/\text{kg}$,

country: Austria/Italy⁴³⁹, sa from Austria, *ncac

incidence: 3/3, conc. range: 90–680 $\mu\text{g}/\text{kg}$, \emptyset conc.: 476.6 $\mu\text{g}/\text{kg}$, country: Austria⁴⁴¹, sa from Austria, Germany, and Slovakia

incidence: 48/50, conc. range: $\leq 2,100$ $\mu\text{g}/\text{kg}$, country: USA⁴⁴²

incidence: 20/46*, conc. range: 5–3,430 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1003.2 $\mu\text{g}/\text{kg}$, country: Italy⁴⁴⁸, *ncac

incidence: 4/7, conc. range: ≤ 568 $\mu\text{g}/\text{kg}$, country: Italy⁴⁵²

incidence: 1/1*, conc.: 17,630 $\mu\text{g}/\text{kg}$, country: Germany⁴⁵³, *cm

incidence: 1/1*, conc.: 212 $\mu\text{g}/\text{kg}$, country: Germany⁴⁵³, *ucm

incidence: 17/24*, conc. range: 70–21,200 $\mu\text{g}/\text{kg}$, country: Hungary⁴⁶³, *moldy sa

incidence: 478/478, conc. range: 0–100 $\mu\text{g}/\text{kg}$ (37 sa), 101–500 $\mu\text{g}/\text{kg}$ (178 sa), 501–1,000 $\mu\text{g}/\text{kg}$ (108 sa), $\leq 8,300$ $\mu\text{g}/\text{kg}$ (155 sa), country: Austria⁴⁹¹

incidence: 67/68, conc. range: 5–4,565 $\mu\text{g}/\text{kg}$, \emptyset conc.: 277.1 $\mu\text{g}/\text{kg}$, country: Korea⁵⁰⁰, sa from China

incidence: 1/2*, conc.: 180 $\mu\text{g}/\text{kg}^{**}$, country: Poland⁵⁰⁶, *ncac (one dry grain and one moist grain sa)

incidence: 25/93*, conc. range: 4–871 $\mu\text{g}/\text{kg}$, \emptyset conc.: 247.6 $\mu\text{g}/\text{kg}$, country: Italy⁵⁰⁸, *ncac

incidence: 12/21, conc. range: 40–560 $\mu\text{g}/\text{kg}$, \emptyset conc.: 150 $\mu\text{g}/\text{kg}$, country: Sweden⁵⁴², sa imported

incidence: 23/31*, conc. range: 28–12,400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1846.7 $\mu\text{g}/\text{kg}$, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 15/15*, conc. range: 730–5,440 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2766.7 $\mu\text{g}/\text{kg}$, country: USA⁵⁵², *ncac

incidence: 41/41, conc. range: $\leq 3,820$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 849 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

incidence: 29/29*, conc. range: 25–2,159 $\mu\text{g}/\text{kg}$, \emptyset conc.: 749 $\mu\text{g}/\text{kg}$, country: Austria⁵⁷⁶, *ncac

incidence: 11/42, conc. range: 300–12,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3,103.6 $\mu\text{g}/\text{kg}$, country: Poland⁵⁹⁷

incidence: 219/312, conc. range: $\leq 10,626$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,104 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 197/244, conc. range: $\leq 3,970$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,073 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

DEOXYNIVALENOL-3- β -D-GLUCOSIDE

incidence: 54/54*, conc. range: 10–763 $\mu\text{g}/\text{kg}$, \emptyset conc.: 141 $\mu\text{g}/\text{kg}$, country: Austria/Italy⁴³⁹, sa from Austria, *ncac

incidence: 2/3, conc. range: 70 $\mu\text{g}/\text{kg}$, \emptyset conc.: 70 $\mu\text{g}/\text{kg}$, country: Austria⁴⁴¹, sa from Austria, Germany, and Slovakia

3-ACETYLDEOXYNIVALENOL

incidence: 8/30, conc.: $\leq 7,900$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,200 $\mu\text{g}/\text{kg}$, country: Romania/Germany⁵⁴, sa from Romania

incidence: 3/85, conc. range: ≤ 113 $\mu\text{g}/\text{kg}$, \emptyset conc.: 107 $\mu\text{g}/\text{kg}$, country: Austria²³⁹

incidence: 2/60, conc. range: 140–180 $\mu\text{g}/\text{kg}$, \emptyset conc.: 160 $\mu\text{g}/\text{kg}$, country: Canada³⁴⁶

incidence: 2/5* **, conc. range: 2,400–7,500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,950 $\mu\text{g}/\text{kg}$, country: Italy/Poland³⁴⁸, sa from Poland, *ncac, **kernels

incidence: 6/46, conc. range: 60–130 $\mu\text{g}/\text{kg}$, \emptyset conc.: 90 $\mu\text{g}/\text{kg}$, country: Austria³⁶³

incidence: 11/24, conc. range: 14–137 $\mu\text{g}/\text{kg}$, \emptyset conc.: 43 $\mu\text{g}/\text{kg}$, country: Germany³⁶⁶

incidence: 6/54*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, *ncac

incidence: 1/3, conc.: 10 $\mu\text{g}/\text{kg}$, country: Austria⁴⁴¹, sa from Austria, Germany, and Slovakia

incidence: 1/1*, conc.: 90 $\mu\text{g}/\text{g}$, country: Germany⁴⁵³, *cm

incidence: 26/68, conc. range: 3–234 $\mu\text{g}/\text{kg}$, \emptyset conc.: 37.0 $\mu\text{g}/\text{kg}$, country: Korea⁵⁰⁰, sa from China

incidence: 20/93*, conc. range: 2–514 $\mu\text{g}/\text{kg}$, \emptyset conc.: 77.2 $\mu\text{g}/\text{kg}$, country: Italy⁵⁰⁸, *ncac

incidence: 16/41, conc. range: ≤ 322 $\mu\text{g}/\text{kg}$, \emptyset conc.: 66 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

15-ACETYLDEOXYNIVALENOL

incidence: 7/20* **, conc. range: 900–7,900 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,100 $\mu\text{g}/\text{kg}$, country: USA⁴⁸, *dent corn, **moldy or damaged by hail

incidence: 11/30, conc. range: $\leq 42,000$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,500 $\mu\text{g}/\text{kg}$, country: Romania/Germany⁵⁴, sa from Romania

incidence: 4/4*, conc. range: 30–90 $\mu\text{g}/\text{kg}$, \emptyset conc.: 52.5 $\mu\text{g}/\text{kg}$, country: UK⁹⁵, **"baby" maize

incidence: 46/85, conc. range: $\leq 1,112$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 284 $\mu\text{g}/\text{kg}$, country: Austria²³⁹

incidence: 2*/94 overall**, conc. range: 16–80 $\mu\text{g}/\text{kg}$, \emptyset conc.: 48 $\mu\text{g}/\text{kg}$, country: Canada²⁴⁰, *consumed by swine, **different kinds of sa

incidence: 15/60, conc. range: 100–320 $\mu\text{g}/\text{kg}$, \emptyset conc.: 80 $\mu\text{g}/\text{kg}$, country: Canada³⁴⁶

incidence: 2/5* **, conc. range: 500–600 $\mu\text{g}/\text{kg}$, \emptyset conc.: 550 $\mu\text{g}/\text{kg}$, country: Italy/Poland³⁴⁸, sa from Poland, *ncac, **kernels

incidence: 28/46, conc. range: 60–980 $\mu\text{g}/\text{kg}$, \emptyset conc.: 265 $\mu\text{g}/\text{kg}$, country: Austria³⁶³

incidence: 10/58, conc. range: 50–190 $\mu\text{g}/\text{kg}$, \emptyset conc.: 90 $\mu\text{g}/\text{kg}$, country: Austria³⁶³

incidence: 27/48, conc. range: 60–830 µg/kg, Ø conc.: 210 µg/kg, country: Austria³⁶³

incidence: 24/24, conc. range: 28–800 µg/kg, Ø conc.: 175 µg/kg, country: Germany³⁶⁶

incidence: 43/54*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, *ncac

incidence: 1/3, conc.: 100 µg/kg, country: Austria⁴⁴¹, sa from Austria, Germany, and Slovakia

incidence: 2/7, conc. range: 184–231 µg/kg, Ø conc.: 207.5 µg/kg, country: Italy⁴⁵²

incidence: 1/1*, conc.: 5,500 µg/kg, country: Germany⁴⁵³, *ncac

incidence: 49/68, conc. range: 2–181 µg/kg, Ø conc.: 34.3 µg/kg, country: Korea⁵⁰⁰, sa from China

incidence: 41/41, conc. range: ≤680 µg/kg, Ø conc.: 160 µg/kg, country: Germany⁵⁷²

3-ACETYLDEOXYNIVALENOL + 15-ACETYLDEOXYNIVALENOL

incidence: 12/46*, conc. range: 6–3,500 µg/kg, Ø conc.: 314.3 µg/kg, country: Italy⁴⁴⁸, *ncac

ENNIATIN A

incidence: 1/30*, conc. range: <17 µg/kg, country: Denmark⁹⁷, *cattle feed

incidence: 5/43*, conc. range: ≤106 µg/kg, country: Denmark⁹⁷, *cattle feed

ENNIATIN A₁

incidence: 3/30*, conc. range: <34 µg/kg, country: Denmark⁹⁷, *cattle feed

incidence: 15/43*, conc. range: ≤107 µg/kg, country: Denmark⁹⁷, *cattle feed

ENNIATIN B

incidence: 27/30*, conc. range: ≤489 µg/kg, country: Denmark⁹⁷, *cattle feed

incidence: 43/43*, conc. range: <24–≤2,598 µg/kg, country: Denmark⁹⁷, *cattle feed

ENNIATIN B₁

incidence: 14/30*, conc. range: ≤79 µg/kg, country: Denmark⁹⁷, *cattle feed

incidence: 36/43*, conc. range: ≤496 µg/kg, country: Denmark⁹⁷, *cattle feed

FUMONISIN B₁

incidence: 23/23, conc. range: 68–6,555 µg/kg, Ø conc.: 1,357 µg/kg, country: UK/Honduras³, sa from Honduras

incidence: 11/22*, conc. range: 165–3,688 µg/kg, Ø conc.: 1,876.2 µg/kg, country: Uruguay/Canada/USA⁷, sa from Uruguay, *ncac

incidence: 11/11, conc. range: 1,270–3,980 µg/kg, Ø conc.: 2,269 µg/kg, country: South Africa/Iran²², sa from Iran

incidence: 32/35, conc. range: < 200 µg/kg (4 sa), 200–1,000 µg/kg (23 sa), ≤2,000 µg/kg (5 sa), country: South Africa⁴⁴

incidence: 6/6* **, conc. range: 125,000–250,000 µg/kg, Ø conc.: 187,500 µg/kg, country: Italy⁵², *ncac, **preharvest maize

incidence: 1/30, conc.: 140 µg/kg, country: Romania/Germany⁵⁴, sa from Romania

incidence: 3/3, conc. range: 37,000–122,000 µg/kg, Ø conc.: 77,000 µg/kg, country: USA⁵⁶

incidence: 14/14, conc. range: 1,300–27,000 µg/kg, Ø conc.: 7,700 µg/kg, country: South Africa/USA⁵⁷, sa from USA

incidence: 30/31*, conc. range: ≤195,000 µg/kg, country: USA⁵⁸, *associated with animal health problems (ELEM, PPE)

incidence: 2/2, conc. range: 20,000–150,000 µg/kg, Ø conc.: 85,000 µg/kg, country: USA⁵⁹

incidence: 4/4*, conc. range: 45–570 µg/kg, Ø conc.: 296.3 µg/kg, country: UK⁹⁵, **"baby" maize

incidence: 3/3*, conc. range: 400–4,400 µg/kg, Ø conc.: 2,566.7 µg/kg, country: South Africa¹⁰⁰, *ncac

incidence: 8/15, conc. range: 271–3,447 µg/kg, Ø conc.: 1,101 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

incidence: 5/5, conc. range: 300–400 µg/kg, Ø conc.: 320 µg/kg, country: USA/Italy¹¹³, sa from USA

incidence: 3/3*, conc. range: 63–464 µg/kg, Ø conc.: 217.3 µg/kg, country: Japan¹¹⁷, sa from Thailand, *visually moldy corn

incidence: 1/2*, conc.: 453 µg/kg, country: Japan¹¹⁷, sa from Thailand, *visually healthy corn

incidence: 1/1, conc.: 86,000 µg/kg, country: USA/Egypt¹³⁹, sa from USA

incidence: 8/9, conc. range: 600–4,100 µg/kg, Ø conc.: 1,750 µg/kg, country: Japan/Korea/Brazil/Nepal/China¹⁴¹, sa from Argentina, South Africa, and USA

incidence: 5/12, conc. range: 53–1,327 µg/kg, Ø conc.: 506 µg/kg, country: Korea/Japan¹⁴⁵, sa from Korea

incidence: ?/165, conc. range: ≤8,550 µg/kg, country: South Africa¹⁴⁷

incidence: 5/5, conc. range: 10,000–23,000 µg/kg, country: South Africa¹⁴⁷, sa from USA

incidence: 17/51*, conc. range: <100–2,300 µg/kg, country: South Africa¹⁴⁷, sa from Canada (3 sa fresh maize), *ncac

incidence: 50/?/68* **, conc. range: <50–5,420 µg/kg, Ø conc.: 570 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: 55/?/66* **, conc. range: <20–5,030 µg/kg, Ø conc.: 380 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/77* **, conc. range: ≤3,050 µg/kg, Ø conc.: 320 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/71* **, conc. range: ≤1,810 µg/kg, Ø conc.: 340 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/113* **, conc. range: ≤5,640 µg/kg, Ø conc.: 320 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: 31/53* **, conc. range: <50–1,120 µg/kg, Ø conc.: 180 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: 50/62* **, conc. range: <20–1,060 µg/kg, Ø conc.: 180 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/82* **, conc. range: ≤1,840 µg/kg, Ø conc.: 190 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/76* **, conc. range: ≤740 µg/kg, Ø conc.: 170 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/117* **, conc. range: ≤11,700 µg/kg, Ø conc.: 680 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/12* **, conc. range: ≤2,040 µg/kg, Ø conc.: 410 µg/kg***, country: South Africa¹⁴⁷, *ncac, **quality-protein maize, ***mean of all sa

incidence: ?/59* **, conc. range: ≤4,400 µg/kg, Ø conc.: 340 µg/kg***, country: South Africa¹⁴⁷, *ncac, **quality-protein maize, ***mean of all sa

incidence: ?/22, conc. range: ≤14,900 µg/kg, country: USA¹⁵¹

incidence: ?/44, conc. range: $\leq 37,900$ $\mu\text{g}/\text{kg}$, country: USA¹⁵¹

incidence: ?/59, conc. range: $\leq 19,100$ $\mu\text{g}/\text{kg}$, country: USA¹⁵¹

incidence: ?/50, conc. range: $\leq 15,800$ $\mu\text{g}/\text{kg}$, country: USA¹⁵¹

incidence: 7/7, conc. range: 80–16,310 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,882.8 $\mu\text{g}/\text{kg}$, country: USA¹⁵³

incidence: 48/55, conc. range: 200–19,200 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,800 $\mu\text{g}/\text{kg}$, country: Spain¹⁵⁵

incidence: 214/214*, conc. range: ≥ 200 – $\leq 1,000$ $\mu\text{g}/\text{kg}$ (42 sa), $> 1,000$ – $\leq 3,000$ $\mu\text{g}/\text{kg}$ (124 sa), $> 3,000$ – $\leq 6,000$ $\mu\text{g}/\text{kg}$ (48 sa), country: Brazil¹⁵⁷, *ncac

incidence: 12/17*, conc. range: $\leq 2,200$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 588 $\mu\text{g}/\text{kg}$, country: Spain¹⁵⁹

incidence: 38/44*, conc. range: 100–160,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 18,500 $\mu\text{g}/\text{kg}$, country: Korea¹⁶⁰, *moldy corn

incidence: 1/1*, conc.: 1,848 $\mu\text{g}/\text{kg}$, country: USA¹⁶¹, *ncac

incidence: 10/11* **, conc. range: 10–26,900 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4,729 $\mu\text{g}/\text{kg}$, country: Slovakia/Italy¹⁷⁵, sa from Slovakia, *ncac, **visibly moldy maize ears collected at pre-harvest

incidence: 11/11* **, conc. range: 10–12,100 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,645.5 $\mu\text{g}/\text{kg}$, country: Slovakia/Italy¹⁷⁵, sa from Slovakia, *ncac, **visibly moldy maize ears collected at preharvest

incidence: 10/10*, conc. range: 360–1,270 $\mu\text{g}/\text{kg}$, \emptyset conc.: 807 $\mu\text{g}/\text{kg}$, country: South Africa¹⁹⁰, sa from USA, *ncac

incidence: 98?/98*, conc. range: $< 1,000$ $\mu\text{g}/\text{kg}$ (34 sa), 1,000–5,000 $\mu\text{g}/\text{kg}$ (47 sa), $\leq 51,690$ $\mu\text{g}/\text{kg}$ (17 sa), \emptyset conc.: 3,347 $\mu\text{g}/\text{kg}$, country: Italy²⁰⁶, *ncac

incidence: 104?/104*, conc. range: $< 1,000$ $\mu\text{g}/\text{kg}$ (47 sa), 1,000–5,000 $\mu\text{g}/\text{kg}$

(55 sa), $\leq 7,285$ $\mu\text{g}/\text{kg}$ (2 sa), \emptyset conc.: 1,324 $\mu\text{g}/\text{kg}$, country: Italy²⁰⁶, *ncac

incidence: 94?/94*, conc. range: $< 1,000$ $\mu\text{g}/\text{kg}$ (25 sa), 1,000–5,000 $\mu\text{g}/\text{kg}$ (60 sa), $\leq 47,087$ μ/kg (9 sa), \emptyset conc.: 3,103 $\mu\text{g}/\text{kg}$, country: Italy²⁰⁶, *ncac

incidence: 114?/114*, conc. range: $< 1,000$ $\mu\text{g}/\text{kg}$ (32 sa), 1,000–5,000 $\mu\text{g}/\text{kg}$ (67 sa), $\leq 13,763$ $\mu\text{g}/\text{kg}$ (15 sa), \emptyset conc.: 2,655 $\mu\text{g}/\text{kg}$, country: Italy²⁰⁶, *ncac

incidence: 93?/93*, conc. range: $< 1,000$ $\mu\text{g}/\text{kg}$ (15 sa), 1,000–5,000 $\mu\text{g}/\text{kg}$ (36 sa), $\leq 21,132$ $\mu\text{g}/\text{kg}$ (42 sa), \emptyset conc.: 5,173 $\mu\text{g}/\text{kg}$, country: Italy²⁰⁶, *ncac

incidence: 81/103* **, conc. range: 70–1,780 $\mu\text{g}/\text{kg}$, \emptyset conc.: 495 $\mu\text{g}/\text{kg}$, country: Nigeria²⁰⁷, *ncac, **preharvest maize

incidence: 20/20*, conc. range: < 50 –4,100 $\mu\text{g}/\text{kg}$, country: USA²²⁰, *for food and feed

incidence: 5/141, conc. range: 7–33 $\mu\text{g}/\text{kg}$, country: Germany²⁴⁸

incidence: 85/317, conc. range: 6–4,828 $\mu\text{g}/\text{kg}$, country: Germany²⁴⁸

incidence: 43/56, conc. range: 50–33,400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,175 $\mu\text{g}/\text{kg}$, country: Hungary²⁶⁶

incidence: 4/42* **, conc. range: 150,000–250,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 202,500 $\mu\text{g}/\text{kg}$, country: Italy²⁷⁵, *preharvest, **visibly moldy

incidence: 17/24*, conc. range: $\leq 19,800$ $\mu\text{g}/\text{kg}$, country: Hungary²⁸⁹, *moldy sa

incidence: 16/23*, conc. range: $\leq 52,400$ $\mu\text{g}/\text{kg}$, country: Hungary²⁸⁹, *moldy sa

incidence: 16/22*, conc. range: $\leq 75,100$ $\mu\text{g}/\text{kg}$, country: Hungary²⁸⁹, *moldy sa

incidence: 7/23*, conc. range: 60–5,100 µg/kg, country: Hungary²⁸⁹, *non-moldy sa

incidence: 35/35*, conc. range: 4–16,000 µg/kg, Ø conc.: 2,500 µg/kg, country: Denmark/Costa Rica³⁰⁸, sa from Costa Rica, *ncac

incidence: 48/48*, conc. range: ≤18,520 µg/kg, country: Brazil/Japan³⁰⁹, sa from Brazil, *for food and feed

incidence: 176/195* **, conc. range: 870–49,310 µg/kg, country: Brazil³³⁵, *ncac, **local maize hybrids

incidence: 4/78*, conc. range: ≤1,614 µg/kg, Ø conc.: 619 µg/kg, country: Taiwan³³⁷, sa from USA, *for food and feed

incidence: 2/20*, conc. range: 281.4–334 µg/kg, Ø conc.: 307.7 µg/kg, country: Taiwan³³⁷, sa from Thailand, *for food and feed

incidence: 2/10*, conc. range: 187–477 µg/kg, Ø conc.: 332 µg/kg, country: Taiwan³³⁷, sa from Australia, *for food and feed

incidence: 20/20, conc. range: 580–7,660 µg/kg, Ø conc.: 3,180 µg/kg, country: South Africa/Iran³³⁸, sa from Iran

incidence: 19/25, conc. range: 136.4–8,757 µg/kg, Ø conc.: 1,709.7 µg/kg, country: Spain³⁴⁷

incidence: 52/57, conc. range: 110–17,690 µg/kg, country: Brazil³⁵¹

incidence: 45/45*, conc. range: tr–30,000 µg/kg, Ø conc.: 9,500 µg/kg, country: USA³⁵², *ncac

incidence: 2/46, conc. range: 90–250 µg/kg, Ø conc.: 170 µg/kg, country: Austria³⁶³

incidence: 3/58, conc. range: 60–1,030 µg/kg, Ø conc.: 410 µg/kg, country: Austria³⁶³

incidence: 5/48, conc. range: 260–1,750 µg/kg, Ø conc.: 870 µg/kg, country: Austria³⁶³

incidence: 23/23* **, conc. range: 1,630–25,690 µg/kg, Ø conc.: 5,610 µg/kg, country: Brazil³⁶⁵, *ncac, **belonging to 19 corn cultivars

incidence: 50/50* **, conc. range: 185–27,050 µg/kg, Ø conc.: 2,229 µg/kg, country: Argentina/Italy³⁸², sa from Argentina, *ncac, **corn hybrids

incidence: 26/35*, conc. range: 10–4,700 µg/kg, country: India³⁸⁶, *ncac

incidence: 19/19* **, conc. range: 40–64,700 µg/kg, country: India³⁸⁶, *ncac, **rain-affected

incidence: 149/150*, conc. range: 70–13,460 µg/kg, Ø conc.: 2,390 µg/kg, country: Brazil/Japan³⁹⁰, sa from Brazil, *ncac

incidence: 91/100, conc. range: <1,000 µg/kg (14 sa), 1,000–20,000 µg/kg (15 sa), 21,000–40,000 µg/kg (19 sa), 41,000–60,000 µg/kg (27 sa), 61,000–80,000 µg/kg (14 sa), ≤87,000 µg/kg (2 sa), country: India/USA³⁹¹, sa from India

incidence: 1/1*, conc.: 33,103 µg/kg, country: Denmark⁴⁰², sa from Ghana, *visually moldy grain used as poultry feed

incidence: 212/214*, conc. range: 200–6,100 µg/kg, Ø conc.: 2,200 µg/kg, country: Brazil⁴⁰³, *for food and feed

incidence: 9/9*, conc. range: 1,900–26,000 µg/kg, Ø conc.: 7,477 µg/kg, country: Cameroon/South Africa/Benin⁴¹⁶, sa from the Cameroon (origin: humid forest), *ncac

incidence: 7/9*, conc. range: 300–2,000 µg/kg, Ø conc.: 1,214 µg/kg, country: Cameroon/South Africa/ Benin⁴¹⁶, sa from Cameroon (origin: western highlands), *ncac

incidence: 49/49* **, conc. range: 142.2–1,377.6 µg/kg, Ø conc.: 459.8 µg/kg, country: Croatia⁴¹⁷, *ncac, **visually mold-free

incidence: 30/30*, conc. range: 460–9,950 µg/kg, Ø conc.: 3,939 µg/kg, country: Argentina/South Africa⁴²², sa from Argentina, *ncac

incidence: 6/61*, conc. range: ≤ 600 $\mu\text{g}/\text{kg}$,
country: Bangladesh/UK⁴²⁸, sa from
Bangladesh, *ncac

incidence: 5/5*, conc. range: 765.00–
6,202.9 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,241.41 $\mu\text{g}/\text{kg}$,
country: USA⁴³¹, *whole and cracked
corn

incidence: 1/1*, conc.: 3,750 $\mu\text{g}/\text{kg}$,
country: Japan/Thailand⁴³⁴, sa of
unknown origin, *ncac

incidence: 105/105, conc. range: 100–
6,580 $\mu\text{g}/\text{kg}$, country: Brazil⁴⁴³

incidence: 87/87, conc. range: 1,150–
43,800 $\mu\text{g}/\text{kg}$, country: Brazil⁴⁴³

incidence: 17/24*, conc. range:
50–19,800 $\mu\text{g}/\text{kg}$, country: Hungary⁴⁶³,
*moldy sa

incidence: 1/1*, conc.: 24,300 $\mu\text{g}/\text{kg}$,
country: South Africa⁴⁷³, sa from USA,
*associated with ELEM and
hepatocarcinogenicity in rats

incidence: 281/282*, conc. range:
3–71,121 $\mu\text{g}/\text{kg}$, \emptyset conc.: 6,662 $\mu\text{g}/\text{kg}^{**}$,
country: China⁴⁷⁷, *for food and feed,
**for all sa

incidence: 27/68, conc. range:
11–1,428 $\mu\text{g}/\text{kg}$, \emptyset conc.: 122.7 $\mu\text{g}/\text{kg}$,
country: Korea⁵⁰⁰, sa from China

incidence: 9/98, conc. range:
<200–1,800 $\mu\text{g}/\text{kg}$, country: Canada⁵²⁷

incidence: 32/35, conc. range: 50–1,
746 $\mu\text{g}/\text{kg}$, \emptyset conc.: 585 $\mu\text{g}/\text{kg}$, country:
Colombia⁵⁴⁸

incidence: 196/200*, conc. range:
15–9,670 $\mu\text{g}/\text{kg}$, country: Brazil⁵⁶², *ncac

incidence: 11/14*, conc. range:
600–28,500 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7,254.5 $\mu\text{g}/\text{kg}$,
country: Mexico⁵⁶⁴

incidence: 18/70, conc. range: 30.0–177.9 $\mu\text{g}/$
 kg , \emptyset conc.: 69.8 $\mu\text{g}/\text{kg}$, country: Poland⁵⁹⁷

incidence: 30/52*, conc. range: 47–3,347 $\mu\text{g}/$
 kg , country: Argentina⁶⁰⁶, *ncac

incidence: 5/12, conc. range: 400–
3,300 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,344 $\mu\text{g}/\text{kg}$,
country: France⁶¹⁰, sa from Vietnam

FUMONISIN B₂

incidence: 11/11, conc. range: 190–
1,175 $\mu\text{g}/\text{kg}$, \emptyset conc.: 512 $\mu\text{g}/\text{kg}$, country:
South Africa/Iran²², sa from Iran

incidence: 3/3, conc. range: 2,000–
23,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 12,000 $\mu\text{g}/\text{kg}$,
country: USA⁵⁶

incidence: 14/14, conc. range: 1,000–
12,600 $\mu\text{g}/\text{kg}$, country: \emptyset conc.: 3,100 $\mu\text{g}/\text{kg}$,
country: South Africa/USA⁵⁷, sa from USA

incidence: 3/4, conc. range: 40–85 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 70 $\mu\text{g}/\text{kg}$, country: UK⁹⁵, **"baby"
maize

incidence: 3/3*, conc. range: 150–1,300 $\mu\text{g}/$
 kg , \emptyset conc.: 883.3 $\mu\text{g}/\text{kg}$, country: South
Africa¹⁰⁰, *ncac

incidence: 4/15, conc. range: 178–560 $\mu\text{g}/$
 kg , \emptyset conc.: 276 $\mu\text{g}/\text{kg}$, country: Japan/
Vietnam¹⁰⁴, sa from Vietnam

incidence: 4/5, conc. range: 800–1,500 $\mu\text{g}/$
 kg , \emptyset conc.: 975 $\mu\text{g}/\text{kg}$, country: USA/
Italy¹¹³, sa from USA

incidence: 2/3*, conc. range: 75–224 $\mu\text{g}/$
 kg , \emptyset conc.: 149.5 $\mu\text{g}/\text{kg}$, country:
Japan¹¹⁷, sa from Thailand, *visually
moldy corn

incidence: 1/2*, conc.: 50 $\mu\text{g}/\text{kg}$, country:
Japan¹¹⁷, sa from Thailand, *visually
healthy corn

incidence: 1/1, conc.: 55,000 $\mu\text{g}/\text{kg}$,
country: USA/Egypt¹³⁹, sa from USA

incidence: 8/9, conc. range: 300–10,200 $\mu\text{g}/$
 kg , \emptyset conc.: 2,287.5 $\mu\text{g}/\text{kg}$, country: Japan/
Korea/Brazil/Nepal/China¹⁴¹, sa from
Argentina, South Africa, and USA

incidence: 4/12, conc. range: 69–680 $\mu\text{g}/$
 kg , \emptyset conc.: 288 $\mu\text{g}/\text{kg}$, country: Korea/
Japan¹⁴⁵, sa from Korea

incidence: ?/165, conc. range: $\leq 1,500$ $\mu\text{g}/$
 kg , country: South Africa¹⁴⁷

incidence: 50?/68* **, conc. range: <50–1,600 µg/kg, Ø conc.: 190 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: 55?/66* **, conc. range: <20–1,670 µg/kg, Ø conc.: 140 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/77* **, conc. range: ≤270 µg/kg, Ø conc.: 30 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/71* **, conc. range: ≤740 µg/kg, Ø conc.: 50 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/113* **, conc. range: ≤1,430 µg/kg, Ø conc.: 80 µg/kg***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: 31/53* **, conc. range: <50–700 µg/kg, Ø conc.: 50 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: 50/62* **, conc. range: <20–320 µg/kg, Ø conc.: 70 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/82* **, conc. range: ≤690 µg/kg, Ø conc.: 30 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/76* **, conc. range: ≤540 µg/kg, Ø conc.: 30 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/117* **, conc. range: ≤5,690 µg/kg, Ø conc.: 220 µg/kg***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/12* **, conc. range: ≤1,090 µg/kg, Ø conc.: 120 µg/kg***, country: South Africa¹⁴⁷, *ncac, **quality-protein maize, ***mean of all sa

incidence: ?/59* **, conc. range: ≤1,290 µg/kg, Ø conc.: 110 µg/kg***, country: South Africa¹⁴⁷, *ncac, **quality-protein maize, ***mean of all sa

incidence: ?/22, conc. range: ≤5,700 µg/kg, country: USA¹⁵¹

incidence: ?/44, conc. range: ≤12,300 µg/kg, country: USA¹⁵¹

incidence: ?/59, conc. range: ≤6,100 µg/kg, country: USA¹⁵¹

incidence: ?/50, conc. range: ≤4,400 µg/kg, country: USA¹⁵¹

incidence: 7/7, conc. range: 30–4,020 µg/kg, Ø conc.: 811.4 µg/kg, country: USA¹⁵³

incidence: 22/55, conc. range: 200–5,900 µg/kg, Ø conc.: 1,900 µg/kg, country: Spain¹⁵⁵

incidence: 5/17*, conc. range: ≤700 µg/kg, Ø conc.: 338 µg/kg, country: Spain¹⁵⁹

incidence: 34/44*, conc. range: 900–46,000 µg/kg, Ø conc.: 5,600 µg/kg, country: Korea¹⁶⁰, *moldy corn

incidence: 1/1*, conc.: 1,092 µg/kg, country: USA¹⁶¹, *ncac

incidence: 11/11* **, conc. range: 5–5,100 µg/kg, Ø conc.: 479.5 µg/kg, country: Slovakia/Italy¹⁷⁵, sa from Slovakia, *ncac, **visibly moldy maize ears collected at pre-harvest

incidence: 11/11* **, conc. range: 10–6,350 µg/kg, Ø conc.: 1,043.6 µg/kg, country: Slovakia/Italy¹⁷⁵, sa from Slovakia, *ncac, **visibly moldy maize ears collected at pre-harvest

incidence: 10/10*, conc. range: 120–430 µg/kg, Ø conc.: 269 µg/kg, country: South Africa¹⁹⁰, sa from USA, *ncac

incidence: 68/103* **, conc. range: 53–230 µg/kg, Ø conc.: 114 µg/kg, country: Nigeria²⁰⁷, *ncac, **preharvest maize

incidence: 20/20*, conc. range:
<50–1,050 µg/kg, country: USA²²⁰, *for
food and feed

incidence: 48/48*, conc. range:
≤19,130 µg/kg, country: Brazil/Japan³⁰⁹, sa
from Brazil, *for food and feed

incidence: 190/195*, conc. range:
1,960–29,160 µg/kg, country: Brazil³⁵⁵,
*ncac, **local maize hybrids

incidence: 14/26, conc. range: 50–524 µg/
kg, country: Brazil³⁵¹

incidence: 19/31, conc. range:
50–5,240 µg/kg, country: Brazil³⁵¹

incidence: 10/45*, conc. range:
tr–10,700 µg/kg, Ø conc.: 1,700 µg/kg,
country: USA³⁵², *ncac

incidence: 1/58, conc.: 260 µg/kg, country:
Austria³⁶³

incidence: 2/48, conc. range: 250–390 µg/
kg, Ø conc.: 320 µg/kg, country: Austria³⁶³

incidence: 23/23* **, conc. range: 380–
8,600 µg/kg, Ø conc.: 1,860 µg/kg,
country: Brazil³⁶⁵, *ncac, **belonging to
19 corn cultivars

incidence: 50/50* **, conc. range:
40–9,950 µg/kg, Ø conc.: 812 µg/kg,
country: Argentina/Italy³⁸², sa from
Argentina, *ncac, **corn hybrids

incidence: 138/150*, conc. range:
80–6,920 µg/kg, country: Brazil/Japan³⁹⁰,
sa from Brazil, *ncac

incidence: 1/1, conc.: 12,318 µg/kg,
country: Denmark⁴⁰², sa from Ghana,
*visually moldy grain used as poultry feed

incidence: 3/49*, conc. range: 68.4–
3,084.0 µg/kg, Ø conc.: 1,087.2 µg/kg,
country: Croatia⁴¹⁷, *ncac, **visually
mold-free

incidence: 29/30*, conc. range: 140–
3,060 µg/kg, Ø conc.: 1,144 µg/kg,
country: Argentina/South Africa⁴²², sa
from Argentina, *ncac

incidence: 2/5*, conc. range: 2,357.23–
9,953.15 µg/kg, Ø conc.: 6,155.19 µg/kg,
country: USA⁴³¹, *whole and cracked corn

incidence: 1/1*, conc.: 1,440 µg/kg,
country: Japan/Thailand⁴³⁴, sa of
unknown origin, *ncac

incidence: 105/105, conc. range:
40–2,150 µg/kg, country: Brazil⁴⁴³

incidence: 87/87, conc. range:
80–11,650 µg/kg, country: Brazil⁴⁴³

incidence: 1/1*, conc.: 6,400 µg/kg,
country: South Africa⁴⁷³, sa from USA,
*associated with ELEM and
hepatocarcinogenicity in rats

incidence: 4/68, conc. range: 51–88 µg/kg,
Ø conc.: 66.0 µg/kg, country: Korea⁵⁰⁰, sa
from China

incidence: 9/98, conc. range: 300–
1,000 µg/kg, country: Canada⁵²⁷

incidence: 27/35, conc. range: 44–535 µg/
kg, Ø conc.: 222 µg/kg, country:
Colombia⁵⁴⁸

incidence: 149/200*, conc. range:
15–3,160 µg/kg, country: Brazil⁵⁶², *ncac

incidence: 12/70, conc. range: 9.7–40.5 µg/
kg, Ø conc.: 28.5 µg/kg, country: Poland⁵⁹⁷

incidence: 17/52*, conc. range: 23–537 µg/
kg, country: Argentina⁶⁰⁶, *ncac

FUMONISIN B₃

incidence: 11/11, conc. range: 155–960 µg/
kg, Ø conc.: 361 µg/kg, country: South
Africa/Iran²², sa from Iran

incidence: 3/15, conc. range: 118–432 µg/
kg, Ø conc.: 232 µg/kg, country: Japan/
Vietnam¹⁰⁴, sa from Vietnam

incidence: ?/165, conc. range: ≤740 µg/kg,
country: South Africa¹⁴⁷

incidence: 55?/66* **, conc. range: <20–
400 µg/kg, Ø conc.: 40 µg/kg***, country:
South Africa¹⁴⁷, *ncac, **white maize,
***mean of all sa

incidence: ?/77* **, conc. range: ≤ 340 $\mu\text{g}/\text{kg}$, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$ ***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/71* **, conc. range: ≤ 180 $\mu\text{g}/\text{kg}$, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$ ***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: ?/113* **, conc. range: ≤ 400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 30 $\mu\text{g}/\text{kg}$ ***, country: South Africa¹⁴⁷, *ncac, **white maize, ***mean of all sa

incidence: 50/62* **, conc. range: < 20 –200 $\mu\text{g}/\text{kg}$, \emptyset conc.: 20 $\mu\text{g}/\text{kg}$ ***, country: South Africa¹⁴⁷, *ncac, **yellow maize

incidence: ?/82* **, conc. range: ≤ 120 $\mu\text{g}/\text{kg}$, country: South Africa¹⁴⁷, *ncac, **yellow maize

incidence: ?/76* **, conc. range: ≤ 330 $\mu\text{g}/\text{kg}$, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$ ***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/117* **, conc. range: $\leq 1,960$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 110 $\mu\text{g}/\text{kg}$ ***, country: South Africa¹⁴⁷, *ncac, **yellow maize, ***mean of all sa

incidence: ?/12* **, conc. range: ≤ 60 $\mu\text{g}/\text{kg}$, country: South Africa¹⁴⁷, *ncac, **quality-protein maize

incidence: ?/59* **, conc. range: ≤ 800 $\mu\text{g}/\text{kg}$, \emptyset conc.: 40 $\mu\text{g}/\text{kg}$ ***, country: South Africa¹⁴⁷, *ncac, **quality-protein maize, ***mean of all sa

incidence: ?/22, conc. range: $\leq 2,100$ $\mu\text{g}/\text{kg}$, country: USA¹⁵¹

incidence: ?/44, conc. range: $\leq 4,000$ $\mu\text{g}/\text{kg}$, country: USA¹⁵¹

incidence: ?/59, conc. range: $\leq 2,800$ $\mu\text{g}/\text{kg}$, country: USA¹⁵¹

incidence: ?/50, conc. range: $\leq 2,300$ $\mu\text{g}/\text{kg}$, country: USA¹⁵¹

incidence: 32/44*, conc. range: 50–31,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,500 $\mu\text{g}/\text{kg}$, country: Korea¹⁶⁰, *moldy corn

incidence: 10/10*, conc. range: 50–210 $\mu\text{g}/\text{kg}$, \emptyset conc.: 102 $\mu\text{g}/\text{kg}$, country: South Africa¹⁹⁰, sa from USA, *ncac

incidence: 20/20*, conc. range: < 50 –420 $\mu\text{g}/\text{kg}$, country: USA²²⁰, *for food and feed

incidence: 1/1, conc.: 7,249 $\mu\text{g}/\text{kg}$, country: Denmark⁴⁰², sa from Ghana, *visually moldy grain used as poultry feed

incidence: 28/30*, conc. range: 90–1,070 $\mu\text{g}/\text{kg}$, \emptyset conc.: 432 $\mu\text{g}/\text{kg}$, country: Argentina/South Africa⁴²², sa from Argentina, *ncac

incidence: 2/5*, conc. range: 2,261.21–8,000.84 $\mu\text{g}/\text{kg}$, \emptyset conc.: 5,131.03 $\mu\text{g}/\text{kg}$, country: USA⁴³¹, *whole and cracked corn

incidence: 1/1*, conc.: 2,800 $\mu\text{g}/\text{kg}$, country: South Africa⁴⁷³, sa from USA, *associated with ELEM and hepatocarcinogenicity in rats

incidence: 2/68, conc. range: 56–57 $\mu\text{g}/\text{kg}$, \emptyset conc.: 56.5 $\mu\text{g}/\text{kg}$, country: Korea⁵⁰⁰, sa from China

incidence: 13/52*, conc. range: 24–287 $\mu\text{g}/\text{kg}$, country: Argentina⁶⁰⁶, *ncac

FUMONISIN B₄

incidence: 23/44*, conc. range: 80–11,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,600 $\mu\text{g}/\text{kg}$, country: Korea¹⁶⁰, *moldy corn

FUMONISINS (B₁ + B₂)

incidence: 21*/21, conc. range: 14–1,036 $\mu\text{g}/\text{kg}$, country: Germany²⁴⁸, sa from Argentina, *also contaminated with fumonisin B₃ (mean of all sa: 175 $\mu\text{g}/\text{kg}$)

incidence: 102/105, conc. range: 12–11,661 $\mu\text{g}/\text{kg}$, \emptyset conc.: 645 $\mu\text{g}/\text{kg}$, country: Croatia/Italy⁴⁹⁸, sa from Croatia

incidence: 97/104, conc. range:
12–2,524 µg/kg, Ø conc.: 134 µg/kg,
country: Croatia/Italy⁴⁹⁸, sa from Croatia

FUMONISINS (B₁ + B₂ + B₃)

incidence: 85/317, conc. range:
6–7,132 µg/kg, country: Germany²⁴⁸

FUMONISIN C₁

incidence: 31/44*, conc. range:
60–11,000 µg/kg, Ø conc.: 1,900 µg/kg,
country: Korea¹⁶⁰, *moldy corn

FUMONISIN C₃

incidence: 5/44*, conc. range:
100–12,000 µg/kg, Ø conc.: 1,700 µg/kg,
country: Korea¹⁶⁰, *moldy corn

FUMONISIN C₄

incidence: 18/44*, conc. range:
50–3,300 µg/kg, Ø conc.: 500 µg/kg,
country: Korea¹⁶⁰, *moldy corn

FUMONISIN

incidence: 233/234, conc. range: ≤500 µg/
kg (223 sa), 500–10,000 µg/kg (9 sa),
10,000–25,000 µg/kg (1 sa), country:
South Africa¹⁴⁷, sa from USA

incidence: 248/250, conc. range: ≤500 µg/kg
(226 sa), 500–10,000 µg/kg (11 sa), 10,000–
25,000 µg/kg (2 sa), >25,000 µg/kg (9 sa),
country: South Africa¹⁴⁷, sa from USA

incidence: 22/22*, conc. range: ≤500 µg/kg
(21 sa), 500–10,000 µg/kg (1 sa), country:
South Africa¹⁴⁷, sa from USA, *shelled
maize

incidence: 36/36*, conc. range: ≤500 µg/kg
(36 sa), country: South Africa¹⁴⁷, sa from
USA, *shelled maize

incidence: 134/461, conc. range:
≤1,710 µg/kg, Ø conc.: 310 µg/kg, country:
Canada³⁴⁶

incidence: 13/99, conc. range: 1,200–
3,200 µg/kg, Ø conc.: 2,400 µg/kg,
country: USA³⁷⁰

incidence: 29/32*, conc. range: ≤6,000 µg/
kg, country: Kuwait⁴²¹, *yellow maize
(poultry feed)

FUMONISINS (TOTAL)

incidence: 19/19, conc. range:
800–356,800 µg/kg, Ø conc.: 88,240 µg/kg,
country: Turkey¹⁶⁹

incidence: 7/7, conc. range:
3,950–262,500 µg/kg, Ø conc.:
74,150 µg/kg, country: Turkey¹⁶⁹,
sa from USA

incidence: 12/14, conc. range: 1,100–
34,700 µg/kg, Ø conc.: 11,050 µg/kg,
country: Argentina¹⁹⁴

incidence: 12/17, conc. range: 300–
16,100 µg/g, Ø conc.: 6,667 µg/kg,
country: Argentina¹⁹⁴

incidence: 282/282*, conc. range:
<1,000 µg/kg (123 sa), 1,001–2,000 µg/
kg (32 sa), 2,001–3,000 µg/kg (23 sa),
3,001–4,000 µg/kg (21 sa), 4,001–
5,000 µg/kg (12 sa), >5,000 µg/kg
(71 sa), country: China⁴⁷⁷, *for food
and feed

FUMONISINS

incidence: 5/14*, conc. range: 200–
3,700 µg/kg, Ø conc.: 1,900 µg/kg,
country: Nigeria/USA¹⁸, sa from Nigeria
(good quality), *ncac

incidence: 12/13*, conc. range: 1,400–
110,000 µg/kg, Ø conc.: 33,992 µg/kg,
country: Nigeria/USA¹⁸, sa from Nigeria
(poor quality), *ncac

incidence: 147/150*, conc. range:
96–22,600 µg/kg, Ø conc.: 5,356.7 µg/kg,
country: Brazil/Cuba/Japan¹¹¹, sa from
Brazil, *freshly harvested corn

incidence: 36/36* **, conc. range: 740–
22,600 µg/kg, Ø conc.: 9,900 µg/kg,
country: Brazil/Japan³³⁶, sa from Brazil,
*ncac, **freshly harvested maize

incidence: 36/36* **, conc. range: 810–
23,700 µg/kg, Ø conc.: 9,900 µg/kg,
country: Brazil/Japan³³⁶, sa from Brazil,
*ncac, **stored maize

incidence: 114/114* **, conc. range:
≤192,000 µg/kg, country: South Africa/

Zambia⁵³⁰, sa from Zambia, *ncac,
**preharvest maize

incidence: 213/309, conc. range:
≤14,714 µg/kg, Ø conc.: 1,335 µg/kg,
country: Austria/Singapore/USA⁶⁰⁸, sa
from Asia and Oceania

incidence: 9/16, conc. range: ≤2,174 µg/kg,
Ø conc.: 836 µg/kg, country: Austria/
Singapore/USA⁶⁰⁸, sa from Europe and
Mediterranean Region

FUSAPROLIFERIN

incidence: 2/5, conc. range: 100–300 µg/
kg, Ø conc.: 200 µg/kg, country: USA/
Italy¹¹³, sa from USA

incidence: 7/11* **, conc. range: 200–
8,200 µg/kg, Ø conc.: 3,807.1 µg/kg,
country: Slovakia/Italy¹⁷⁵, sa from
Slovakia, *ncac, **visibly moldy maize
ears collected at pre-harvest

incidence: 1/11* **, conc.: tr, country:
Slovakia/Italy¹⁷⁵, sa from Slovakia, *ncac,
**visibly moldy maize ears collected at
preharvest

incidence: 3/3*, conc. range: 32.6–45.3 µg/
kg, Ø conc.: 39.6 µg/kg, country: USA⁵⁹⁸,
*yellow corn sa from a feed mill

incidence: 1/2*, conc.: 297 µg/kg**,
country: USA⁵⁹⁸, *1 clean and 1 moldy**
maize sa

FUSARENON X

incidence: 4/12*, conc. range: 3,000–
15,000 µg/kg, Ø conc.: 7,500 µg/kg,
country: Nigeria⁶⁴, *moldy

incidence: 3/7*, conc. range: 900–2,400 µg/
kg, Ø conc.: 1,700 µg/kg, country: Poland/
Austria/Sweden³⁴⁵, sa from Poland, *axial
stems

incidence: 2/5* **, conc. range: 600–
1,800 µg/kg, Ø conc.: 1,400 µg/kg,
country: Italy/Poland³⁴⁸, sa from Poland,
*ncac, **kernels

incidence: 4/24, conc. range: 16–94 µg/kg,
Ø conc.: 55 µg/kg, country: Germany³⁶⁶

incidence: 6/46*, conc. range: 26–420 µg/kg,
Ø conc.: 119.8 µg/kg, country: Italy⁴⁴⁸, *ncac

incidence: 2/7, conc. range: 229–311 µg/
kg, Ø conc.: 270 µg/kg, country: Italy⁴⁵²

incidence: 9/93*, conc. range: 12–419 µg/kg,
Ø conc.: 101.1 µg/kg, country: Italy⁵⁰⁸, *ncac

incidence: 9/41, conc. range: ≤211 µg/kg,
Ø conc.: 62 µg/kg, country: Germany⁵⁷²

FUSARIC ACID

incidence: 14/16*, conc. range: 3,010–
28,770 µg/kg, Ø conc.: 11,750 µg/kg,
country: Canada⁶⁶, *dry corn (swine
feedstuff)

incidence: 11/14*, conc. range: 5,470–
135,640 µg/kg, Ø conc.: 26,370 µg/kg,
country: Canada⁶⁶, *high-moisture corn
(swine feedstuff)

incidence: 2/2, conc. range: 50,800–
65,200 µg/kg, Ø conc.: 58,000 µg/kg,
country: Canada¹³⁰

incidence: 1/1*, conc.: 70 µg/kg, country:
USA⁴¹³, *yellow seed corn (Trucker's
Favorite)

HT-2 TOXIN

incidence: 2/23 overall* **, conc. range:
500–700 µg/kg, Ø conc.: 600 µg/kg,
country: Hungary⁵⁰, *ncac, **different
kinds of sa

incidence: 1/12, conc.: 3,000 µg/kg,
country: Nigeria⁶⁴

incidence: 1/28, conc.: 600 µg/kg, country:
Germany⁶⁸

incidence: 1/1, conc.: nc, country:
Hungary²⁰⁹

incidence: 1/94 overall*, conc.: 1 µg/kg,
country: Canada²⁴⁰, *different kinds of sa

incidence: 14/60, conc. range: 110–
1,000 µg/kg, country: Canada³⁴⁶

incidence: 1/46, conc.: 110 µg/kg, country:
Austria³⁶³

incidence: 2/48, conc. range: 80–120 µg/kg, Ø conc.: 100 µg/kg, country: Austria³⁶³

incidence: 17/24, conc. range: 5–41 µg/kg, Ø conc.: 18 µg/kg, country: Germany³⁶⁶

incidence: 3/7, conc. range: 178–319 µg/kg, Ø conc.: 232.3 µg/kg, country: Italy⁴⁵²

incidence: 31/41, conc. range: ≤68 µg/kg, Ø conc.: 21 µg/kg, country: Germany⁵⁷²

MONILIFORMIN

incidence: 1/4*, conc.: 70 µg/kg, country: UK⁹⁵, **"baby" maize

incidence: 6/12, conc. range: 450–8,530 µg/kg, Ø conc.: 3,835 µg/kg, country: Poland²⁵⁹

incidence: 8/9* ** ***, conc. range: 17,000–425,000 µg/kg, Ø conc.: 133,750 µg/kg, country: Poland²⁶⁹, *ncac, **preharvest, ***visibly moldy

incidence: 1/42* **, conc.: 200,000 µg/kg, country: Italy²⁷⁵, *preharvest, **visibly moldy

incidence: 7/46, conc. range: 50–290 µg/kg, Ø conc.: 130 µg/kg, country: Austria³⁶³

incidence: 8/58, conc. range: 70–390 µg/kg, Ø conc.: 240 µg/kg, country: Austria³⁶³

incidence: 8/48, conc. range: 70–800 µg/kg, Ø conc.: 280 µg/kg, country: Austria³⁶³

incidence: 18/54*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, *ncac

incidence: 22/22, conc. range: 24–522 µg/kg, Ø conc.: 147.1 µg/kg, country: UK⁵¹³, sa from Argentina, France, Greece, and Italy

incidence: 2/12*, conc. range: 60–200 µg/kg, Ø conc.: 130 µg/kg, country: Canada⁵⁷³, *ncac

NEOSOLANIOL

incidence: 1/41, conc.: 9 µg/kg, country: Germany⁵⁷²

NIVALENOL

incidence: 3/760, conc. range: 130–260 µg/kg, Ø conc.: 186.7 µg/kg, country: Hungary⁶

incidence: 2/3, conc. range: 1,180–4,280 µg/kg, Ø conc.: 2,730 µg/kg, country: Japan/France⁶¹, sa from France

incidence: 3/12*, conc. range: 800–1,000 µg/kg, Ø conc.: 933.3 µg/kg, country: Nigeria⁶⁴, *moldy

incidence: 4/4, conc. range: 25–50 µg/kg, Ø conc.: 35 µg/kg, country: UK⁹⁵, **"baby" maize

incidence: 2/15, conc. range: 501–1,251 µg/kg, Ø conc.: 858 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

incidence: 4/85, conc. range: ≤133 µg/kg, Ø conc.: 89 µg/kg, country: Austria²³⁹

incidence: 1*/94 overall**, conc.: 311 µg/kg, country: Canada²⁴⁰, *consumed by swine, **different kinds of sa

incidence: 6/7, conc. range: 1,800–32,500 µg/kg, Ø conc.: 8,900 µg/kg, country: Poland/Austria/Sweden³⁴⁵, sa from Poland

incidence: 7/7*, conc. range: 2,600–13,500 µg/kg, Ø conc.: 7,900 µg/kg, country: Poland/Austria/Sweden³⁴⁵, sa from Poland, *axial stems

incidence: 2/60, conc. range: 120 µg/kg, Ø conc.: 120 µg/kg, country: Canada³⁴⁶

incidence: 2/5* **, conc. range: 33,200–42,500 µg/kg, Ø conc.: 37,850 µg/kg, country: Italy/Poland³⁴⁸, sa from Poland, *ncac, **kernels

incidence: 7/46, conc. range: 80–330 µg/kg, Ø conc.: 140 µg/kg, country: Austria³⁶³

incidence: 4/48, conc. range: 60–110 µg/kg, Ø conc.: 80 µg/kg, country: Austria³⁶³

incidence: 20/24, conc. range: 21–1,388 µg/kg, Ø conc.: 406 µg/kg, country: Germany³⁶⁶

incidence: 19/54*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, *ncac

incidence: 7/46*, conc. range: 12–2,440 µg/kg, Ø conc.: 548.9 µg/kg, country: Italy⁴⁴⁸, *ncac

incidence: 2/7, conc. range: 251–320 µg/kg, Ø conc.: 285.5 µg/kg, country: Italy⁴⁵²

incidence: 1/1*, conc.: 1,600 µg/kg, country: Germany⁴⁵³, *cm

incidence: 9/68, conc. range: 3–17 µg/kg, Ø conc.: 6.1 µg/kg, country: Korea⁵⁰⁰, sa from China

incidence: 1/2*, conc.: 170 µg/kg**, country: Poland⁵⁰⁶, *ncac (one dry grain and one moist grain sa), **in moist grain

incidence: 14/93*, conc. range: 7–240 µg/kg, Ø conc.: 67.3 µg/kg, country: Italy⁵⁰⁸, *ncac

incidence: 4/31*, conc. range: 58–185 µg/kg, Ø conc.: 99.3 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 25/41, conc. range: ≤1,388 µg/kg, Ø conc.: 291 µg/kg, country: Germany⁵⁷²

DIACETYLNIVALENOL

incidence: 1/1, conc.: nc, country: Hungary²⁰⁹

15-MONOACETOXYSCIRPENOL

incidence: 5/24, conc. range: 5–51 µg/kg, Ø conc.: 37 µg/kg, country: Germany³⁶⁶

incidence: 9/41, conc. range: ≤51 µg/kg, Ø conc.: 24 µg/kg, country: Germany⁵⁷²

DIACETOXYSCIRPENOL

incidence: 6/23 overall* **, conc. range: 500–2,100 µg/kg, Ø conc.: 1,233 µg/kg, country: Hungary⁵⁰, *ncac, **different kinds of sa

incidence: 1/6* ** ***, conc.: 400 µg/kg, country: Italy⁵¹, sa from Austria, *ncac, **preharvest, ****Fusarium*-infected

incidence: 1/30, conc.: 2.6 µg/kg, country: Romania/Germany⁵⁴, sa from Romania

incidence: 4/6* **, conc. range: 10–900 µg/kg, Ø conc.: 477.5 µg/kg, country: New Zealand¹³¹, *ncac, **field maize

incidence: 1/7* **, conc.: 30 µg/kg, country: New Zealand¹³¹, *ncac, **harvest maize

incidence: 4/7,345 overall, conc. range: nc, country: Hungary²⁰⁹

incidence: 1/94 overall*, conc.: 19 µg/kg, country: Canada²⁴⁰, *different kinds of sa

incidence: 3/60, conc. range: 490–1,000 µg/kg, country: Canada³⁴⁶

incidence: 1/24, conc.: 21 µg/kg, country: Germany³⁶⁶

incidence: 2/7, conc. range: 376–847 µg/kg, Ø conc.: 611.5 µg/kg, country: Italy⁴⁵²

incidence: 2/41, conc. range: ≤76 µg/kg, Ø conc.: 49 µg/kg, country: Germany⁵⁷²

SCIRPENTRIOL

incidence: 2/24, conc. range: 50–97 µg/kg, Ø conc.: 74 µg/kg, country: Germany³⁶⁶

incidence: 6/41, conc. range: ≤97 µg/kg, Ø conc.: 45 µg/kg, country: Germany⁵⁷²

T-2 TOXIN

incidence: 214/760, conc. range: 50–980 µg/kg, Ø conc.: 225.2 µg/kg, country: Hungary⁶

incidence: 8/23 overall* **, conc. range: 100–4,400 µg/kg, Ø conc.: 1267.5 µg/kg, country: Hungary⁵⁰, *ncac, **different kinds of sa

incidence: 1/30, conc.: 6.3 µg/kg, country: Romania/Germany⁵⁴, sa from Romania

incidence: 1/3, conc.: 20 µg/kg, country: Japan/France⁶¹, sa from France

incidence: 1/12*, conc.: pr, country: Nigeria⁶⁴, *moldy

incidence: 4/28, conc. range: 100–200 µg/kg, country: Germany⁶⁸

incidence: 4/6* **, conc. range: 7–200 µg/kg, Ø conc.: 106.8 µg/kg, country: New Zealand¹³¹, *ncac, **field maize

incidence: 5/7* **, conc. range: 5–200 µg/kg, Ø conc.: 73 µg/kg, country: New Zealand¹³¹, *ncac, **harvest maize

incidence: 4/5*, conc. range: 14–60 µg/kg, Ø conc.: 43.5 µg/kg, country: New Zealand¹³¹, *stored maize destined for animal consumption

incidence: 1/1*, conc.: 2,000 µg/kg, country: USA¹⁷⁹, *moldy corn

incidence: 60/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 12/60, conc. range: 100–1,000 µg/kg, country: Canada³⁴⁶

incidence: 1/46, conc.: 260 µg/kg, country: Austria³⁶³

incidence: 2/48, conc. range: 130–150 µg/kg, Ø conc.: 140 µg/kg, country: Austria³⁶³

incidence: ?/126*, conc. range: ≤8.4 µg/kg, country: Germany³⁶⁴, *corn/corn products

incidence: 6/24, conc. range: 6–8 µg/kg, Ø conc.: 7 µg/kg, country: Germany³⁶⁶

incidence: 9/61*, conc. range: ≤1,093 µg/kg, country: Bangladesh/UK⁴²⁸, sa from Bangladesh, *ncac

incidence: 4/7, conc. range: 160–389 µg/kg, Ø conc.: 259.8 µg/kg, country: Italy⁴⁵²

incidence: 10/24*, conc. range: 60–390 µg/kg, country: Hungary⁴⁶³, *moldy sa

incidence: 21/41, conc. range: ≤108 µg/kg, Ø conc.: 16 µg/kg, country: Germany⁵⁷²

incidence: 2/42, conc. range: 160–240 µg/kg, Ø conc.: 200.0 µg/kg, country: Poland⁵⁹⁷

incidence: 1/18, conc.: 188 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

T-2 TETRAOL

incidence: 1/41, conc.: 13 µg/kg, country: Germany⁵⁷²

T-2 TRIOL

incidence: 2/28, conc. range: 300 µg/kg, country: Germany⁶⁸

TRICHOTHECENES

incidence: 13/161*, conc. range: pr, country: South Africa⁴⁴, *ncac

incidence: 6/155*, conc. range: pr, country: South Africa⁷⁹, *ncac

ZEARALANONE

incidence: 2/46*, conc. range: 12–13 µg/kg, Ø conc.: 12.5 µg/kg, country: Italy⁴⁴⁸, *ncac

β-ZEARALANOL

incidence: 2/46*, conc. range: 6–8 µg/kg, Ø conc.: 7 µg/kg, country: Italy⁴⁴⁸, *ncac

ZEARALENONE

incidence: 140/760, conc. range: 60–1,350 µg/kg, Ø conc.: 228.9 µg/kg, country: Hungary⁶

incidence: 4/4*, conc. range: 2–79 µg/kg, Ø conc.: 42 µg/kg, country: Egypt¹⁶, *yellow hybrid maize

incidence: 4/4*, conc. range: 4–30 µg/kg, Ø conc.: 16 µg/kg, country: Egypt¹⁶, white maize

incidence: 4/27, conc. range: 0.47–2.24 µg/kg, country: Mexico/Spain²⁰, sa from Spain

incidence: 168/168, conc. range: <5 µg/kg (14 sa), 5–<20 µg/kg (24 sa), 20–<50 µg/kg (16 sa), 50–<100 µg/kg (41 sa), 100–<200 µg/kg (33 sa), ≥200 µg/kg (40 sa), country: Austria²⁶

incidence: 61/61, conc. range: <5 µg/kg (38 sa), 5–<20 µg/kg (15 sa), 20–<50 µg/kg (4 sa), 50–<100 µg/kg (2 sa), 100–<200 µg/kg (2 sa), country: Austria²⁶

incidence: 3/161*, conc. range: pr, country: South Africa⁴⁴, *ncac

incidence: 17/20* **, conc. range: 200–13,200 µg/kg, Ø conc.: 3,100 µg/kg, country: USA⁴⁸, *dent corn, **moldy or damaged by hail

incidence: 8/23 overall* **, conc. range: 700–7,500 µg/kg, Ø conc.: 3,575 µg/kg, country: Hungary⁵⁰, *ncac, **different kinds of sa

incidence: 3/6* ** ***, conc. range: 420–1,000 µg/kg, Ø conc.: 740 µg/kg, country: Italy⁵¹, sa from Austria, *ncac, **preharvest, ****Fusarium*-infected

incidence: 8/8, conc. range: 156–7,433 µg/kg*, Ø conc.: 2,667 µg/kg*, country: Italy⁵³, *in corn stalk rot sa

incidence: 4/30, conc. range: ≤1,200 µg/kg, Ø conc.: 420 µg/kg, country: Romania/Germany⁵⁴, sa from Romania

incidence: 2/3, conc. range: 2,500–10,000 µg/kg, Ø conc.: 6,250 µg/kg, country: Japan/France⁶¹, sa from France

incidence: 19/67, conc. range: 10–700 µg/kg, country: Germany⁶⁸

incidence: 2/28, conc. range: 20–30 µg/kg, country: Germany⁶⁸

incidence: 5/191, conc. range: 43–10,000 µg/kg, Ø conc.: 5,100 µg/kg, country: Yugoslavia⁷⁵

incidence: 9/155*, conc. range: pr, country: South Africa⁷⁹, *ncac

incidence: 6/76* **, conc. range: 100–200 µg/kg (2 sa), >200 µg/kg (4 sa), country: Uruguay/Italy⁹¹, sa from Uruguay, *ncac, **and by-products

incidence: 4/4, conc. range: 40–80 µg/kg, Ø conc.: 55 µg/kg, country: UK⁹⁵, **"baby" maize

incidence: 2/6, conc. range: 17–150 µg/kg, Ø conc.: 84 µg/kg, country: Netherlands¹⁰³

incidence: 7/26* **, conc. range: 1–14 µg/kg, Ø conc.: 6.3 µg/kg, country: Indonesia/Australia¹⁰⁵, sa from Indonesia, *sa collected over 1 year, **poultry feed

incidence: 6/7*, conc. range: 4.93–35.02 µg/kg, Ø conc.: 12.17 µg/kg, country: Germany¹⁰⁷, *ncac

incidence: 19/33*, conc. range: 400–6,000 µg/kg, Ø conc.: 1,100 µg/kg, country: Zambia¹¹⁴, *visibly moldy

incidence: 2/17*, conc. range: 60–100 µg/kg, Ø conc.: 80 µg/kg, country: Zambia¹¹⁴, *maize kernels

incidence: 44/226, conc. range: <100 µg/kg (33 sa), 100–1,000 µg/kg (9 sa), >1,000 µg/kg (2 sa), country: Austria¹¹⁵

incidence: 149/468, conc. range: <100 µg/kg (72 sa), 100–1,000 µg/kg (59 sa), >1,000 µg/kg (18 sa), country: Austria¹¹⁵

incidence: 118/350, conc. range: <100 µg/kg (63 sa), 100–1,000 µg/kg (47 sa), >1,000 µg/kg (8 sa), country: Austria¹¹⁵

incidence: 77/301, conc. range: <100 µg/kg (54 sa), 100–1,000 µg/kg (22 sa), >1,000 µg/kg (1 sa), country: Austria¹¹⁵

incidence: 197/495, conc. range: <100 µg/kg (165 sa), 100–1,000 µg/kg (32 sa), country: Austria¹¹⁵

incidence: 36/346, conc. range: <100 µg/kg (32 sa), 100–1,000 µg/kg (4 sa), country: Austria¹¹⁵

incidence: 42/125, conc. range: <100 µg/kg (42 sa), country: Austria¹¹⁵

incidence: 249/293, conc. range: ≤1,510 µg/kg, Ø conc.: 170 µg/kg*, country: Australia¹¹⁶, *for all sa

incidence: 11/52*, conc. range: 1–13,500 µg/kg, country: Indonesia/Australia¹¹⁸, sa from Indonesia, *included are purple, insect-damaged, BGYF, moldy, and good kernels

incidence: 7* **/395 overall***, conc. range: tr–3,656 µg/kg, country: USA¹¹⁹, *ncac, **unshelled corn, ***different kinds of sa

incidence: 31* **/395 overall***, conc. range: tr–480 µg/kg, country: USA¹¹⁹, *ncac, **shelled corn, ***different kinds of sa

incidence: 4/131, conc. range: ~100–2,500 µg/kg, country: Germany¹²⁴, sa from EU and USA

incidence: 6/6* **, conc. range: 300–2,200 µg/kg, Ø conc.: 783 µg/kg, country: New Zealand¹³¹, *ncac, **field maize

incidence: 4/7* **, conc. range: 200–16,000 µg /kg, Ø conc.: 5,425 µg /kg, country: New Zealand¹³¹, *ncac, **harvest maize

incidence: 3/5*, conc. range: 40–100 µg/kg, Ø conc.: 80 µg/kg, country: New Zealand¹³¹, *stored maize destined for animal consumption

incidence: 5/5*, conc. range: 2,500–306,000 µg kg, Ø conc.: 75,760 µg/kg, country: USA¹⁷³, of the 5 sa, 1 sa from Yugoslavia and 1 sa from England, *involved in porcine hyperestrogenism, abortion, or feed refusal

incidence: 937/937, conc. range: <10 µg/kg (574 sa), 10–50 µg/kg (195 sa), 50–200 µg/kg (124 sa), 200–500 µg/kg (29 sa), 500–1,000 µg/kg (11 sa), >1,000 µg/kg (4 sa) country: Austria¹⁸²

incidence: 1/10, conc.: 20 µg/kg, country: India¹⁸³

incidence: 11/14, conc. range: ≤2,564.8 µg/kg, Ø conc.: 293.7 µg/kg, country: Argentina¹⁹⁴

incidence: 98?/98*, conc. range: <200 µg/kg (89 sa), 200–490 µg/kg (9 sa), Ø conc.: 79 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 104?/104*, conc. range: <200 µg/kg (48 sa), 200–1,000 µg /kg (41 sa), ≤2,531 µg/kg (15 sa), Ø conc.: 453 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 94?/94*, conc. range: <200 µg/kg (91 sa), 200–590 µg/kg (3 sa), Ø conc.: 49 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 114ß/114*, conc. range: <200 µg/kg (113 sa), 356 µg/kg (1 sa), Ø conc.: 13 µg /kg, country: Italy²⁰⁶, *ncac

incidence: 93/93*, conc. range: <200 µg/kg (92 sa), 200–280 µg/kg (1 sa), Ø conc.: 27 µg/kg, country: Italy²⁰⁶, *ncac

incidence: 21/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 38*/223, conc. range: 100–300 µg/kg (20 sa), 400–900 µg/kg (10 sa), 1,000–5,000 µg/kg (8 sa), country: USA²¹⁶, *thereof 6 sa intended for food use (contamination: 200–500 µg/kg)

incidence: 2/283*, conc. range: 800–> 1,250 µg/kg, country: USA²¹⁷, *ncac

incidence: 5/293* **, conc. range: 450–750 µg/kg, Ø conc.: 590 µg/kg, country: USA²¹⁸, *ncac, **export cargo

incidence: 68/144, conc. range: 5–5,670 µg/kg, Ø conc.: 310 µg/kg, country: Austria²²³

incidence: 2*/4, conc. range: 6,400–12,800 µg kg, Ø conc.: 9,600 µg/kg, country: South Africa²²⁸, sa from South Africa and Zambia, *visibly moldy

incidence: 60/85, conc. range: ≤751 µg/kg, Ø conc.: 126 µg/kg, country: Austria²³⁹

incidence: 18/209*, conc. range: 800–9,600 µg/kg, country: Spain²⁴², *freshly harvested and stored sa

incidence: 6/223, conc. range: 200–5,000 µg/kg, Ø conc.: 1,750 µg/kg, country: USA²⁵¹

incidence: 27/31*, conc. range: 100–500 µg/kg (8 sa), 600–1,000 µg/kg (5 sa), 1,100–5,500 µg/kg (11 sa), 5,600–10,000 µg/kg (3 sa), country: USA²⁵⁴, *severely infected with *Gibberella zeae*

incidence: 5/6*, conc. range: 60–32,000 µg/kg, Ø conc.: 8,634 µg/kg, country: South Africa²⁶³, *sa consist of moldy ears, shelled maize mixed with good quality maize, and mixed ration

incidence: 16/328*, conc. range: 260–9,830 µg/kg, Ø conc.: 1,910 µg/kg, country: Brazil²⁷¹, *ncac

incidence: 10/20*, conc. range: 300–1,200 (4 sa) µg/kg, 1,300–4,000 (1 sa) µg/kg, country: Serbia/Syria³¹⁴, sa from Serbia, *artificially dried

incidence: 10/20*, conc. range: 300–1,200 (1 sa) µg/kg, 1,300–4,000 (5 sa) µg/kg, 4,100–8,500 (4 sa) µg/kg, country: Serbia/Syria³¹⁴, sa from Serbia, *crib dried

incidence: 167/671, conc. range: ≤1,000 µg/kg, Ø conc.: 80 µg/kg, country: Canada³⁴⁶

incidence: 5/5* **, conc. range: 700–10,000 µg/kg, Ø conc.: 4,140 µg/kg, country: Italy/Poland³⁴⁸, sa from Poland, *ncac, **kernels

incidence: 4/4*, conc. range: 7–2,910 µg/kg, Ø conc.: 830.3 µg/kg, country: USA³⁵⁴, *ncac

incidence: 29/46, conc. range: 20–280 µg/kg, Ø conc.: 90 µg/kg, country: Austria³⁶³

incidence: 5/58, conc. range: 20–140 µg/kg, Ø conc.: 40 µg/kg, country: Austria³⁶³

incidence: 21/48, conc. range: 10–340 µg/kg, Ø conc.: 60 µg/kg, country: Austria³⁶³

incidence: 23/24, conc. range: 2–310 µg/kg, Ø conc.: 42 µg/kg, country: Germany³⁶⁶

incidence: 29/35*, conc. range: 4–2,250 µg/kg, Ø conc.: 416 µg/kg, country: Romania/Germany³⁶⁷, sa from Romania, *ncac

incidence: 9/35*, conc. range: 4–192 µg/kg, Ø conc.: 36 µg/kg, country: Romania/Germany³⁶⁷, sa from Romania, *ncac

incidence: 5/75, conc. range: 70–150 µg/kg (5 sa), country: USA³⁷⁰

incidence: 1/110*, conc.: 4,640 µg/kg, country: Brazil³⁹⁴, *ncac

incidence: 30/380*, conc. range: 46.7 µg/kg (1 sa), 54.2–100 µg/kg (4 sa),

100–500 µg/kg (23 sa), ≤719.4 µg/kg (2 sa), country: Brazil³⁹⁸, *for food and feed

incidence: 65/214*, conc. range: 36.8–719 µg/kg, Ø conc.: 155 µg/kg, country: Brazil⁴⁰³, *for food and feed

incidence: 13/15*, conc. range: 4–140 µg/kg, Ø conc.: 48.8 µ/kg, country: Italy⁴⁰⁸, *ncac

incidence: 6/9*, conc. range: <50–50 µg/kg, country: Cameroon/South Africa/Benin⁴¹⁶, sa from Cameroon (origin: humid forest), *ncac

incidence: 9/9*, conc. range: <50–1,100 µg/kg, country: Cameroon/South Africa/ Benin⁴¹⁶, sa from Cameroon (origin: western highlands), *ncac

incidence: 41/49* **, conc. range: 0.43–39.12 µg/kg, Ø conc.: 3.84 µg/kg, country: Croatia⁴¹⁷, *ncac, **visually mold-free

incidence: 32/32*, conc. range: 50–99.6 µg/kg, Ø conc.: 54.2 µg/kg, country: Kuwait⁴²¹, *yellow maize (poultry feed)

incidence: 30/30*, conc. range: 3,000–7,000 µg/kg, Ø conc.: 5,480 µg/kg, country: Argentina/South Africa⁴²², sa from Argentina, *ncac

incidence: 6/61*, conc. range: ≤30 µg/kg, country: Bangladesh/UK⁴²⁸, sa from Bangladesh, *ncac

incidence: 148/174, conc. range: ≤2,070 µg/kg, Ø conc.: 230 µg/kg*, country: Australia⁴³³, *mean of all sa

incidence: 37/54*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, *ncac

incidence: 13/46*, conc. range: 8–969 µg/kg, Ø conc.: 165.7 µg/kg, country: Italy⁴⁴⁸, *ncac

incidence: 1/1*, conc.: 1,580 µg/kg, country: Germany⁴⁵³, *cm

incidence: 1/1*, conc.: 43 µg/kg, country: Germany⁴⁵³, *ucm

incidence: 21/24*, conc. range:
10–11,800 µg/kg, country: Hungary⁴⁶³,
*moldy sa

incidence: 3/6*, conc. range: 900–2,000 µg/
kg, Ø conc.: 1,366.7 µg/kg, country:
Portugal⁴⁷⁵, *ncac

incidence: 3/40, conc. range: 100–212 µg/
kg, Ø conc.: 140.7 µg/kg, country: Iran⁴⁸¹

incidence: 210/210, conc. range: 0–10 µg/
kg (136 sa), 11–50 µg/kg (37 sa),
51–100 µg/kg (20 sa), 100 µg/kg (17 sa),
country: Austria⁴⁹¹

incidence: 17/68, conc. range: 6–124 µg/
kg, Ø conc.: 39.4 µg/kg, country: Korea⁵⁰⁰,
sa from China

incidence: 2/10* **, Ø conc.: 40 µg/kg,
country: Egypt⁵¹⁶, *grind maize, **poultry
feedstuff ingredient

incidence: 23/90*, conc. range: 3–150 µg/
kg, country: Italy⁵²⁶, *ncac, **corn hybrids

incidence: 3/3, conc. range: 8.1–86.6 µg/
kg, Ø conc.: 31.0 µg/kg, country:
Indonesia/Austria⁵³⁶, sa from Indonesia

incidence: 3/29, conc. range: 100–360 µg/
kg, Ø conc.: 210 µg/kg, country: Sweden⁵⁴²,
sa imported

incidence: 15/31*, conc. range:
2–19,899 µg/kg, Ø conc.: 2,172.1 µg/kg,
country: Croatia/Japan⁵⁴⁷, sa from Croatia,
*for food and feed

incidence: 2/2, conc. range: 63–238 µg/kg,
Ø conc.: 150.5 µg/kg, country: Belgium⁵⁶⁷,
sa from France

incidence: 35/41, conc. range:
≤860 µg/kg, Ø conc.: 48 µg/kg, country:
Germany⁵⁷²

incidence: 4/24, conc. range: 38–254 µg /
kg, Ø conc.: 164 µg/kg, country:
Vietnam⁵⁸⁸

incidence: 8/42, conc. range: 30–1,344 µg /
kg, Ø conc.: 391.5 µg/kg, country:
Poland⁵⁹⁷

incidence: 128/312, conc. range: ≤6,468 µg /
kg, Ø conc.: 463 µg/kg, country: Austria/
Singapore/USA⁶⁰⁸, sa from Asia and
Oceania

incidence: 59/93, conc. range: ≤1,958 µg/
kg, Ø conc.: 279 µg/kg, country: Austria/
Singapore/USA⁶⁰⁸, sa from Europe and
Mediterranean Region

α-ZEARALENOL

incidence: 5/46*, conc. range: 7–33 µg/
kg, Ø conc.: 14 µg/kg, country: Italy⁴⁴⁸,
*ncac

β-ZEARALENOL

incidence: 8/46*, conc. range: 6–33 µg/kg,
Ø conc.: 15.5 µg/kg, country: Italy⁴⁴⁸, *ncac

ZEARALENOLS (α- AND β-ZEARALENOL)

incidence: 8/8, conc. range: 7–86 µg/kg*,
Ø conc.: 36.5 µg/kg*, country: Italy⁵³, *in
corn stalk rot sa

ZEARALENOL

incidence: 3* **/395 overall***, conc.
range: 14–106 µg/kg, Ø conc.: 49.3 µg/kg,
country: USA¹¹⁹, *ncac, **unshelled corn,
***different kinds of sa

incidence: 1* **/395 overall***, conc.:
19 µg/kg, country: USA¹¹⁹, *ncac,
shelled corn, *different kinds of sa

Penicillium Toxins

CITREOVIRIDIN

incidence: 5/8*, conc. range: 19–2,790 µg/
kg, Ø conc.: 1,230.6 µg/kg, country:
USA³²⁶, *ncac

CITRININ

incidence: 2/4*, conc. range: 10 µg/kg,
country: Egypt¹⁶, white maize

incidence: 1/30, conc.: 580 µg/kg, country:
Romania/Germany⁵⁴, sa from Romania

incidence: 1/1*, conc.: 450 µg/kg, country:
UK⁹³, *ncac

incidence: 6/7,345 overall*, conc. range: nc,
country: Hungary²⁰⁹, *different kinds of sa

MYCOPHENOLIC ACID

incidence: 16/60*, conc. range: 80–600 µg/kg, country: USA⁵²¹, *freshly harvested maize for silage

ROQUEFORTINE C

incidence: 30/60*, conc. range: 20–1,100 µg/kg, country: USA⁵²¹, *freshly harvested maize for silage

RUBRATOXIN B

incidence: 1/7,345 overall*, conc.: nc, country: Hungary²⁰⁹, *different kinds of sa

Maize and feed samples may contain the following mycotoxins:

Fusarium Toxins**FUMONISINS (B₁ + B₂)**

incidence: 252/291, conc. range: 100–5,000 µg/kg (156 sa), 5,100–10,000 µg/kg (48 sa), 10,100–50,000 µg/kg (41 sa), >50,000 µg/kg (7 sa), country: USA³⁰¹

Maize bran see Bran (maize)

Maize-based feed see Feed, maize-based

Maize by-products see By-products (maize)

Maize ears may contain the following mycotoxins:

Fusarium Toxins**FUMONISIN B₁**

incidence: 8/8* **, conc. range: ≤300,000 µg/kg, country: Italy³⁶⁹, *ncac, **preharvest

Maize feed, milo see Milo

Maize fiber may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN**

incidence: 46/59, conc. range: 1–10 µg/kg (38 sa), 11–20 µg/kg (8 sa), country: USA⁸⁶

Maize fine fractions may contain the following mycotoxins:

Fusarium Toxins**FUMONISIN B₁**

incidence: 10/10, conc. range: 8,660–21,350 µg/kg, Ø conc.: 13,390 µg/kg, country: South Africa¹⁹⁰, sa from USA

FUMONISIN B₂

incidence: 10/10, conc. range: 2,720–6,320 µg/kg, Ø conc.: 3,993 µg/kg, country: South Africa¹⁹⁰, sa from USA

FUMONISIN B₃

incidence: 10/10, conc. range: 960–2,450 µg/kg, Ø conc.: 1,671 µg/kg, country: South Africa¹⁹⁰, sa from USA

Maize flakes Feed maize flakes may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 2/2, conc. range: 51–145 µg/kg, Ø conc.: 98 µg/kg, country: India²⁴⁷

AFLATOXIN B₂

incidence: 2/2, Ø conc.: 11.87 µg/kg, country: India²⁴⁷

Fusarium Toxins**FUMONISIN B₁**

incidence: 2/3*, conc. range: 190–280 µg/kg, Ø conc.: 235 µg/kg, country: UK⁹⁵, *flaked maize

FUMONISIN B₂

incidence: 1/3, conc.: 50 µg/kg, country: UK⁹⁵, *flaked maize

MONILIFORMIN

incidence: 3/3, conc. range: 90–130 µg/kg, Ø conc.: 110 µg/kg, country: UK⁹⁵, *flaked maize

ZEARALENONE

incidence: 6/9, conc. range: 5–19 µg/kg (2 sa), 20–99 µg/kg (32 sa), 150 µg/kg (1 sa), country: UK⁹⁴, sa imported?

incidence: 3/3, conc. range: 80–110 µg/kg, Ø conc.: 140 µg/kg, country: UK⁹⁵, *flaked maize

Maize flour see Flour (maize)

Maize germ may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 4/5, conc. range: 1–4 µg/kg (1 sa), 5–≤17 µg/kg (3 sa), country: UK⁹⁴, sa imported?

AFLATOXINS (TOTAL)

incidence: 4/5, conc. range: 1–4 µg/kg (1 sa), 5–≤18 µg/kg (3 sa), country: UK⁹⁴, sa imported?

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 2/7, conc. range: 250–410 µg/kg, Ø conc.: 330 µg/kg, country: UK³⁶

incidence: 7/7, conc. range: 25–360 µg/kg, Ø conc.: 145 µg/kg, country: UK⁹⁵

15-ACETYLDEOXYNIVALENOL

incidence: 4/7, conc. range: 15–40 µg/kg, Ø conc.: 31.3 µg/kg, country: UK⁹⁵

FUMONISIN B₁

incidence: 7/7, conc. range: 4,200–7,400 µg/kg, Ø conc.: 5,728.6 µg/kg, country: UK⁹⁵

FUMONISIN B₂

incidence: 7/7, conc. range: 580–1,100 µg/kg, Ø conc.: 768.6 µg/kg, country: UK⁹⁵

FUMONISINS

incidence: 4/5, conc. range: 100–999 µg/kg (3 sa), 1,060 µg/kg (1 sa), country: UK⁹⁴, sa imported?

MONILIFORMIN

incidence: 7/7, conc. range: 660–1,100 µg/kg, Ø conc.: 778.6 µg/kg, country: UK⁹⁵

NIVALENOL

incidence: 1/7, conc.: 35 µg/kg, country: UK⁹⁵

ZEARALENONE

incidence: 1/5, conc.: 15 µg/kg, country: UK⁹⁴, sa imported?

incidence: 7/7, conc. range: 50–80 µg/kg, Ø conc.: 67.1 µg/kg, country: UK⁹⁵

Maize germ/bran may contain the following mycotoxins:

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 6/6, conc. range: 230–1,000 µg/kg, Ø conc.: 731.7 µg/kg, country: UK⁹⁵

15-ACETYLDEOXYNIVALENOL

incidence: 6/6, conc. range: 50–170 µg/kg, Ø conc.: 107.2 µg/kg, country: UK⁹⁵

FUMONISIN B₁

incidence: 6/6, conc. range: 390–1,500 µg/kg, Ø conc.: 1,083.3 µg/kg, country: UK⁹⁵

FUMONISIN B₂

incidence: 6/6, conc. range: 110–250 µg/kg, Ø conc.: 190 µg/kg, country: UK⁹⁵

FUSARENON X

incidence: 4/6, conc. range: 15–30 µg/kg, Ø conc.: 20 µg/kg, country: UK⁹⁵

HT-2 TOXIN

incidence: 6/6, conc. range: 10–35 µg/kg, Ø conc.: 20.8 µg/kg, country: UK⁹⁵

MONILIFORMIN

incidence: 6/6, conc. range: 270–570 µg/kg, Ø conc.: 426.7 µg/kg, country: UK⁹⁵

NIVALENOL

incidence: 6/6, conc. range: 80–400 µg/kg, Ø conc.: 196.7 µg/kg, country: UK⁹⁵

T-2 TOXIN

incidence: 4/6, conc. range: 10–20 µg/kg, Ø conc.: 15 µg/kg, country: UK⁹⁵

ZEARALENONE

incidence: 6/6, conc. range: 160–540 µg/kg, Ø conc.: 330 µg/kg, country: UK⁹⁵

Maize germ meal see Meal (maize germ)

Maize gluten Feed maize gluten may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN B₁**

incidence: 18/32, conc. range: 1–4 µg/kg (16 sa), 5–19 µg/kg (1 sa), 41 µg/kg (1 sa), country: UK⁹⁴, sa imported?

incidence: 6/7, conc. range: 26–50 µg/kg (3 sa), ≤103 µg/kg (3 sa), Ø conc.: 54.1 µg/kg, country: India²⁴⁷

incidence: 8/29, conc. range: 7–47 µg/kg, Ø conc.: 26 µg/kg, country: Sweden⁵⁴², sa imported

AFLATOXIN B₂

incidence: 5/7, Ø conc.: 14.04 µg/kg, country: India²⁴⁷

AFLATOXIN B

incidence: 3/11, conc. range: 6–57 µg/kg, Ø conc.: 24.3 µg/kg, country: Pakistan⁴¹²

AFLATOXIN G

incidence: 3/11, conc. range: ≤22 µg/kg, Ø conc.: 7.3 µg/kg, country: Pakistan⁴¹²

AFLATOXIN

incidence: 142/156, conc. range: 3–20 µg/kg (121 sa), 21–60 µg/kg (21 sa), country: USA⁸⁶

AFLATOXINS (TOTAL)

incidence: 19/32, conc. range: 1–4 µg/kg (15 sa), 5–19 µg/kg (3 sa), 47 µg/kg (1 sa), country: UK⁹⁴, sa imported?

Aspergillus and *Penicillium* Toxins**OCHRATOXIN A**

incidence: 2/13, conc. range: 0.7–3.2 µg/kg, country: Mexico/Spain²⁰, sa from Spain

incidence: 2/40, conc. range: 2–22 µg/kg, Ø conc.: 12 µg/kg, country: UK⁹⁵

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 6/7, conc. range: 130–410 µg/kg, Ø conc.: 283.3 µg/kg, country: UK³⁶

incidence: 39/40, conc. range: 50–5,000 µg/kg, Ø conc.: 545.4 µg/kg, country: UK⁹⁵

incidence: 6/6, conc. range: 220–1,900 µg/kg, Ø conc.: 1,000 µg/kg, country: Netherlands¹⁰³

incidence: 11/11*, conc. range: 86–2,455 µg/kg, Ø conc.: 1,166 µg/kg, country: Germany³⁶⁶, *maize gluten and gluten feed

incidence: 3/27, conc. range: 50–130 µg/kg, Ø conc.: 80 µg/kg, country: Sweden⁵⁴², sa imported

3-ACETYLDEOXYNIVALENOL

incidence: 3/40, conc. range: 10–30 µg/kg, Ø conc.: 20 µg/kg, country: UK⁹⁵

incidence: 5/11*, conc. range: 14–78 µg/kg, Ø conc.: 40 µg/kg, country: Germany³⁶⁶, *maize gluten and gluten feed

15-ACETYLDEOXYNIVALENOL

incidence: 38/40, conc. range: 10–400 µg/kg, Ø conc.: 135 µg/kg, country: UK⁹⁵

incidence: 9/11*, conc. range: 112–565 µg/kg, Ø conc.: 325 µg/kg, country: Germany³⁶⁶, *maize gluten and gluten feed

FUMONISIN B₁

incidence: 39/40, conc. range: 40–4,800 µg/kg, Ø conc.: 556.7 µg/kg, country: UK⁹⁵

incidence: 1/8, conc.: 32 µg/kg, country: Colombia⁵⁴⁸

FUMONISIN B₂

incidence: 23/40, conc. range: 25–400 µg/kg, Ø conc.: 92 µg/kg, country: UK⁹⁵

FUMONISINS

incidence: 27/32, conc. range: 100–999 µg/kg (21 sa), 1,000–≤4,550 µg/kg (6 sa), country: UK⁹⁴, sa imported?

FUSARENON X

incidence: 3/40, conc. range: 30–80 µg/kg, Ø conc.: 53.3 µg/kg, country: UK⁹⁵

HT-2 TOXIN

incidence: 3/40, conc. range: 10–30 µg/kg, Ø conc.: 20 µg/kg, country: UK⁹⁵

incidence: 9/11*, conc. range: 17–90 µg/kg, Ø conc.: 42 µg/kg, country: Germany³⁶⁶, *maize gluten and gluten feed

MONILIFORMIN

incidence: 17/40, conc. range: 50–320 µg/kg, Ø conc.: 113.5 µg/kg, country: UK⁹⁵

NIVALENOL

incidence: 2/40, conc. range: 600–1,400 µg/kg, Ø conc.: 1,000 µg/kg, country: UK⁹⁵

incidence: 4/11*, conc. range: 82–268 µg/kg, Ø conc.: 144 µg/kg, country: Germany³⁶⁶, *maize gluten and gluten feed

MONOACETOXYSCIRPENOL

incidence: 1/40, conc.: 10 µg/kg, country: UK⁹⁵

DIACETOXYSCIRPENOL

incidence: 2/40, conc. range: 70–200 µg/kg, Ø conc.: 135 µg/kg, country: UK⁹⁵

T-2 TOXIN

incidence: 2/40, conc. range: 10–100 µg/kg, Ø conc.: 55 µg/kg, country: UK⁹⁵

incidence: 7/11*, conc. range: 6–40 µg/kg, Ø conc.: 17 µg/kg, country: Germany³⁶⁶, *maize gluten and gluten feed

ZEARALENONE

incidence: 3/32, conc. range: 20–99 µg/kg (1 sa), 100–≤440 µg/kg (2 sa), country: UK⁹⁴, sa imported?

incidence: 8/40, conc. range: 80–480 µg/kg, Ø conc.: 270 µg/kg, country: UK⁹⁵

incidence: 6/6, conc. range: 14–61 µg/kg, Ø conc.: 42 µg/kg, country: Netherlands¹⁰³

incidence: 9/11*, conc. range: 3–350 µg/kg, Ø conc.: 60 µg/kg, country: Germany³⁶⁶, *maize gluten and gluten feed

incidence: 1/1, conc.: ~150 µg/kg, country: UK⁴⁸⁶

incidence: 12/29, conc. range: 80–620 µg/kg, Ø conc.: 280 µg/kg, country: Sweden⁵⁴², sa imported

see also Feed (gluten)

Maize grain, ensiled see Silage

Maize grits Feed maize grits may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/1*, conc.: 2 µg/kg, country: Japan¹¹⁷, sa from Thailand, *visually healthy corn

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/4, conc.: 90 µg/kg, country: Sweden⁵⁴², sa imported

FUMONISIN B₁

incidence: 1/1*, conc.: 217 µg/kg, country: Japan¹¹⁷, sa from Thailand, *visually healthy corn

Maize husk see Husk (maize)

Maize meal see Meal (maize)

Maize/oats mix may contain the following mycotoxins:

Fusarium ToxinsFUMONISIN B₁

incidence: 1/1, conc.: 24,000 µg/kg, country: USA⁵⁸, *associated with animal health problems (ELEM)

Maize oil cake see Oil cake (maize)

Maize plant may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 9/9, conc. range: 215–728 µg/kg, Ø conc.: 540 µg/kg, country: Germany³⁶⁶

incidence: 8/8, conc. range: ≤818 µg/kg, Ø conc.: 598 µg/kg, country: Germany⁵⁷²

3-ACETYLDEOXYNIVALENOL

incidence: 1/9, conc.: 51 µg/kg, country: Germany³⁶⁶

incidence: 1/8, conc.: 57 µg/kg, country: Germany⁵⁷²

15-ACETYLDEOXYNIVALENOL

incidence: 9/9, conc. range: 40–484 µg/kg, Ø conc.: 136 µg/kg, country: Germany³⁶⁶

incidence: 8/8, conc. range: ≤550 µg/kg, Ø conc.: 166 µg/kg, country: Germany⁵⁷²

HT-2 TOXIN

incidence: 8/9, conc. range: 7–1,307 µg/kg, Ø conc.: 183 µg/kg, country: Germany³⁶⁶

incidence: 7/8, conc. range: ≤1,469 µg/kg, Ø conc.: 233 µg/kg, country: Germany⁵⁷²

NIVALENOL

incidence: 9/9, conc. range: 116–5,910 µg/kg, Ø conc.: 1,087 µg/kg, country: Germany³⁶⁶

incidence: 8/8, conc. range: ≤6,640 µg/kg, Ø conc.: 1,312 µg/kg, country: Germany⁵⁷²

MONOACETOXYSCIRPENOL

incidence: 6/9, conc. range: 9–78 µg/kg, Ø conc.: 26 µg/kg, country: Germany³⁶⁶

incidence: 6/8, conc. range: <85 µg/kg, Ø conc.: 29 µg/kg, country: Germany⁵⁷²

SCIRPENTRIOL

incidence: 5/9, conc. range: 32–815 µg/kg, Ø conc.: 184 µg/kg, country: Germany³⁶⁶

incidence: 6/8, conc. range: <916 µg/kg, Ø conc.: 207 µg/kg, country: Germany⁵⁷²

T-2 TOXIN

incidence: 6/9, conc. range: 6–323 µg/kg, Ø conc.: 62 µg/kg, country: Germany³⁶⁶

incidence: 6/8, conc. range: ≤363 µg/kg, Ø conc.: 70 µg/kg, country: Germany⁵⁷²

T-2 TETRAOL

incidence: 3/9, conc. range: 20–703 µg/kg, Ø conc.: 267 µg/kg, country: Germany³⁶⁶

incidence: 3/8, conc. range: ≤790 µg/kg, Ø conc.: 301 µg/kg, country: Germany⁵⁷²

T-2 TRIOL

incidence: 1/9, conc.: 68 µg/kg, country: Germany³⁶⁶

incidence: 1/8, conc.: 76 µg/kg, country: Germany⁵⁷²

ZEARALENONE

incidence: 9/9, conc. range: 7–492 µg/kg, Ø conc.: 131 µg/kg, country: Germany³⁶⁶

incidence: 8/8, conc. range: ≤553 µg/kg, Ø conc.: 159 µg/kg, country: Germany⁵⁷²

Maize powder may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 13/17, conc. range: 8.6–75.0 µg/kg, Ø conc.: 30.1 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 4/17, conc. range: 1,530–6,510 µg/kg, Ø conc.: 3,170 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

FUMONISIN B₁

incidence: 15/17, conc. range: 268–1,516 µg/kg, Ø conc.: 780 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

FUMONISIN B₂

incidence: 12/17, conc. range: 155–401 µg/kg, Ø conc.: 289 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

FUMONISIN B₃

incidence: 10/17, conc. range: 101–268 µg/kg, Ø conc.: 176 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

NIVALENOL

incidence: 2/17, conc. range: 780–1,950 µg/kg, Ø conc.: 1,365 µg/kg, country: Japan/Vietnam¹⁰⁴, sa from Vietnam

Maize screenings see Screenings (maize)

Maize silage see Silage (maize)

Maize, cracked may contain the following mycotoxins:

Fusarium* Toxins*FUMONISIN B₁**

incidence: 8/8, conc. range: <5,000 µg/kg, country: USA⁵⁸

Maize, dark grains may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 3/9, conc. range: 1–≤2.6 µg/kg, country: UK⁹⁴, sa imported?

AFLATOXINS (TOTAL)

incidence: 3/9, conc. range: 1–≤2.9 µg/kg, country: UK⁹⁴, sa imported?

Maize, ground may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 7/7*, conc. range: 1–84 µg/kg, Ø conc.: 18 µg/kg, country: Japan¹¹⁷, sa from Thailand, *visually healthy corn

incidence: 8/8* **, conc. range: 210–3,200 µg/kg, Ø conc.: 891.25 µg/kg, country: USA²⁹⁹, *ncac, **stored and freshly harvested ground corn

incidence: 1/1*, conc.: 325.0 µg/kg, country: Thailand/USA⁴³⁶, sa from Thailand, *stored

incidence: 1/1, conc.: 840.0 µg/kg, country: Thailand/USA⁴³⁶, sa from USA

AFLATOXIN B₂

incidence: 6/7*, conc. range: 1–15 µg/kg,
 Ø conc.: 4.7 µg/kg, country: Japan¹¹⁷, sa
 from Thailand, *visually healthy corn

incidence: 8/8* **, conc. range: 15–290 µg/
 kg, Ø conc.: 100.25 µg/kg, country: USA²⁹⁹,
 *ncac, **stored and freshly harvested
 ground corn

incidence: 1/1*, conc.: 15.0 µg/kg,
 country: Thailand/USA⁴³⁶, sa from
 Thailand, *stored

incidence: 1/1, conc.: 9.0 µg /kg, country:
 Thailand/USA⁴³⁶, sa from USA

AFLATOXIN G₁

incidence: 3/7*, conc. range: 2–7 µg/kg,
 Ø conc.: 4.7 µg/kg, country: Japan¹¹⁷, sa
 from Thailand, *visually healthy corn

incidence: 1/1, conc.: 28 µg/kg, Thailand/
 USA⁴³⁶, sa from USA

AFLATOXIN M₁

incidence: 8/8* **, conc. range: 1–35 µg/
 kg, Ø conc.: 6.75 µg/kg, country: USA²⁹⁹,
 *ncac, **stored and freshly harvested corn

Fusarium* Toxins*FUMONISIN B₁**

incidence: 1/1, conc.: 3,000 µg/kg,
 country: USA²

incidence: 7/7*, conc. range: 65–1,450 µg/
 kg, Ø conc.: 842.4 µg/kg, country: Japan¹¹⁷,
 sa from Thailand, *visually healthy corn

FUMONISIN B₂

incidence: 1/1, conc.: 1,000 µg/kg,
 country: USA²

incidence: 6/7*, conc. range: 80–191 µg/
 kg, Ø conc.: 128.2 µg/kg, country: Japan¹¹⁷,
 sa from Thailand, *visually healthy corn

Maize, sweet feed see Maize

Makhana puffs may contain the
 following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 7/39, conc. range:
 100–2,140 µg/kg, country: India³⁵⁶

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 3/39, conc. range: 100–600 µg/
 kg, country: India³⁵⁶

Penicillium* Toxins*CITRININ**

incidence: 2/39, conc. range: 100–500 µg/
 kg, Ø conc.: 300 µg/kg, country: India³⁵⁶

Manioc Feed manioc may contain the
 following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 5/18, conc. range: tr, country:
 UK³⁶, sa imported?!

Mash (broiler) may contain the
 following mycotoxins:

Aspergillus* Toxins*AFLATOXIN**

incidence: 5/6, conc. range: 30–300 µg/kg,
 country: India³³

Aspergillus* and *Penicillium* Toxins*CYCLOPIAZONIC ACID**

incidence: 2/6, conc. range: 8,000–15,000 µg/
 kg, Ø conc.: 11,500 µg/kg, country: India³³

Mash (broiler finisher) may contain
 the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/1, conc.: 112 µg/kg, country:
 Nigeria¹⁷

AFLATOXIN B₂

incidence: 1/1, conc.: 80 µg/kg, country: Nigeria¹⁷

AFLATOXIN G₁

incidence: 1/1, conc.: 28 µg/kg, country: Nigeria¹⁷

AFLATOXIN G₂

incidence: 1/1, conc.: 51 µg/kg, country: Nigeria¹⁷

Fusarium* Toxins*ZEARALENONE**

incidence: 3/16, conc. range: 50–300 µg/kg, country: Zambia¹¹⁴

Mash (broiler starter) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/1, conc.: 53 µg/kg, country: Nigeria¹⁷

AFLATOXIN B₂

incidence: 1/1, conc.: 22 µg/kg, country: Nigeria¹⁷

AFLATOXIN G₁

incidence: 1/1, conc.: 37 µg/kg, country: Nigeria¹⁷

AFLATOXIN G₂

incidence: 1/1, conc.: 28 µg/kg, country: Nigeria¹⁷

Fusarium* Toxins*ZEARALENONE**

incidence: 2/16, conc. range: 50–500 µg/kg, Ø conc.: 275 µg/kg, country: Zambia¹¹⁴

Mash (chick) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/1, conc.: 64 µg/kg, country: Nigeria¹⁷

AFLATOXIN B₂

incidence: 1/1, conc.: 52 µg/kg, country: Nigeria¹⁷

AFLATOXIN G₁

incidence: 1/1, conc.: 42 µg/kg, country: Nigeria¹⁷

AFLATOXIN G₂

incidence: 1/1, conc.: 40 µg/kg, country: Nigeria¹⁷

AFLATOXINS (TOTAL)

incidence: 5/5*, Ø conc.: 1,076 µg/kg, country: India⁴³⁸, *poultry feed

Aspergillus* and *Penicillium* Toxins*CYCLOPIAZONIC ACID**

incidence: 1/3, conc. range: 1,500 µg/kg (estimated), country: India³³

Mash (grower) may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/1, conc.: 36 µg/kg, country: Nigeria¹⁷

incidence: 1/50 overall*, conc.: 338 µg/kg, country: Nigeria²⁷, *different kinds of sa (moldy and apparently good)

AFLATOXIN B₂

incidence: 1/1, conc.: 35 µg/kg, country: Nigeria¹⁷

incidence: 1/50 overall*, conc.: 508 µg/kg, country: Nigeria²⁷, *different kinds of sa (moldy and apparently good)

AFLATOXIN G₁

incidence: 1/1, conc.: 66 µg/kg*, country: Nigeria¹⁷

AFLATOXIN G₂

incidence: 1/1, conc.: 24 µg/kg, country: Nigeria¹⁷

AFLATOXIN

incidence: 3/8, conc. range: ≤46 µg/kg, country: Nigeria¹⁰⁹

AFLATOXINS (TOTAL)

incidence: 6/6*, Ø conc.: 920 µg/kg, country: India⁴³⁸, *poultry feed

Fusarium Toxins

ZEARALENONE

incidence: 3/16, conc. range: 50–300 µg/kg, country: Zambia¹¹⁴

Mash (layer) may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 1/1, conc.: 137 µg/kg, country: Nigeria¹⁷

incidence: 5/50 overall*, conc. range: tr–1,186 µg/kg, country: Nigeria²⁷, *different kinds of sa (moldy and apparently good)

AFLATOXIN B₂

incidence: 1/1, conc.: 77 µg/kg, country: Nigeria¹⁷

incidence: 1/50 overall*, conc.: 338 µg/kg, country: Nigeria²⁷, *different kinds of sa (moldy and apparently good)

AFLATOXIN G₁

incidence: 1/1, conc.: 59 µg/kg, country: Nigeria¹⁷

AFLATOXIN G₂

incidence: 1/1, conc.: 17 µg/kg, country: Nigeria¹⁷

AFLATOXIN (G₁ + G₂)

incidence: 2/50 overall*, conc. range: 176–932 µg/kg, country: Nigeria²⁷, *different kinds of sa (moldy and apparently good)

AFLATOXIN

incidence: 10/11, conc. range: 10–750 µg/kg, country: India³³

incidence: 7/20, conc. range: ≤260 µg/kg, country: Nigeria¹⁰⁹

AFLATOXINS (TOTAL)

incidence: 22/33*, conc. range: ≤1.30 µg/kg, country: Kuwait⁴²¹, *poultry feed

incidence: 5/6*, Ø conc.: 948 µg/kg, country: India⁴³⁸, *poultry feed

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 3/11, conc. range: 1,000–15,000 µg/kg, Ø conc.: 8,000 µg/kg, country: India³³

OCHRATOXIN A

incidence: 20/20*, conc. range: 5–16.7 µg/kg, Ø conc.: 9.6 µg/kg, country: Kuwait⁴²¹, *poultry feed

Fusarium Toxins

DEOXYNIVALENOL

incidence: 17/20*, conc. range: ≤1,500 µg/kg, country: Kuwait⁴²¹, *poultry feed

FUMONISIN

incidence: 20/20*, conc. range: 220–6,000 µg/kg, Ø conc.: 2,600 µg/kg, country: Kuwait⁴²¹, *poultry feed

ZEARALENONE

incidence: 3/16, conc. range: 50–500 µg/kg, country: Zambia¹¹⁴

incidence: 18/20*, conc. range: ≤84.7 µg/kg, country: Kuwait⁴²¹, *poultry feed

Mash (pig breeder) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 3/6, conc. range: ≤ 260 $\mu\text{g}/\text{kg}$,
country: Nigeria¹⁰⁹

Mash (poultry breeder) may
contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 7/8, conc. range: ≤ 231 $\mu\text{g}/\text{kg}$,
country: Nigeria¹⁰⁹

Matze, ground may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: ?/20, conc. range: tr–311 $\mu\text{g}/\text{kg}$,
country: Thailand⁵⁸⁴

Meal Feed meal may contain the
following mycotoxins:

Aspergillus and *Penicillium* Toxins

PATULIN

incidence: 1/30*, conc.: pr, country:
South Africa⁷⁹, *hay, lucerne (alfalfa),
and silage sa

Fusarium Toxins

TRICHOTHECENES

incidence: 1/30*, conc.: pr, country: South
Africa⁷⁹, *hay, lucerne (alfalfa), and silage sa

Meal, whole Feed whole meal may
contain the following mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 1/5, conc.: 26.94 $\mu\text{g}/\text{kg}$,
country: Germany¹⁰⁷

Meal (bone) may contain the
following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/4, conc. range: 100–150 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 125 $\mu\text{g}/\text{kg}$, country: Egypt¹⁶

ZEARALENONE

incidence: 4/4, conc. range: 12–55 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 30 $\mu\text{g}/\text{kg}$, country: Egypt¹⁶

Meal (coconut) Feed coconut meal
may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 28/33, conc. range: ≤ 63 $\mu\text{g}/\text{kg}$,
country: Sweden⁴⁹³, sa

Meal (copra) Feed copra meal may
contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 1/1, conc.: 16 $\mu\text{g}/\text{kg}$, country:
USA²⁸⁰, sa imported

Meal (cottonseed) may contain the
following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/5*, \emptyset conc.: 60 $\mu\text{g}/\text{kg}$,
country: Egypt¹⁶, *decorticated cottonseed
meal

incidence: 15/17, conc. range: 1.5–11.4 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 5.3 $\mu\text{g}/\text{kg}$, country:
Colombia¹²⁵

incidence: 532/944, conc. range: >tr
(178 sa), >10 $\mu\text{g}/\text{kg}$ (127 sa), >30 $\mu\text{g}/\text{kg}$
(106 sa), >70 $\mu\text{g}/\text{kg}$ (69 sa), >150 $\mu\text{g}/\text{kg}$
(46 sa), >500–< 1,500 $\mu\text{g}/\text{kg}$ (6 sa),
country: USA¹⁶⁴

incidence: 505/1,305, conc. range: >tr (251 sa), >10 µg/kg (173 sa), >30 µg/kg (66 sa), >70 µg/kg (14 sa), >150 µg/kg (1 sa), country: USA¹⁶⁴

incidence: 463/1,085, conc. range: >tr (131 sa), >10 µg/kg (125 sa), >30 µg/kg (103 sa), >70 µg/kg (68 sa), >150 µg/kg (36 sa), country: USA¹⁶⁴

incidence: 27/50, conc. range: 9–371 µg/kg, Ø conc.: 63.4 µg/kg, country: USA¹⁶⁴

incidence: 31/83, conc. range: tr–59 µg/kg, Ø conc.: 25 µg/kg, country: USA¹⁶⁴

incidence: 20/64, conc. range: tr–126 µg/kg, Ø conc.: 30.8 µg/kg, country: USA¹⁶⁴

incidence: 3/52, conc. range: 10–20 µg/kg, Ø conc.: 13.3 µg/kg, country: Greece¹⁷⁶

incidence: 10/19, conc. range: 1–290 µg/kg, country: USA²⁴⁵

incidence: 6/6, conc. range: 11.3–117.1 µg/kg, Ø conc.: 41.9 µg/kg, country: USA²⁷⁴

incidence: 2/2*, conc. range: 8.7–19.5 µg/kg, Ø conc.: 14.1 µg/kg, country: USA²⁷⁴, *ammoniated cottonseed meal

incidence: 12/12, conc. range: 90–650 µg/kg, Ø conc.: 231.7 µg/kg, country: USA³⁰⁴

incidence: 7/7, conc. range: 40–190 µg/kg, Ø conc.: 114.3 µg/kg, country: USA³⁰⁴

AFLATOXIN B₂

incidence: 6/17, conc. range: 1.1–2.0 µg/kg, Ø conc.: 1.6 µg/kg, country: Colombia¹²⁵

incidence: 6/6, conc. range: 1.7–18.9 µg/kg, Ø conc.: 6.8 µg/kg, country: USA²⁷⁴

incidence: 2/2*, conc. range: 2.5–6.3 µg/kg, Ø conc.: 4.4 µg/kg, country: USA²⁷⁴, *ammoniated cottonseed meal

incidence: 7/7, conc. range: 10–55 µg/kg, Ø conc.: 32.9 µg/kg, country: USA³⁰⁴

AFLATOXIN

incidence: 15/27, conc. range: ≤143 µg/kg, country: USA²⁸⁰

AFLATOXINS

incidence: 8/27, conc. range: >20 µg/kg (6 sa), >300 µg/kg (2 sa), country: USA¹⁹⁵

incidence: 3/17, conc. range: >20 µg/kg (3 sa), country: USA¹⁹⁵

incidence: 3/3, conc. range: 2–25 µg/kg, country: Egypt³⁵⁷

Meal (cycad) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/4, conc. range: 1–2 µg/kg, country: USA²⁴⁵

AFLATOXINS G

incidence: 1/4, conc.: 5–8 µg/kg, country: USA²⁴⁵

Meal (fish) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/41, conc.: 20 µg/kg, country: South Africa⁷⁹

incidence: 18/257, conc. range: ≤25 µg/kg (6 sa), 26–50 µg/kg (4 sa), 51–100 µg/kg (4 sa), 101–200 µg/kg (3 sa), 276 µg/kg (1 sa), Ø conc.: 63.06 µg/kg, country: India²⁴⁷

incidence: 2/6*, conc. range: 250–500 µg/kg (2 sa), country: India⁴⁹⁵, *poultry feedstuff

incidence: 3/4*, conc. range: 160–320 µg/kg, Ø conc.: 220 µg/kg, country: India⁴⁹⁷, *poultry feedstuff

AFLATOXIN B₂

incidence: 2/257, Ø conc.: 28 µg/kg,
country: India²⁴⁷

AFLATOXINS (B₁ + B₂)

incidence: 3/10*, Ø conc.: 190 µg/kg,
country: Egypt⁵¹⁶, *poultry feedstuff
ingredient

AFLATOXIN

incidence: 4/15, conc. range: ≤137 µg/kg,
country: Nigeria¹⁰⁹

incidence: 5/5, conc. range: <30 µg/kg (3
sa), >30 µg/kg (2 sa), country: India³⁸⁰

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 4/4, conc. range: 521–
3,986 µg/kg, Ø conc.: 2,124 µg/kg,
country: Egypt¹⁶

ZEARALENONE

incidence: 4/4, conc. range: 77–152 µg/kg,
Ø conc.: 107 µg/kg, country: Egypt¹⁶

Penicillium* Toxins*CITRININ**

incidence: 2/4, conc. range: 40–70 µg/kg,
Ø conc.: 55 µg/kg, country: Egypt¹⁶

Meal (maize) Feed maize meal may
contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 2/10, conc. range: 10–20 µg/kg,
Ø conc.: 15 µg/kg, country: India¹⁸³

incidence: 1/1* **, conc.: 13.8 µg/kg,
country: USA³⁷⁸, *ncac, **yellow corn
meal

incidence: 3/42, conc. range: 3–46 µg/kg,
Ø conc.: 17 µg/kg, country: Sweden⁵⁴², sa
imported

AFLATOXINS (TOTAL)

incidence: 5/5, conc. range: 8.3–24.5 µg/
kg, Ø conc.: 15.32 µg/kg, country: Brazil/
Argentina⁴⁴⁴, sa from Brazil

incidence: 4/5*, conc. range: ≤13.3 µg/kg,
country: Brazil/Argentina⁴⁴⁴, sa from
Brazil, *maize meal and gluten 21%

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 1/6, conc.: 3 µg/kg, country:
Netherlands¹⁰³

PATULIN

incidence: 1/10, conc.: 20 µg/kg, country:
India¹⁸³

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 3/3, conc. range: 3,500–
4,900 µg/kg, Ø conc.: 4,433.3 µg/kg,
country: UK⁹⁵

incidence: 5/6, conc. range:

140–1,000 µg/kg, Ø conc.: 670 µg/kg,
country: Netherlands¹⁰³

incidence: 1/17*, conc.: 1,000 µg/kg,
country: Zambia¹¹⁴, *maize meal No 3

incidence: 8/35, conc. range: 40–110 µg/
kg, Ø conc.: 80 µg/kg, country: Sweden⁵⁴²,
sa imported

3-ACETYLDEOXYNIVALENOL

incidence: 3/3, conc. range: 60–90 µg/kg,
Ø conc.: 73.3 µg/kg, country: UK⁹⁵

15-ACETYLDEOXYNIVALENOL

incidence: 3/3, conc. range:
470–680 µg/kg, Ø conc.: 576.7 µg/kg,
country: UK⁹⁵

FUMONISIN B₁

incidence: 3/3, conc. range: 4,900–
12,000 µg/kg, Ø conc.: 8,133.3 µg/kg,
country: UK⁹⁵

incidence: 10/10, conc. range: 380–2,800 µg/kg, Ø conc.: 1,220 µg/kg, country: USA²⁵⁷

incidence: 8/8, conc. range: 1,723–5,964 µg/kg, Ø conc.: 2,899.5 µg/kg, country: Spain³⁴⁷

FUMONISIN B₂
incidence: 3/3, conc. range: 700–1,300 µg/kg, Ø conc.: 1,000 µg/kg, country: UK⁹⁵

FUMONISINS
incidence: 5/9, conc. range: 20–99 µg/kg (1 sa), 100–999 µg/kg (3 sa), 1,030 µg/kg (1 sa), country: UK⁹⁴, sa imported?

FUSARENON X
incidence: 3/3, conc. range: 35–100 µg/kg, Ø conc.: 67 µg/kg, country: UK⁹⁵

HT-2 TOXIN
incidence: 3/3, conc. range: 125–210 µg/kg, Ø conc.: 161.7 µg/kg, country: UK⁹⁵

MONILIFORMIN
incidence: 3/3, conc. range: 1,200–3,200 µg/kg, Ø conc.: 1,966.7 µg/kg, country: UK⁹⁵

NIVALENOL
incidence: 3/3, conc. range: 470–1,600 µg/kg, Ø conc.: 930 µg/kg, country: UK⁹⁵

MONOACETOXYSCIRPENOL
incidence: 3/3, conc. range: 10–15 µg/kg, Ø conc.: 11.7 µg/kg, country: UK⁹⁵

T-2 TOXIN
incidence: 3/3, conc. range: 80–170 µg/kg, Ø conc.: 120 µg/kg, country: UK⁹⁵

ZEARALENONE
incidence: 3/3, conc. range: 640–1,500 µg/kg, Ø conc.: 1,080 µg/kg, country: UK⁹⁵

incidence: 5/6, conc. range: 20–240 µg/kg, Ø conc.: 150 µg/kg, country: Netherlands¹⁰³

incidence: 3/17*, conc. range: 50–600 µg/kg, country: Zambia¹¹⁴, *maize meal No 3

incidence: 2/10, conc. range: 20 µg/kg, country: India¹⁸³

incidence: 9*/11**, conc. range: 12–69 µg/kg, Ø conc.: 33.1 µg/kg, country: USA²⁹³, *white cornmeal, **ncac

Meal (maize bran) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL
incidence: 3/3, conc. range: 310–500 µg/kg, Ø conc.: 373.3 µg/kg, country: UK³⁶, sa imported?

Meal (maize germ) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 2/2, conc. range: 480–2,180 µg/kg, Ø conc.: 1,330 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: 21/21, conc. range: 50–1,010 µg/kg, Ø conc.: 290 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

FUMONISIN B₂
incidence: 2/2, conc. range: ≤1,550 µg/kg, Ø conc.: 770 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: 21/21, conc. range: ≤420 µg/kg, Ø conc.: 80 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

FUMONISIN B₃
incidence: 2/2, conc. range: 50–900 µg/kg, Ø conc.: 480 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: 21/21, conc. range: ≤ 100 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 10 $\mu\text{g}/\text{kg}^*$, country: South
 Africa¹⁴⁷, *mean of all sa

Meal (maize gluten) Feed maize
 gluten meal may contain the following
 mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
 incidence: 3/37, conc. range: ≤ 45 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 22 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and Oceania

Fusarium Toxins

DEOXYNIVALENOL
 incidence: 7/37, conc. range: $\leq 4,423$ $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 1,488 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and Oceania

FUMONISINS
 incidence: 24/37, conc. range: $\leq 3,740$ $\mu\text{g}/$
 kg , \emptyset conc.: 619 $\mu\text{g}/\text{kg}$, country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and
 Oceania

ZEARALENONE
 incidence: 34/37, conc. range: $\leq 3,158$ $\mu\text{g}/$
 kg , \emptyset conc.: 545 μ/kg , country: Austria/
 Singapore/USA⁶⁰⁸, sa from Asia and
 Oceania

Meal (meat) may contain the
 following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
 incidence: 4/6*, conc. range: 140–160 $\mu\text{g}/$
 kg , \emptyset conc.: 150 $\mu\text{g}/\text{kg}$, country: India⁴⁹⁷,
 *poultry feedstuff

AFLATOXIN G₁
 incidence: 1/4, conc.: 13 $\mu\text{g}/\text{kg}$, country:
 Guatemala³⁷⁵

Meal (millet) Feed millet meal may
 contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL
 incidence: 1/1*, conc.: 720 $\mu\text{g}/\text{kg}$, country:
 Papua, New Guinea/Japan⁷², sa most
 probably from Australia, *ncac

NIVALENOL
 incidence: 1/1*, conc.: 1,540 $\mu\text{g}/\text{kg}$,
 country: Papua, New Guinea/Japan⁷², sa
 most probably from Australia, *ncac

ZEARALENONE
 incidence: 1/1*, conc.: 440 $\mu\text{g}/\text{kg}$, country:
 Papua, New Guinea/Japan⁷², sa most
 probably from Australia, *ncac

Meal (peanut) Feed peanut meal may
 contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
 incidence: 366/366, conc. range:
 10–750 $\mu\text{g}/\text{kg}$, \emptyset conc.: 71 $\mu\text{g}/\text{kg}$, country:
 Poland⁷⁶, sa from Brazil and India

incidence: 1/2, conc.: 500 $\mu\text{g}/\text{kg}$, country:
 Australia¹²¹

incidence: 8/8, conc. range:
 400–2,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 841.3 $\mu\text{g}/\text{kg}$,
 country: UK¹⁶⁸

incidence: 3/4, conc. range: 112–6,500 $\mu\text{g}/$
 kg , country: USA²⁴⁵

incidence: 1/1, conc.: 11 $\mu\text{g}/\text{kg}$, country:
 USA²⁷²

incidence: 13/16, conc. range: 60–300 $\mu\text{g}/$
 kg , \emptyset conc.: 140 $\mu\text{g}/\text{kg}$, country:
 Ireland²⁷⁹

incidence: 1/1*, conc.: 700 $\mu\text{g}/\text{kg}$, country:
 Japan³⁰⁵, sa from Indonesia, *ncac

incidence: 4/5*, conc. range: 50–840 $\mu\text{g}/$
 kg , \emptyset conc.: 340 $\mu\text{g}/\text{kg}$, country: Japan³⁰⁵,
 sa from Brazil, *ncac

incidence: 3/5*, conc. range: 30–50 $\mu\text{g}/\text{kg}$,
 \emptyset conc.: 40 $\mu\text{g}/\text{kg}$, country: Japan³⁰⁵, sa
 from USA, *ncac

incidence: 6/7*, conc. range: 110–1,120 µg/kg, Ø conc.: 402.9 µg/kg, country: Japan³⁰⁵, sa from India, *ncac

incidence: 7/8, conc. range: 54–2,520 µg/kg, Ø conc.: 1,117.1 µg/kg, country: Denmark³¹⁶, sa from Brazil

incidence: 11/12, conc. range: 100–1,111 µg/kg, Ø conc.: 546.8 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 1/1, conc.: 75 µg/kg, country: Denmark³¹⁶, sa from Argentina

incidence: 1/1, conc.: 125 µg/kg, country: Denmark³¹⁶, sa from Nigeria

incidence: 1/1*, conc.: 35.7 µg/kg, country: USA³⁷⁸, *ncac

incidence: 2/35, conc. range: ≤2,400 µg/kg, country: Netherlands³⁷⁹, sa imported, *2 sa exceeding 20 µg/kg

incidence: 1/1, conc.: 3,527 µg/kg, country: UK/Netherlands⁴⁰⁷, sa from India

incidence: 1/1, conc.: 164 µg/kg, country: UK/Netherlands⁴⁰⁷, sa from Argentina

incidence: 1/1*, conc.: 6,500.0 µg/kg, country: Thailand/USA⁴³⁶, sa from Thailand, *stored

incidence: 30/31*, conc. range: tr–30 µg/kg (4 sa), 31–60 µg/kg (5 sa), 61–100 µg/kg (3 sa), 101–500 µg/kg (13 sa), 500–1,000 µg/kg (3 sa), ≤2,000 µg/kg (2 sa), country: UK⁵⁴⁵, *suspect feedstuffs

incidence: 2/2*, conc. range: 620–750 µg/kg, Ø conc.: 685 µg/kg, country: UK⁵⁸³, *decorticated extracted peanut meal

incidence: 8/9, conc. range: ≤381 µg/kg, Ø conc.: 184 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

AFLATOXIN B₂

incidence: 366/366, conc. range: 2–200 µg/kg, Ø conc.: 16 µg/kg, country: Poland⁷⁶, sa from Brazil and India

incidence: 1/1, conc.: 3 µg/kg, country: USA²⁷²

incidence: 10/16, conc. range: 20–90 µg/kg, Ø conc.: 40 µg/kg, country: Ireland²⁷⁹

incidence: 1/1*, conc.: 500 µg/kg, country: Japan³⁰⁵, sa from Indonesia, *ncac

incidence: 3/5*, conc. range: 150–600 µg/kg, Ø conc.: 323.3 µg/kg, country: Japan³⁰⁵, sa from Brazil, *ncac

incidence: 2/7*, conc. range: 250–550 µg/kg, Ø conc.: 400 µg/kg, country: Japan³⁰⁵, sa from India, *ncac

incidence: 6/8, conc. range: 138–556 µg/kg, Ø conc.: 384.3 µg/kg, country: Denmark³¹⁶, sa from Brazil

incidence: 9/12, conc. range: 30–556 µg/kg, Ø conc.: 246.7 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 1/1, conc.: 601 µg/kg, country: UK/Netherlands⁴⁰⁷, sa from India

incidence: 1/1, conc.: 27 µg/kg, country: UK/Netherlands⁴⁰⁷, sa from Argentina

incidence: 1/1*, conc.: 975.0 µg/kg, country: Thailand/USA⁴³⁶, sa from Thailand, *stored

incidence: 2/2*, conc. range: 30–40 µg/kg, Ø conc.: 35 µg/kg, country: UK⁵⁸³, *decorticated extracted peanut meal

AFLATOXIN G₁

incidence: 5/8, conc. range: 290–1,000 µg/kg, Ø conc.: 496 µg/kg, country: UK¹⁶⁸

incidence: 1/1, conc.: 11 µg/kg, country: USA²⁷²

incidence: 7/16, conc. range: 40–150 µg/kg, Ø conc.: 70 µg/kg, country: Ireland²⁷⁹

incidence: 1/1*, conc.: 450 µg/kg, country: Japan³⁰⁵, sa from Indonesia, *ncac

incidence: 3/5*, conc. range: 30–100 µg/kg, Ø conc.: 56.7 µg/kg, country: Japan³⁰⁵, sa from Brazil, *ncac

incidence: 3/7*, conc. range: 80–170 µg/kg, Ø conc.: 120 µg/kg, country: Japan³⁰⁵, sa from India, *ncac

incidence: 5/8, conc. range: 50–694 µg/kg, Ø conc.: 271.2 µg/kg, country: Denmark³¹⁶, sa from Brazil

incidence: 9/12, conc. range: 56–556 µg/kg, Ø conc.: 323.1 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 1/1, conc.: 20 µg/kg, country: Denmark³¹⁶, sa from Argentina

incidence: 1/1, conc.: 125 µg/kg, country: Denmark³¹⁶, sa from Nigeria

incidence: 2/2*, conc. range: 50–60 µg/kg, Ø conc.: 55 µg/kg, country: UK⁵⁸³, *decorticated extracted peanut meal

AFLATOXIN G₂

incidence: 1/1, conc.: 5 µg/kg, country: USA²⁷²

incidence: 3/16, conc. range: 30–50 µg/kg, Ø conc.: 40 µg/kg, country: Ireland²⁷⁹

incidence: 1/5*, conc.: 90 µg/kg, country: Japan³⁰⁵, sa from Brazil, *ncac

incidence: 1/7*, conc.: 50 µg/kg, country: Japan³⁰⁵, sa from India, *ncac

incidence: 4/8, conc. range: 28–111 µg/kg, Ø conc.: 62.5 µg/kg, country: Denmark³¹⁶, sa from Brazil

incidence: 7/12, conc. range: 56–111 µg/kg, Ø conc.: 93.7 µg/kg, country: Denmark³¹⁶, sa from Senegal

incidence: 2/2*, conc. range: 10 µg/kg, Ø conc.: 10 µg/kg, country: UK⁵⁸³, *decorticated extracted peanut meal

AFLATOXINS (TOTAL)

incidence: 20/20*, conc. range: 10–10,680 µg/kg, Ø conc.: 3,023 µg/kg, country: Austria⁵⁰⁹, sa of unknown origin, *coarse peanut meal

incidence: 1/1*, conc.: 120 µg/kg, country: Austria⁵⁰⁹, sa from Argentina, *coarse peanut meal

incidence: 10/12*, conc. range: 19–5,570 µg/kg, Ø conc.: 1,408 µg/kg, country: Austria⁵⁰⁹, sa from Brazil, *coarse peanut meal

AFLATOXINS

incidence: 45/82*, conc. range: 5–50 µg/kg (11 sa), 51–500 µg/kg (15 sa), 501–2,000 µg/kg (13 sa), >2,000 µg/kg (6 sa), country: Australia²¹, *peanut meal and by-products

incidence: 1/1, conc.: 72 µg/kg, country: USA²⁸⁰

Fusarium Toxins

FUMONISINS

incidence: 1/9, conc.: 249 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

ZEARALENONE

incidence: 5/9, conc. range: ≤4,587 µg/kg, Ø conc.: 2,506 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

Meal (peanut, deoiled) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1*, conc.: 269 µg/kg, country: USA³⁷⁸, *ncac

Meal (pig) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 13/291*, conc. range: <10–375 µg/kg, country: UK³⁰, *pig meal and pellets

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 12/96, conc. range: <25–250 µg/kg, country: UK³⁰

Fusarium* Toxins*ZEARALENONE**

incidence: 3/16, conc. range: 50–500 µg/kg, country: Zambia¹¹⁴

Meal (rapeseed) may contain the following mycotoxins:

Alternaria* Toxins*ALTERNARIOL**

incidence: 2/30, conc. range: ≤81 µg/kg, Ø conc.: 68 µg/kg, country: UK¹⁸⁷

ALTERNARIOL MONOMETHYL ETHER

incidence: 2/30, conc. range: ≤60 µg/kg, Ø conc.: 55 µg/kg, country: UK¹⁸⁷

TENUAZONIC ACID

incidence: 9/30, conc. range: ≤970 µg/kg, Ø conc.: 730 µg/kg, country: UK¹⁸⁷

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 1/12, conc.: 144 µg/kg, country: Germany⁵⁷²

15-ACETYLDEOXYNIVALENOL

incidence: 1/12, conc.: 47 µg/kg, country: Germany⁵⁷²

Meal (rice) Feed rice meal may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 8/22, conc. range: 1.0–52.8 µg/kg, Ø conc.: 20.5 µg/kg, country: Colombia¹²⁵

AFLATOXIN B₂

incidence: 4/22, conc. range: 1.1–3.3 µg/kg, Ø conc.: 2.4 µg/kg, country: Colombia¹²⁵

Meal (sorghum) Feed sorghum meal may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXINS (TOTAL)**

incidence: 5/5, conc. range: 0.1–23.8 µg/kg, Ø conc.: 17.4 µg/kg, country: Brazil/Argentina⁴⁴⁴, sa from Brazil

Meal (soybean) Feed soybean meal may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 36/250, conc. range: ≤25 µg/kg (28 sa), 26–50 µg/kg (3 sa), 51–100 µg/kg (3 sa), 101–200 µg/kg (1 sa), 256 µg/kg (1 sa), Ø conc.: 26.74 µg/kg, country: India²⁴⁷

incidence: 12/403, conc. range: 5–25 µg/kg, Ø conc.: 13.3 µg/kg, country: Egypt³⁹⁷

incidence: 1/10*, conc.: 115 µg/kg, country: Egypt⁵¹⁶, *poultry feedstuff ingredient

incidence: 3/122, conc. range: ≤13 µg/kg, Ø conc.: 9 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

AFLATOXIN B₂

incidence: 11/107, Ø conc.: 9.21 µg/kg, country: India²⁴⁷

AFLATOXINS (TOTAL)

incidence: 16/34*, conc. range: ≤1.27 µg/kg, country: Kuwait⁴²¹, *poultry feed

incidence: 3/12*, conc. range: 25–190 µg/kg, Ø conc.: 93 µg/kg, country: Austria⁵⁰⁹,

sa from Brazil, *coarse soybean meal, extracted

AFLATOXINS

incidence: 1/16, conc.: 5–50 µg/kg, country: Australia²¹

incidence: 2/2, conc. range: 2 µg/kg, Ø conc.: 2.0 µg/kg, country: Egypt³⁵⁷

incidence: 5/12, conc. range: pr, country: Sweden⁴⁹³, sa imported

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 18/21*, conc. range: ≤40.0 µg/kg, country: Kuwait⁴²¹, *poultry feed

incidence: 4/31, conc. range: ≤11 µg/kg, Ø conc.: 7 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

Fusarium Toxins

DEOXYNIVALENOL

incidence: 17/17, conc. range: <5–600 µg/kg, country: USA⁸³

incidence: 18/21*, conc. range: ≤250 µg/kg, country: Kuwait⁴²¹, *poultry feed

incidence: 7/13, conc. range: ≤237 µg/kg, Ø conc.: 64 µg/kg, country: Germany⁵⁷²

incidence: 9/122, conc. range: ≤1,347 µg/kg, Ø conc.: 328 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 13/32, conc. range: ≤840 µg/kg, Ø conc.: 397 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

FUMONISIN

incidence: 18/21*, conc. range: ≤6,000 µg/kg, country: Kuwait⁴²¹, *poultry feed

FUMONISINS

incidence: 9/122, conc. range: ≤331 µg/kg, Ø conc.: 184 µg/kg, country: Austria/

Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 1/2, conc.: 3,120 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

HT-2 TOXIN

incidence: 1/13, conc.: 5 µg/kg, country: Germany⁵⁷²

15-MONOACETOXYSCIRPENOL

incidence: 1/13, conc.: 5 µg/kg, country: Germany⁵⁷²

DIACETOXYSCIRPENOL

incidence: 6/17, conc. range: <5–130 µg/kg, country: USA⁸³

SCIRPENTRIOL

incidence: 1/13, conc.: 21 µg/kg, country: Germany⁵⁷²

T-2 TOXIN

incidence: 1/96, conc.: 133 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

T-2 TOXIN EQUIVALENTS

incidence: 16/17, conc. range: <5–1,420 µg/kg*, country: USA⁸³, *T-2 tetraol after base hydrolysis (primarily HT-2)

T-2 TETRAOL

incidence: 1/13, conc.: 21 µg/kg, country: Germany⁵⁷²

ZEARALENONE

incidence: 5/17, conc. range: 180–760 µg/kg, Ø conc.: 380 µg/kg, country: USA⁸³

incidence: 21/21*, conc. range: 50–69.9 µg/kg, Ø conc.: 52.4 µg/kg, country: Kuwait⁴²¹, *poultry feed

incidence: 9/13, conc. range: ≤211 µg/kg, Ø conc.: 51 µg/kg, country: Germany⁵⁷²

incidence: 21/122, conc. range: ≤1,078 µg/kg, Ø conc.: 170 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania

incidence: 1/18, conc.: 50 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

incidence: 1/18, conc.: 50 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

α-ZEARALENOL

incidence: 4/13, conc. range: ≤25 µg/kg, Ø conc.: 12 µg/kg, country: Germany⁵⁷²

β-ZEARALENOL

incidence: 2/13, conc. range: 3–11 µg/kg, Ø conc.: 7 µg/kg, country: Germany⁵⁷²

ZEARALENOL

incidence: 2/17, conc. range: 180 µg/kg, Ø conc.: 180 µg/kg, country: USA⁸³

Meal (sunflower seed) may contain the following mycotoxins:

***Alternaria* Toxins**

ALTERNARIOL

incidence: 18/22, conc. range: 50–570 µg/kg, Ø conc.: 180 µg/kg, country: UK¹⁸⁷, sa from Argentina, EC, and India

ALTERNARIOL MONOMETHYL ETHER

incidence: 16/22, conc. range: 45–270 µg/kg, Ø conc.: 100 µg/kg, country: UK¹⁸⁷, sa from Argentina, EC, and India

TENUAZONIC ACID

incidence: 22/22, conc. range: 510–5,600 µg/kg, Ø conc.: 1,900 µg/kg, country: UK¹⁸⁷, sa from Argentina, EC, and India

***Aspergillus* Toxins**

AFLATOXIN B₁

incidence: 4/24, conc. range: 20–80 µg/kg, country: Morocco/USA⁴²⁹, sa from Morocco

Meal (wheat soybean) may contain the following mycotoxins:

***Fusarium* Toxins**

ZEARALENONE

incidence: 2/4, conc. range: 20–36 µg/kg, Ø conc.: 28 µg/kg, country: Egypt¹⁶

Meat meal see Meal (meat)

Mice feed see Feed (mice)

Milk powder Feed milk powder may contain the following mycotoxins:

***Aspergillus* and *Penicillium* Toxins**

OCHRATOXIN A

incidence: 1/1, conc.: 6.8 µg/kg, country: Germany⁴⁷¹

Milk production mixed feed see Feed, mixed

Millet Feed millet may contain the following mycotoxins:

***Aspergillus* Toxins**

AFLATOXINS

incidence: 1/4, conc.: 51–500 µg/kg, country: Australia²¹

incidence: 1/8*, conc.: 10–29 µg/kg, country: India³⁴⁹, *poultry feed

***Aspergillus* and *Penicillium* Toxins**

CYCLOPIAZONIC ACID

incidence: 1/1*, conc.: 10,000 µg/kg (estimated), country: India³³, *little millet

OCHRATOXIN A

incidence: 2/8*, conc. range: >100–≤145 µg/kg, country: India³⁴⁹, *poultry feed

Millet, waste may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/4, conc.: 640 µg/kg, country: India⁴³⁸

Milo may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN**

incidence: 1/1, conc.: >30 µg/kg, country: India³⁸⁰

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 2/2, conc. range: 7–12 µg/kg, Ø conc.: 10 µg/kg, country: Netherlands¹⁰³

Mineral, vitamin, and antibiotic mixtures see Feed ingredients

Mink feed see Feed (mink)

Mixed diet see Diet

Mixed feed see Feed, mixed

Mixed grains see Grain(s)

Mung testa see Testa (mung)

Murkool may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 4/10, conc. range: 10–40 µg/kg, country: India¹⁸³

AFLATOXIN G₁

incidence: 1/10, conc.: tr, country: India¹⁸³

Mustard cake see Cake (mustard)

Mustard, cottonseed, and sunflower cakes see Cake (mustard, cottonseed, and sunflower)

Neem cake see Cake (neem)

Niger cake see Cake (niger)

Nursery ration see Ration (nursery)

Oats Feed oats may contain the following mycotoxins:

Alternaria* Toxins*ALTERNARIOL**

incidence: 4/59*, conc. range: pr, country: Austria¹⁸², *mainly oats

incidence: 4/38*, conc. range: pr, country: Austria¹⁸², *mainly oats

incidence: 1/4, conc.: 10 µg/kg, country: Germany²⁹⁴

ALTERNARIOL MONOMETHYL ETHER

incidence: 39/59*, conc. range: pr, country: Austria¹⁸², *mainly oats

incidence: 6/38*, conc. range: pr, country: Austria¹⁸², *mainly oats

incidence: 1/18*, conc.: pr, country: Austria¹⁸², *mainly oats

incidence: 35/80*, conc. range: pr, country: Austria¹⁸², *mainly oats

incidence: 24/144*, conc. range: pr, country: Austria¹⁸², *mainly oats

incidence: 4/11, conc. range: 10–42 µg/kg,
country: Germany²⁹⁴

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/5, conc. range: 20–40 µg/kg,
Ø conc.: 30 µg/kg, country: Australia¹²¹

incidence: 2/3, conc. range: 20–40 µg/kg,
Ø conc.: 30 µg/kg, country: Australia¹⁸¹

incidence: 3/304, conc. range: 6 µg/kg,
country: USA³⁸⁴

incidence: 2/2, conc. range: 0.018–
0.021 µg/kg, Ø conc.: 0.0195 µg/kg,
country: Italy⁴⁶⁷

AFLATOXIN B₂

incidence: 2/2, conc. range: 0.015–
0.028 µg/kg, Ø conc.: 0.0215 µg/kg,
country: Italy⁴⁶⁷

AFLATOXIN B

incidence: 8/19, conc. range: ≤10 µg/kg
(4 sa), >10–≤100 µg/kg (4 sa), country:
France⁴⁶

AFLATOXIN G₁

incidence: 2/2, conc. range: 0.018–
0.167 µg/kg, Ø conc.: 0.0925 µg/kg,
country: Italy⁴⁶⁷

AFLATOXIN G₂

incidence: 1/2, conc.: 0.021 µg/kg,
country: Italy⁴⁶⁷

AFLATOXIN

incidence: 2/3, conc. range: 240–2,600 µg/
kg, Ø conc.: 1,420 µg/kg, country:
Sweden²⁴⁴

incidence: 2*/2**, conc. range: ≤30 µg/kg
(2 sa), country: India⁵¹⁵, *all sa contained
aflatoxin, **poultry feed

incidence: 1*/1**, conc.: ≤30 µg/kg (1 sa),
country: India⁵¹⁵, *sa contained aflatoxin,
**poultry feed

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 5/60, conc. range: 80–200 µg/
kg, Ø conc.: 100 µg/kg, country:
Hungary⁶

incidence: 7/7, conc. range: 0.89–85 µg/kg,
Ø conc.: 14.6 µg/kg, country: Bulgaria/
Germany⁸, sa from Bulgaria

incidence: 12/93*, conc. range: 0.1–
58.8 µg/kg, Ø conc.: 9.5 µg/kg, country:
Germany¹³, *ncac

incidence: 2/34*, conc. range: 1.4–56.6 µg/
kg, Ø conc.: 29 µg/kg, country: Italy¹⁴, *ncac

incidence: 6/21, conc. range: ≤2.2 µg/kg,
Ø conc.: 0.53 µg/kg, country: UK¹⁵

incidence: 2/84*, conc. range: 28.8–
76.5 µg/kg**, Ø conc.: 52.7 µg/kg**,
country: Sweden/Denmark²³, sa from
Sweden, *barley and oats sa, **oats

incidence: 1/1, conc.: 28 µg/kg, country:
Denmark²⁴

incidence: 14/37, conc. range: <100 µg/kg
(12 sa), 100–1,000 µg/kg (2 sa), country:
Austria²⁹

incidence: 1/46*, conc.: 80 µg/kg, country:
UK³⁰, *ncac

incidence: 6/21, conc. range: <2.2 µg/kg,
Ø conc.: 0.53 µg/kg, country: UK⁴³

incidence: 1/71, conc.: nc, country:
Poland⁸⁴

incidence: 3/11, conc. range: 38–73 µg/kg,
country: Germany¹⁸⁶

incidence: 4/7,345 overall, conc. range: nc,
country: Hungary²⁰⁹

incidence: 1/73, conc.: pr, country:
Canada³⁴⁶

incidence: 2/72, conc. range: 16–51 µg/kg,
Ø conc.: 33.5 µg/kg, country: Canada⁴¹⁰

incidence: 3/6*, conc. range: 0.53–1.95 µg/kg, Ø conc.: 1.3 µg/kg, country: Poland⁵⁰⁶, *ncac

incidence: 22/48, conc. range: <100 µg/kg (20 sa), 100–1,000 µg/kg (2 sa), country: Austria⁵⁰⁹

***Fusarium* Toxins**

BEAUVERICIN

incidence: 1/1*, conc.: 18 µg/kg, country: Finland²⁰⁵, *ncac

DEOXYNIVALENOL

incidence: 28/45, conc. range: 50–870 µg/kg, Ø conc.: 188.6 µg/kg, country: Hungary⁶

incidence: 36/36, conc. range: 22–2,581 µg/kg, Ø conc.: 296 µg/kg, country: Finland⁹

incidence: 2/24, conc. range: <100 ~ 2,000 µg/kg, country: Sweden²⁵

incidence: 38/56, conc. range: 3–1,480 µg/kg, Ø conc.: 135.1 µg/kg, country: Germany⁴¹

incidence: 43/56, conc. range: 4–536 µg/kg, Ø conc.: 129.5 µg/kg, country: Germany⁴¹

incidence: 28/54, conc. range: 3–203 µg/kg, Ø conc.: 51.6 µg/kg, country: Germany⁴¹

incidence: 25/51, conc. range: 8–857 µg/kg, Ø conc.: 219.0 µg/kg, country: Germany⁴¹

incidence: 47/55, conc. range: 20–1,224 µg/kg, Ø conc.: 302.3 µg/kg, country: Germany⁴¹

incidence: 2/167*, conc. range: 6–8 µg/kg, Ø conc.: 7 µg/kg, country: Finland⁶², *different kinds of sa

incidence: 11/67, conc. range: 20–500 µg/kg, country: Germany⁶⁸

incidence: 2/2, conc. range: 5–50 µg/kg, country: Finland¹¹²

incidence: 2/59, conc. range: 3,000–15,000 µg/kg, country: Germany¹²⁴, sa from EU

incidence: 3/6, conc. range: 420–520 µg/kg, Ø conc.: 470 µg/kg, country: Sweden¹⁹⁷

incidence: 11/32, conc. range: 40–260 µg/kg, Ø conc.: 140 µg/kg, country: Sweden¹⁹⁷

incidence: 7/10, conc. range: 20–49 µg/kg (4 sa), 50–99 µg/kg (2 sa), 108 µg/kg (1 sa), country: UK²⁰³

incidence: 870/982* **, conc. range: 30–62,050 µg/kg, country: Norway²²⁴, *ncac, **of different categories (for more information please see the article)

incidence: 4/4*, conc. range: 270–4,200 µg/kg, Ø conc.: 1,892.5 µg/kg, country: Norway/Germany²³⁵, sa from Norway, harvested in October/November, *ncac

incidence: 1/5*, conc.: 30 µg/kg, country: Norway/Germany²³⁵, sa from Norway, harvested in spring, *ncac

incidence: 7/342 overall*, conc. range: 220–13,500 µg/kg, Ø conc.: 3,800 µg/kg, country: USA²³⁷, *different kinds of sa

incidence: 1/1, conc.: 12,400 µg/kg, country: Norway²⁷⁶

incidence: 6/7*, conc. range: 28–11,000 µg/kg, Ø conc.: 2,259 µg/kg, country: Finland²⁸¹, *1 sa na

incidence: 33/73, Ø conc.: 330 µg/kg, country: Canada³⁴⁶

incidence: ?/14*, conc. range: ≤2,380 µg/kg, country: Germany³⁶⁴, *ncac

incidence: 34/73, conc. range: ≤1,200 µg/kg, Ø conc.: 330 µg/kg, country: Canada⁴¹⁰

incidence: ?/15, conc. range: ≤553 µg/kg, country: Switzerland⁴⁵⁰

incidence: 17/17*, conc. range: ≤2,400 µg/kg, country: Germany⁴⁷⁸, *husked oat kernels

incidence: 35/51*, conc. range: ≤ 706 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 17/52*, conc. range: ≤ 896 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 37/59*, conc. range: ≤ 660 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 125/125, conc. range: 0–100 $\mu\text{g}/\text{kg}$ (38 sa), 101–500 $\mu\text{g}/\text{kg}$ (69 sa), 501–1,000 $\mu\text{g}/\text{kg}$ (5 sa), $\leq 9,600$ $\mu\text{g}/\text{kg}$ (13 sa), country: Austria⁴⁹¹

incidence: 6/6*, conc. range: 1–48 $\mu\text{g}/\text{kg}$, \emptyset conc.: 28 $\mu\text{g}/\text{kg}$, country: Poland⁵⁰⁶, *ncac

incidence: 5/5* **, conc. range: 122–204 $\mu\text{g}/\text{kg}$, country: Lithuania⁵²⁰, *for food and feed, **spring oats

incidence: 8/9* **, conc. range: tr–131 $\mu\text{g}/\text{kg}$, country: Lithuania⁵²⁰, *for food and feed, **spring oats

incidence: 9/13*, conc. range: 23–299 $\mu\text{g}/\text{kg}$, \emptyset conc.: 143.6 $\mu\text{g}/\text{kg}$, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 12/17, conc. range: ≤ 720 $\mu\text{g}/\text{kg}$, \emptyset conc.: 170 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

incidence: 8/12*, conc. range: 15–1,230 $\mu\text{g}/\text{kg}$, \emptyset conc.: 324.1 $\mu\text{g}/\text{kg}$, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

incidence: 1/4*, conc.: 64 $\mu\text{g}/\text{kg}$, country: Austria⁵⁷⁶, *ncac

incidence: 2/5*, conc. range: ≤ 40 $\mu\text{g}/\text{kg}$, \emptyset conc.: 20 $\mu\text{g}/\text{kg}$?, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *ncac

incidence: 41/50, conc. range: $\leq 3,021$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 801 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

3-ACETYLDEOXYNIVALENOL

incidence: 23/36, conc. range: 20–553 $\mu\text{g}/\text{kg}$, \emptyset conc.: 119 $\mu\text{g}/\text{kg}$, country: Finland⁹

incidence: 17/56, conc. range: 3–8 $\mu\text{g}/\text{kg}$, \emptyset conc.: 4.6 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 5/54, conc. range: 3–13 $\mu\text{g}/\text{kg}$, \emptyset conc.: 7.8 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 2/51, conc. range: 11–115 $\mu\text{g}/\text{kg}$, \emptyset conc.: 63.0 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 1/1, conc.: 1,500 $\mu\text{g}/\text{kg}$, country: Norway²⁷⁶

incidence: 1/7*, conc.: 700 $\mu\text{g}/\text{kg}$, country: Finland²⁸¹, *1 sa na

incidence: 9/17*, conc. range: ≤ 99 $\mu\text{g}/\text{kg}$, country: Germany⁴⁷⁸, *husked oat kernels

incidence: 3/51*, conc. range: ≤ 219 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 5/52*, conc. range: ≤ 310 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 3/17, conc. range: ≤ 51 $\mu\text{g}/\text{kg}$, \emptyset conc.: 32 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

incidence: 4/12*, conc. range: 16–60 $\mu\text{g}/\text{kg}$, \emptyset conc.: 42 $\mu\text{g}/\text{kg}$, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

15-ACETYLDEOXYNIVALENOL

incidence: 5/56, conc. range: 2–25 $\mu\text{g}/\text{kg}$, \emptyset conc.: 8.7 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 2/51, conc. range: 12–23 $\mu\text{g}/\text{kg}$, \emptyset conc.: 17.5 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 4/17*, conc. range: pr, country: Germany⁴⁷⁸, *husked oat kernels

ENNIATIN A₁

incidence: 1/1*, conc.: tr, country: Finland²⁰⁵, *ncac

ENNIATIN B

incidence: 1/1*, conc.: 23 $\mu\text{g}/\text{kg}$, country: Finland²⁰⁵, *ncac

ENNIATIN B₁

incidence: 1/1*, conc.: tr, country: Finland²⁰⁵, *ncac

FUSARENON X

incidence: 14/982* **, conc. range: 100–700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 300 $\mu\text{g}/\text{kg}$, country: Norway²²⁴, *ncac, **of different

categories (for more information please see the article)

incidence: 1/1, conc.: tr, country: Norway²⁷⁶

incidence: 5/17*, conc. range: pr, country: Germany⁴⁷⁸, *husked oat kernels

incidence: 1/17, conc.: 62 µg/kg, country: Germany⁵⁷²

HT-2 TOXIN

incidence: 1/36, conc.: 20 µg/kg, country: Finland⁹

incidence: 16/56, conc. range: 10–2,018 µg/kg, Ø conc.: 204.6 µg/kg, country: Germany⁴¹

incidence: 4/56, conc. range: 100–518 µg/kg, Ø conc.: 296.3 µg/kg, country: Germany⁴¹

incidence: 18/59, conc. range: 100–700 µg/kg, country: Germany⁶⁸

incidence: 24/99*, conc. range: 10–47 µg/kg, Ø conc.: 21 µg/kg, country: Poland³⁴², *ncac

incidence: 4/19, conc. range: 160–700 µg/kg, Ø conc.: 322.5 µg/kg, country: Germany⁴⁷⁰

incidence: 2/51*, conc. range: ≤507 µg/kg, country: Finland⁴⁸⁷, *for food and feed

incidence: 1/52*, conc.: 116 µg/kg, country: Finland⁴⁸⁷, *for food and feed

incidence: 4/59*, conc. range: ≤240 µg/kg, country: Finland⁴⁸⁷, *for food and feed

incidence: 17/17, conc. range: ≤494 µg/kg, Ø conc.: 181 µg/kg, country: Germany⁵⁷²

incidence: 12/12*, conc. range: 115–2,570 µg/kg, Ø conc.: 672 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

incidence: 5/5*, conc. range: 30–146 µg/kg, Ø conc.: 66 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *ncac

MONILIFORMIN

incidence: 8/21*, conc. range: tr–70 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 6/26*, conc. range: tr–88 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 24/26*, conc. range: tr–210 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 1/1*, conc.: 84 µg/kg, country: Finland²⁰⁵, *ncac

NEOSOLANIOL

incidence: 2/19, conc. range: 310–350 µg/kg, Ø conc.: 330 µg/kg, country: Germany⁴⁷⁰

incidence: ?/17*, conc. range: ≤28 µg/kg, country: Germany⁴⁷⁸, *husked oat kernels

incidence: 3/17, conc. range: ≤28 µg/kg, Ø conc.: 18 µg/kg, country: Germany⁵⁷²

incidence: 7/12*, conc. range: 13–48 µg/kg, Ø conc.: 22.6 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

NIVALENOL

incidence: 6/45, conc. range: 50–180 µg/kg, Ø conc.: 110 µg/kg, country: Hungary⁶

incidence: 2/36, conc. range: 26–29 µg/kg, Ø conc.: 27.5 µg/kg, country: Finland⁹

incidence: 10/56, conc. range: 3–32 µg/kg, Ø conc.: 10.6 µg/kg, country: Germany⁴¹

incidence: 30/56, conc. range: 13–235 µg/kg, Ø conc.: 87.0 µg/kg, country: Germany⁴¹

incidence: 16/54, conc. range: 2–249 µg/kg, Ø conc.: 50.9 µg/kg, country: Germany⁴¹

incidence: 23/51, conc. range: 12–164 µg/kg, Ø conc.: 57.9 µg/kg, country: Germany⁴¹

incidence: 37/55, conc. range: 16–628 µg/kg, Ø conc.: 191.9 µg/kg, country: Germany⁴¹

incidence: 8/18, conc. range: ≥50–300 µg/kg, Ø conc.: 194 µg/kg, country: Sweden⁶⁵

incidence: 2/52, conc. range: ≥ 50 –150 $\mu\text{g}/\text{kg}$, \emptyset conc.: 50 $\mu\text{g}/\text{kg}$, country: Sweden⁶⁵

incidence: 12/46, conc. range: ≥ 50 –4,700 $\mu\text{g}/\text{kg}$, \emptyset conc.: 1,094 $\mu\text{g}/\text{kg}$, country: Sweden⁶⁵

incidence: 45/71, conc. range: ≥ 50 –360 $\mu\text{g}/\text{kg}$, \emptyset conc.: 147 $\mu\text{g}/\text{kg}$, country: Sweden⁶⁵

incidence: 81/982* **, conc. range: 50–667 $\mu\text{g}/\text{kg}$, \emptyset conc.: 130 $\mu\text{g}/\text{kg}$, country: Norway²²⁴, *ncac, **of different categories (for more information please see the article)

incidence: 1/1, conc.: tr, country: Norway²⁷⁶

incidence: 1/7*, conc.: 28 $\mu\text{g}/\text{kg}$, country: Finland²⁸¹, *1 sa na

incidence: 1/73, conc.: pr, country: Canada³⁴⁶

incidence: 4/26, conc. range: 130–750 $\mu\text{g}/\text{kg}$, country: Canada⁴¹⁰

incidence: 17/17*, conc. range: ≤ 490 $\mu\text{g}/\text{kg}$, country: Germany⁴⁷⁸, *husked oat kernels

incidence: 7/51*, conc. range: ≤ 575 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 5/52*, conc. range: ≤ 530 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 14/59*, conc. range: ≤ 423 $\mu\text{g}/\text{kg}$, country: Finland⁴⁸⁷, *for food and feed

incidence: 6/6*, conc. range: 12–502 $\mu\text{g}/\text{kg}$, \emptyset conc.: 130.7 $\mu\text{g}/\text{kg}$, country: Poland⁵⁰⁶, *ncac

incidence: 13/13*, conc. range: 16–400 $\mu\text{g}/\text{kg}$, \emptyset conc.: 164.8 $\mu\text{g}/\text{kg}$, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 12/17, conc. range: ≤ 900 $\mu\text{g}/\text{kg}$, \emptyset conc.: 155 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

incidence: 11/12*, conc. range: 23–179 $\mu\text{g}/\text{kg}$, \emptyset conc.: 96.5 $\mu\text{g}/\text{kg}$, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

incidence: 5/5*, conc. range: ≤ 191 $\mu\text{g}/\text{kg}$, \emptyset conc.: 112 $\mu\text{g}/\text{kg}$, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *ncac

15-MONOACETOXYSCIRPENOL

incidence: 17/17*, conc. range: pr, country: Germany⁴⁷⁸, *husked oat kernels

incidence: 5/17, conc. range: ≤ 27 $\mu\text{g}/\text{kg}$, \emptyset conc.: 11 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

DIACETOXYSCIRPENOL

incidence: 1/14, conc.: 9,000 $\mu\text{g}/\text{kg}$, country: Germany⁶⁸

incidence: 12/99*, conc. range: 10–118 $\mu\text{g}/\text{kg}$, \emptyset conc.: 23 $\mu\text{g}/\text{kg}$, country: Poland³⁴², *ncac

incidence: 17/17*, conc. range: pr, country: Germany⁴⁷⁸, *husked oat kernels

SCIRPENTRIOL

incidence: 9/17, conc. range: ≤ 161 $\mu\text{g}/\text{kg}$, \emptyset conc.: 48 $\mu\text{g}/\text{kg}$, country: Germany⁵⁷²

T-2 TOXIN

incidence: 4/45, conc. range: 120–360 $\mu\text{g}/\text{kg}$, \emptyset conc.: 292.5 $\mu\text{g}/\text{kg}$, country: Hungary⁶

incidence: 5/36, conc. range: 21–73 $\mu\text{g}/\text{kg}$, \emptyset conc.: 52 $\mu\text{g}/\text{kg}$, country: Finland⁹

incidence: 26/56, conc. range: 2–57 $\mu\text{g}/\text{kg}$, \emptyset conc.: 21.8 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 17/56, conc. range: 8–86 $\mu\text{g}/\text{kg}$, \emptyset conc.: 27.4 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 33/54, conc. range: 16–26 $\mu\text{g}/\text{kg}$, \emptyset conc.: 20.0 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 14/51, conc. range: 17–224 $\mu\text{g}/\text{kg}$, \emptyset conc.: 56.6 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 17/55, conc. range: 19–1,686 $\mu\text{g}/\text{kg}$, \emptyset conc.: 244.5 $\mu\text{g}/\text{kg}$, country: Germany⁴¹

incidence: 1/167*, conc.: 50 $\mu\text{g}/\text{kg}$, country: Finland⁶², *different kinds of sa

incidence: 1/14, conc.: 300 µg/kg, country: Germany⁶⁸

incidence: 14/68, conc. range: 100–700 µg/kg, country: Germany⁶⁸

incidence: 9/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 1/7*, conc.: 18 µg/kg, country: Finland²⁸¹, *1 sa na

incidence: 15/99*, conc. range: 10–703 µg/kg, Ø conc.: 60 µg/kg, country: Poland³⁴², *ncac

incidence: 1/73, conc.: pr, country: Canada³⁴⁶

incidence: ?/14*, conc. range: ≤266.0 µg/kg, country: Germany³⁶⁴, *ncac

incidence: 1/73, conc.: 1,000 µg/kg, country: Canada⁴¹⁰

incidence: 2/19, conc. range: 80–86 µg/kg, Ø conc.: 83 µg/kg, country: Germany⁴⁷⁰

incidence: 2/51*, conc. range: ≤349 µg/kg, country: Finland⁴⁸⁷, *for food and feed

incidence: 5/5* **, conc. range: 17.2–121.5 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring oats

incidence: 5/5* **, conc. range: 10.8–41.8 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring oats

incidence: 17/17, conc. range: ≤310 µg/kg, Ø conc.: 73 µg/kg, country: Germany⁵⁷²

incidence: 12/12*, conc. range: 28–958 µg/kg, Ø conc.: 209.3 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

incidence: 3/5*, conc. range: ≤1,454 µg/kg, Ø conc.: 526 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *ncac

incidence: 21/26, conc. range: ≤814 µg/kg, Ø conc.: 418 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

T-2 TOXIN + HT-2 TOXIN

incidence: 17/17*, conc. range: ≤531 µg/kg, country: Germany⁴⁷⁸, *husked oat kernels

T-2 TETRAOL

incidence: 17/17*, conc. range: ≤654 µg/kg, country: Germany⁴⁷⁸, *husked oat kernels

incidence: 16/17, conc. range: ≤577 µg/kg, Ø conc.: 150 µg/kg, country: Germany⁵⁷²

T-2 TRIOL

incidence: 3/66, conc. range: 100–300 µg/kg, country: Germany⁶⁸

incidence: 6/17, conc. range: ≤41 µg/kg, Ø conc.: 19 µg/kg, country: Germany⁵⁷²

incidence: 8/12*, conc. range: 10–122 µg/kg, Ø conc.: 30.5 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

ZEARALENONE

incidence: 17/60, conc. range: 50–290 µg/kg, Ø conc.: 101.5 µg/kg, country: Hungary⁶

incidence: 11/36, conc. range: 29–383 µg/kg, Ø conc.: 95 µg/kg, country: Finland⁹

incidence: 21/56, conc. range: 1–186 µg/kg, Ø conc.: 19.0 µg/kg, country: Germany⁴¹

incidence: 16/56, conc. range: 2–108 µg/kg, Ø conc.: 12.8 µg/kg, country: Germany⁴¹

incidence: 11/54, conc. range: 1–36 µg/kg, Ø conc.: 14.0 µg/kg, country: Germany⁴¹

incidence: 10/51, conc. range: 2–27 µg/kg, Ø conc.: 8.0 µg/kg, country: Germany⁴¹

incidence: 12/55, conc. range: 2–223 µg/kg, Ø conc.: 24.7 µg/kg, country: Germany⁴¹

incidence: 6/12, conc. range: 20–400 µg/kg, country: Germany⁶⁸

incidence: 11/68, conc. range: 10–80 µg/kg, country: Germany⁶⁸

incidence: 2/7*, conc. range: 8.19–10.97 µg/kg, Ø conc.: 9.58 µg/kg, country: Germany¹⁰⁷, *ncac

incidence: 1/59, conc.: 1000 µg/kg, country: Germany¹²⁴, sa from EU

incidence: 1/1, conc.: 750 µg/kg, country: Norway²⁷⁶

incidence: 1/73, conc.: pr, country: Canada³⁴⁶

incidence: 1/73, conc.: 300 µg/kg, country: Canada⁴¹⁰

incidence: 78/78, conc. range: 0–10 µg/kg (71 sa), 11–50 µg/kg (6 sa), ≤200 µg/kg (1 sa), country: Austria⁴⁹¹

incidence: 3/5* **, conc. range: tr–16.3 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring oats

incidence: 1/2* **, conc.: 11 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring oats

incidence: 7/13*, conc. range: 10–543 µg/kg, Ø conc.: 139.3 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 4/17, conc. range: ≤48 µg/kg, Ø conc.: 21 µg/kg, country: Germany⁵⁷²

incidence: 5/12*, conc. range: 3–22 µg/kg, Ø conc.: 8 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden, *ncac

ZEARALENOL

incidence: 1/57, conc.: 150 µg/kg, country: Germany⁶⁸

Oats and barley see Barley-oats

Oats and barley, hammer-milled may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 1/51 overall*, conc.: 880 µg/kg, country: Canada¹³³, *different kinds of sa

Fusarium Toxins

DIACETOXYSCIRPENOL

incidence: 1/51 overall*, conc.: 800 µg/kg, country: Canada¹³³, *different kinds of sa

T-2 TOXIN

incidence: 1/51 overall*, conc.: 2,500 µg/kg, country: Canada¹³³, *different kinds of sa

Oats-barley see Barley-oats

Oats, horse bean, maize see Feed, mixed

Oil cake (copra) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 4/4*, conc. range: 10.2–64.6 µg/kg, Ø conc.: 38.0 µg/kg, country: Vietnam/France¹⁵⁰, sa from Vietnam, *copra oil cake

Oil cake (maize) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 4/10, conc. range: 10–20 µg/kg, country: India¹⁸³

Fusarium Toxins

ZEARALENONE

incidence: 1/10, conc.: 20 µg/kg, country: India¹⁸³

Oil cake (mustard) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS (B₁ + B₂)

incidence: 1/34, conc.: 700 µg/kg, country: India⁴³⁸

Oil cake (peanut) may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 1/10, conc.: 650 µg/kg, country: Egypt⁸⁹

ALTERNARIOL

incidence: 2/10, Ø conc.: 85 µg/kg, country: Egypt⁸⁹

ALTERNARIOL MONOMETHYL ETHER

incidence: 3/10, Ø conc.: 335 µg/kg, country: Egypt⁸⁹

ALBERTOXIN-I

incidence: 1/10, conc.: 400 µg/kg, country: Egypt⁸⁹

Aspergillus Toxins

AFLATOXIN B₁

incidence: 7/7, conc. range: 200–26,700 µg/kg, Ø conc.: 10,180 µg/kg, country: India³²¹

incidence: 9/9, conc. range: 800–2,000 µg/kg, country: India⁵⁷⁸

AFLATOXINS (B + G)

incidence: 19/25, conc. range: 10–4,500 µg/kg, Ø conc.: 330 µg/kg, country: France⁴⁵

incidence: 8/12, conc. range: ≤4,000 µg/kg or more, country: Malaya³⁸⁸, sa mainly from Thailand

AFLATOXIN

incidence: 9/9, conc. range: <30 µg/kg (6 sa), >30 µg/kg (1 sa), >200 µg/kg (1 sa), >600 µg/kg (1 sa), country: India³⁸⁰

AFLATOXINS

incidence: 8/8, conc. range: 22.3–1,602.0 µg/kg, Ø conc.: 381 µg/kg, country: Vietnam/France¹⁵⁰, sa from Vietnam

Oil cake (sunflower) may contain the following mycotoxins:

Alternaria Toxins

ALTENUENE

incidence: 1/10, conc.: 185 µg/kg, country: Egypt⁸⁹

ALTERNARIOL MONOMETHYL ETHER

incidence: 2/18, Ø conc.: 125 µg/kg, country: Egypt⁸⁹

Oil cake (til) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 2*/2**, conc.: ≤30 µg/kg, country: India⁵¹⁵, *all sa contained aflatoxin, **poultry feed

Oil (peanut) Feed peanut oil may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1, conc.: 73.46 µg/kg, country: India²⁴⁷

AFLATOXIN B₂

incidence: 1/1, conc.: 39 µg/kg, country: India²⁴⁷

Oil (soybean) Feed soybean oil may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/3, conc.: 30 µg/kg, country: USA⁸³

T-2 TOXIN EQUIVALENTS

incidence: 3/3, conc. range: 90–1,050 µg/kg*, Ø conc.: 646.7 µg/kg*, country: USA⁸³, *T-2 tetraol after base hydrolysis (primarily HT-2)

ZEARALENONE

incidence: 2/3, conc. range: 270–590 µg/kg, Ø conc.: 430 µg/kg, country: USA⁸³

Oilseed Feed oilseed may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 31/107* **, conc. range: < 5–2,000 µg/kg, country: South Africa⁷⁹, *ncac, **cotton seed, peanut, and sunflower sa

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 7/13*, conc. range: 20–100 µg/kg (1 sa), 200–300 µg/kg (5 sa), 300–400 µg/kg (1 sa), country: South Africa⁴⁴, *10 peanut and 3 cottonseed sa

Aspergillus* and *Penicillium* Toxins*PATULIN**

incidence: 8/107* **, conc. range: pr, country: South Africa⁷⁹, *ncac, **cotton seed, peanut, and sunflower sa

Fusarium* Toxins*TRICHOHECENES**

incidence: 1/107* **, conc.: pr, country: South Africa⁷⁹, *ncac, **cotton seed, peanut, and sunflower sa

ZEARALENONE

incidence: 1/107* **, conc.: pr, country: South Africa⁷⁹, *ncac, **cotton seed, peanut, and sunflower sa

Oilseed by-products see

By-products (oilseed)

Oilseed rape Feed oilseed rape may contain the following mycotoxins:

Aspergillus* Toxins*STERIGMATOCYSTIN**

incidence: 1/1*, conc.: 40 µg/kg, country: UK⁹³, *ncac

Aspergillus* and *Penicillium* Toxins*VIOMELLEIN**

incidence: 1/1*, conc.: pr, country: UK⁹³, *ncac

VIOMXANTHIN

incidence: 1/1*, conc.: 40 µg/kg, country: UK⁹³, *ncac

XANTHOMEGNIN

incidence: 1/1*, conc.: pr, country: UK⁹³, *ncac

Penicillium* Toxins*CITRININ**

incidence: 1/1*, conc.: 4,100 µg/kg, country: UK⁹³, *ncac

Oilseed rape meal see Meal (rapeseed)

Palm kernel may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/50 overall*, conc.: 508 µg/kg, country: Nigeria²⁷, *different kinds of sa (moldy and apparently good)

incidence: 6/7, conc. range: 21–50 µg/kg (5 sa), 51–100 µg/kg (1 sa), country: UK²⁶⁷, sa imported

incidence: 27/27, conc. range: <5 µg/kg (6 sa), 5–20 µg/kg (5 sa), 21–50 µg/kg (6 sa), 51–100 µg/kg (7 sa), 110–200 µg/kg (1 sa), ≤660 µg/kg (2 sa), Ø conc.: 91 µg/kg, country: Germany²⁹⁸, sa imported

AFLATOXIN B₂

incidence: 1/50 overall*, conc.: 254 µg/kg, country: Nigeria²⁷, *different kinds of sa (moldy and apparently good)

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 1/6, conc.: 3.19 µg/kg, country: Mexico/Spain²⁰, sa from Spain

Palm kernel expeller cake see Cake (palm kernel expeller)

Palm products may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 11/15, conc. range: 1–4 µg/kg (1 sa), 5–≤11 µg/kg (10 sa), country: UK⁹⁴, sa imported?!

AFLATOXINS (TOTAL)

incidence: 14/15, conc. range: 1–4 µg/kg (1 sa), 5–19 µg/kg (11 sa), 20–≤22 µg/kg (2 sa), country: UK⁹⁴, sa imported?!

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 2/15, conc. range: 1–4 µg/kg (1 sa), 6 µg/kg (1 sa), country: UK⁹⁴, sa imported?!

Penicillium* Toxins*CITRININ**

incidence: 1/15, conc.: 7 µg/kg, country: UK⁹⁴, sa imported?!

***Paspalum palidosum* straw** see

Straw, *Paspalum palidosum*

Pea Feed pea may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXINS (B₁ + B₂ + G₁ + G₂)**

incidence: 3/13*, conc. range: 18–30 µg/kg, Ø conc.: 24 µg/kg, country: Sudan/Oman⁴⁵⁹, sa from Sudan, *ncac

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 1/6, conc.: 4 µg/kg, country: Netherlands¹⁰³

Pea and bean Feed peas and beans may contain the following mycotoxins:

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 1/15, conc.: 33 µg/kg, country: UK⁹⁴, sa imported?

Penicillium* Toxins*CITRININ**

incidence: 1/15, conc.: 9 µg/kg, country: UK⁹⁴, sa imported?

Peanut Feed peanut may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 4/20*, Ø conc.: 400 µg/kg, country: Egypt¹⁶, *peanut shells

incidence: 3/20, Ø conc.: 30 µg/kg, country: Egypt¹⁶

incidence: 10/10, conc. range: tr (9 sa), 17 µg/kg (1 sa), country: UK³⁶, sa imported?

incidence: 2/2*, conc. range: 46–498 µg/kg, Ø conc.: 272 µg/kg, country: UK¹²², *ncac

incidence: 1/1, conc.: 500 µg/kg, country: Australia¹⁸¹

incidence: 22/37, conc. range: <20 µg/kg (1 sa), 21–50 µg/kg (1 sa), 51–100 µg/kg (3 sa), 101–1,000 µg/kg (9 sa), >1,000 µg/kg (8 sa), country: UK²⁶⁷, sa imported

incidence: 37/37, conc. range:
10–3,300 µg/kg, Ø conc.: 890 µg/kg,
country: Germany²⁹⁸, sa imported

incidence: 1/1, conc.: 56 µg/kg, country:
Denmark³¹⁶, sa from Nigeria

incidence: 20/28*, conc. range: 1–20 µg/kg
(8 sa), 21–100 µg/kg (10 sa), 101–300 µg/
kg (2 sa), country: USA³⁷⁰, *included are
15 peanut hulls, 7 peanut skin, and 6
peanut meal sa

incidence: 23/1,704* **, Ø conc.: 41 µg/kg,
country: USA⁴⁵⁴, *ncac, **0–2.5% damage,
no visible *Aspergillus flavus* growth

incidence: 20/242* **, Ø conc.: 35 µg/kg,
country: USA⁴⁵⁴, *ncac, **2.5–5.5%
damage, no visible *A. flavus* growth

incidence: 4/57* **, Ø conc.: 70 µg/kg,
country: USA⁴⁵⁴, *ncac, ** > 5.5% damage,
no visible *A. flavus* growth

incidence: 84/1,788* **, Ø conc.: 230 µg/
kg, country: USA⁴⁵⁴, *ncac, **0–2.5%
damage by visible *A. flavus* growth

incidence: 14/256* **, Ø conc.: 1,439 µg/
kg, country: USA⁴⁵⁴, *ncac, **2.5–5.5%
damage by visible *A. flavus* growth

incidence: 6/63* **, Ø conc.: 2,951 µg/kg,
country: USA⁴⁵⁴, *ncac, ** > 5.5% damage
by visible *A. flavus* growth

incidence: 1/16*, conc.: 1.57 µg/kg,
country: China⁴⁶⁸, *ncac

incidence: 1/1, conc.: 1,629 µg/kg,
country: Germany/Brazil⁵¹⁸, sa from Brazil

incidence: 2/50, conc. range: 435–625 µg/
kg, Ø conc.: 530 µg/kg, country:
Argentina⁵⁵¹

AFLATOXIN B₂

incidence: 3/20, Ø conc.: 15 µg/kg,
country: Egypt¹⁶

incidence: 2/2*, conc. range: 11–79 µg/kg,
Ø conc.: 45 µg/kg, country: UK¹²², *ncac

incidence: 1/16*, conc.: 0.39 µg/kg,
country: ⁴⁶⁸, *ncac

incidence: 1/1, conc.: 5 µg/kg, country:
Germany/Brazil⁵¹⁸, sa from Brazil

AFLATOXIN G₁

incidence: 2/2*, conc. range: 99–113 µg/kg,
Ø conc.: 106 µg/kg, country: UK¹²², *ncac

incidence: 1/1, conc.: 56 µg/kg, country:
Denmark³¹⁶, sa from Nigeria

incidence: 1/1, conc.: 759 µg/kg, country:
Germany/Brazil⁵¹⁸, sa from Brazil

incidence: 2/50, conc. range: 83–625 µg/
kg, Ø conc.: 354 µg/kg, country:
Argentina⁵⁵¹

AFLATOXIN G₂

incidence: 2/2*, conc. range: 23–31 µg/kg,
Ø conc.: 27 µg/kg, country: UK¹²², *ncac

incidence: 1/1, conc.: 5 µg/kg, country:
Germany/Brazil⁵¹⁸, sa from Brazil

AFLATOXINS (B₁ + B₂ + G₁)

incidence: 1/10*, conc.: 72 µg/kg, country:
Guatemala³⁷⁵, *ncac

AFLATOXIN

incidence: 8/50*, conc. range: 10–30 µg/kg
(1 sa), 31–100 µg/kg (4 sa), 101–500 µg/kg
(2 sa), >500 µg/kg (1 sa), country: India/
UK³¹¹, sa from India, *farmer storage

incidence: 69/229*, conc. range: 10–30 µg/
kg (23 sa), 31–100 µg/kg (13 sa), 101–
500 µg/kg (27 sa), >500 µg/kg (6 sa),
country: India/UK³¹¹, sa from India,
*trader storage

incidence: 64/233*, conc. range: 10–30 µg/
kg (32 sa), 31–100 µg/kg (15 sa), 101–
500 µg/kg (8 sa), >500 µg/kg (9 sa),
country: India/UK³¹¹, sa from India, *oil
miller storage

incidence: 20/48*, conc. range: 10–30 µg/
kg (9 sa), 31–100 µg/kg (2 sa), 101–
500 µg/kg (1 sa), >500 µg/kg (8 sa),

country: India/UK³¹¹, sa from India,
*insect damaged

incidence: 24/77*, conc. range: 11–30 µg/
kg (6 sa), 31–100 µg/kg (6 sa),
>100–≤1,776 µg/kg (12 sa), country:
India/UK³¹¹, sa from India, *ncac

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), country: Israel³⁶⁰, *ncac

incidence: 1*/1**, conc.: ≤30 µg/kg,
country: India⁵¹⁵, *sa contained aflatoxin,
**poultry feed

AFLATOXINS

incidence: 50/50*, conc. range:
3–22,000 µg/kg, Ø conc.: 1,685 µg/kg,
country: USA³⁵, *for food and feed

incidence: 9/56*, conc. range: <2–57 µg/kg,
Ø conc.: 17 µg/kg, country: USA³²⁹, *ncac

incidence: 18/79*, conc. range: <2–154 µg/
kg, Ø conc.: 25 µg/kg, country: USA³²⁹,
*ncac

incidence: 16/17*, conc. range: <2–311 µg/
kg, Ø conc.: 33 µg/kg, country: USA³²⁹,
*ncac

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 45/50*, conc. range: <50–
2,900 µg/kg, Ø conc.: 460 µg/kg, country:
USA³⁵, *for food and feed

incidence: 2/50, conc. range: 493–
4,300 µg/kg, Ø conc.: 2,396.5 µg/kg,
country: Argentina⁵⁵¹

OCHRATOXIN A

incidence: 1/1, conc.: 4,900 µg/kg,
country: Canada⁹²

Fusarium Toxins

DIACETOXYSCIRPENOL

incidence: 2/25*, conc. range: 410–
2,030 µg/kg, Ø conc.: 1,220 µg/kg,
country: India¹⁹⁹, ncac

T-2 TOXIN

incidence: 3/31*, conc. range: 170–
38,890 µg/kg, Ø conc.: 25,270 µg/kg,
country: India¹⁹⁹, *ncac

incidence: 3/25*, conc. range: 630–
1,460 µg/kg, Ø conc.: 1,043.3 µg/kg,
country: India¹⁹⁹, *ncac

Peanut cake see Cake (peanut)

Peanut cake (deoiled) see Cake
(peanut, deoiled)

Peanut dregs may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: ?/20, conc. range: 1,012–
7,296 µg/kg, country: Thailand⁵⁸⁴

AFLATOXIN B₂

incidence: ?/20, conc. range: 2,002–
2,434 µg/kg, country: Thailand⁵⁸⁴

AFLATOXIN G₁

incidence: ?/20, conc. range: 179–423 µg/
kg, country: Thailand⁵⁸⁴

AFLATOXIN G₂

incidence: ?/20, conc. range: 46–1454 µg/
kg, country: Thailand⁵⁸⁴

Peanut expeller see Expeller
(peanut)

Peanut hay may contain the following
mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/2, conc. range: 8–200 µg/kg,
Ø conc.: 104 µg/kg, country: Australia³²⁵

AFLATOXIN B₂

incidence: 1/2, conc.: 4 µg/kg, country:
Australia³²⁵

AFLATOXIN G₁
incidence: 2/2, conc. range: 12–200 µg/kg,
Ø conc.: 106 µg/kg, country: Australia³²⁵

AFLATOXIN G₂
incidence: 1/2, conc.: 20 µg/kg, country:
Australia³²⁵

Peanut hulls/skins see Hull (peanut)

Peanut leaf and stem may contain
the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/3*, conc. range: 10–1,000 µg/
kg, Ø conc.: 453.3 µg/kg, country:
Australia³²⁵, *including leaf and stem, leaf,
nut-in-shell/fines, and nut-in-shell

AFLATOXIN B₂
incidence: 2/3*, conc. range: 10 µg/kg,
Ø conc.: 10 µg/kg, country: Australia³²⁵,
*including leaf and stem, leaf, nut-in-
shell/fines, and nut-in-shell

AFLATOXIN G₁
incidence: 3/3*, conc. range: 10–1,200 µg/
kg, Ø conc.: 533.3 µg/kg, country:
Australia³²⁵, *including leaf and stem, leaf,
nut-in-shell/fines, and nut-in-shell

AFLATOXIN G₂
incidence: 2/3*, conc. range: 20–50 µg/kg,
Ø conc.: 35 µg/kg, country: Australia³²⁵,
*including leaf and stem, leaf, nut-in-
shell/fines, and nut-in-shell

Peanut meal see Meal (peanut)

Peanut meal and by-products see
Meal (peanut)

Peanut oil see Oil (peanut)

Peanut oil cake see Oil cake (peanut)

Peanut pods with haulms may
contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN
incidence: 24/80, conc. range:
10–30 µg/kg (15 sa), 31–100 µg/kg (7 sa),
>500 µg/kg (2 sa), country: India/UK³¹¹,
sa from India

Peanut shell may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/20, Ø conc.: 400 µg/kg,
country: Egypt¹⁶

AFLATOXINS (B₁ + B₂ + G₁)
incidence: 1/2, conc.: 48 µg/kg, country:
Guatemala³⁷⁵

Peanut, deoiled may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 89/89, conc. range: <200 µg/kg
(50 sa), 200–400 µg/kg (24 sa), 400–
800 µg/kg (14 sa), 800–2,000 µg/kg (1 sa),
country: India⁵⁷⁸

Pearl millet Feed pearl millet may
contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN
incidence: ?/14*, conc. range: ≤125 µg/kg,
country: India²⁵⁰, *commonly used as
poultry feed ingredient

Pellet may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 1/1*, conc.: 20 µg/kg, country: Australia¹²¹, *finisher pellets

incidence: 5[?]/5, conc. range: 0.274–0.667 µg/kg, country: Italy⁴⁶⁷

AFLATOXIN B₂

incidence: 4[?]/5, conc. range: ≤0.192 µg/kg, country: Italy⁴⁶⁷

AFLATOXIN G₁

incidence: 5[?]/5, conc. range: 0.073–0.434 µg/kg, country: Italy⁴⁶⁷

AFLATOXIN G₂

incidence: 4[?]/5, conc. range: ≤0.058 µg/kg, country: Italy⁴⁶⁷

Fusarium Toxins

DEOXYNIVALENOL

incidence: 39/39, conc. range: 0–100 µg/kg (2 sa), 101–500 µg/kg (19 sa), 501–1,000 µg/kg (10 sa), ≤1,100 µg/kg (8 sa), country: Austria⁴⁹¹

ZEARALENONE

incidence: 12/12, conc. range: 0–10 µg/kg (4 sa), 11–50 µg/kg (5 sa), ≤80 µg/kg (3 sa), country: Austria⁴⁹¹

Pellet (alfalfa) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁

incidence: 1/1*, conc.: <5,000 µg/kg, country: USA⁵⁸, *associated with animal health problems (ELEM)

Pellet (chicken) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS

incidence: 1/1, conc.: 2.6 µg/kg, country: South Africa⁵³³

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1/1, conc.: 600 µg/kg, country: South Africa⁵³³

FUMONISINS

incidence: 1/1, conc.: 8,700 µg/kg, country: South Africa⁵³³

ZEARALENONE

incidence: 1/1, conc.: 319.1 µg/kg, country: South Africa⁵³³

Pellet (oats) may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 12/12, conc. range: 21–4,230 µg/kg, Ø conc.: 735.3 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden

HT-2 TOXIN

incidence: 12/12, conc. range: 653–23,580 µg/kg, Ø conc.: 3,593.5 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden

NIVALENOL

incidence: 12/12, conc. range: 156–650 µg/kg, Ø conc.: 359.1 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden

T-2 TOXIN

incidence: 12/12, conc. range: 160–6,120 µg/kg, Ø conc.: 1,028 µg/kg, country: UK⁵⁷⁴, sa from England, Finland, Ireland, Scotland, and Sweden

Pellet (pig) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 1/2, conc.: 2,000 µg/kg,
country: USA⁵⁸

Pellet (rabbit) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN
incidence: 6/9, conc. range: ≤231 µg/kg,
country: Nigeria¹⁰⁹

Pet food see Feed (cat) and see Feed (dog)

Pig breeder's mash see Mash (pig breeder's)

Pig feed see Feed (pig)

Pig feedstuffs see Feed (pig)

Pig finisher see Finisher (pig)

Pig meal see Meal (pig)

Pig meal and pellets see Meal (pig)

Pig starter see Starter (pig)

Pig, mixed feed see Feed (pig)

Pigeon pea Feed pigeon pea may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/10, conc. range: 10–60 µg/kg,
country: India¹⁸³

incidence: 5/10, conc. range: tr–10 µg/kg,
country: India¹⁸³

Poultry and pig feed see Feed (poultry, pig)

Poultry breeder's mash See Mash (poultry breeder's)

Poultry concentrate see Feed (poultry)

Poultry feed see Feed (poultry)

Poultry feeds containing peanut see Feed (poultry)

Poultry feedstuffs see Feed (poultry)

Poultry starter ration see Ration (poultry starter)

Proprietary dairy ration see Ration (dairy, proprietary)

Protein concentrates see Concentrate(s)

Rabbit feed see Feed (rabbit)

Rabbit pellets see Pellet (rabbit)

Rapeseed cake see Cake (rapeseed)

Rapeseed meal see Meal (rapeseed)

Rat chow see Feed (rat)

Rat feed see Feed (rat)

Rat/mice feed see Feed (mice and rat)

Ration, complete may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/8*, conc. range: 300–1070 µg/kg, Ø conc.: 522.5 µg/kg, country: USA⁴⁵¹, *farms

AFLATOXIN B₂
incidence: 4/8*, conc. range: 14–130 µg/kg, Ø conc.: 45.5 µg/kg, country: USA⁴⁵¹, *farms

AFLATOXIN G₁
incidence: 1/8*, conc.: 13 µg/kg, country: USA⁴⁵¹, *farms

Fusarium Toxins

FUMONISIN B₁
incidence: 48/56*, conc. range: ≤121,000 µg/kg, country: USA⁵⁸, *associated with animal health problems (ELEM, PPE)

Ration, mixed may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/1, conc.: 216.0 µg/kg, country: Thailand/USA⁴³⁶, sa from Thailand
incidence: 1/1, conc.: 417.0 µg/kg, country: Thailand/USA⁴³⁶, sa from USA
incidence: 1/1, conc.: 940.0 µg/kg, country: Thailand/USA⁴³⁶, sa from USA

AFLATOXIN B₂
incidence: 1/1, conc.: 195.0 µg/kg, country: Thailand/USA⁴³⁶, sa from Thailand

incidence: 1/1, conc.: 19.0 µg/kg, country: Thailand/USA⁴³⁶, sa from USA

incidence: 1/1, conc.: 28.0 µg/kg, country: Thailand/USA⁴³⁶, sa from USA

AFLATOXIN G₁
incidence: 1/1, conc.: 2 µg/kg, country: Thailand/USA⁴³⁶, sa from USA

Ration, pelleted may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 5/8*, conc. range: ≤22,000 µg/kg, country: USA⁵⁸, *associated with animal health problems (ELEM)

Ration (dairy, proprietary) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 17/63*, conc. range: tr–30 µg/kg (4 sa), 31–60 µg/kg (7 sa), 61–100 µg/kg (3 sa), 101–500 µg/kg (2 sa), 500–1,000 µg/kg (1 sa), country: UK⁵⁴⁵, *suspect feedstuffs
incidence: 81/145, conc. range: tr–30 µg/kg (69 sa), 31–60 µg/kg (10 sa), 101–500 µg/kg (2 sa), country: UK⁵⁴⁵

Fusarium Toxins

ZEARALENONE
incidence: 1/1* **, conc.: 1,000 µg/kg, country: USA¹⁷³, *dairy ration, **sa involved in porcine feed refusal, lethargy, anemia

Ration (finisher) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 1/1, conc.: 8,000 µg/kg, country: USA⁵⁸

Ration (gestation) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 1/5, conc.: 1,000 µg/kg,
country: USA⁵⁸

ZEARALENONE
incidence: 1/1* **, conc.: 10 µg/kg, country:
USA¹⁷³, *porcine gestation ration, **sa
involved in porcine infertility, abortion

Ration (grower) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 1/3, conc.: 3,000 µg/kg,
country: USA⁵⁸

Ration (lactation) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 1/5, conc.: 1,000 µg/kg,
country: USA⁵⁸

Ration (nursery) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 2/2, conc. range: 4,000–5,000 µg/
kg, Ø conc.: 4,500 µg/kg, country: USA⁵⁸

Ration (poultry starter) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 1/2, conc.: 2,000 µg/kg,
country: USA⁵⁸

Ration (starter) may contain the following mycotoxins:

Fusarium Toxins

FUMONISIN B₁
incidence: 1/2, conc.: 2,000 µg/kg,
country: USA⁵⁸

Red gram see Gram (red)

Red gram husk see Husk (red gram)

Red hard winter wheat see Wheat

Reindeer feed see Feed (reindeer)

Rice Feed rice may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/4, conc.: 86.0 µg/kg, country:
India²⁵³

incidence: ?/? , conc. range: 98–392 µg/kg,
Ø conc.: 241 µg/kg, country: Nigeria⁵⁴³

AFLATOXIN B₂
incidence: ?/? , conc. range: tr, country:
Nigeria⁵⁴³

AFLATOXIN G₁
incidence: ?/? , conc. range: tr, country:
Nigeria⁵⁴³

AFLATOXIN G₂
incidence: ?/? , conc. range: tr, country:
Nigeria⁵⁴³

AFLATOXIN
incidence: 5/5, conc. range: <30 µg/kg (3
sa), >30 µg/kg (1 sa), >200 µg/kg (1 sa),
country: India³⁸⁰

incidence: 2*/2**, conc. range: ≤30 µg/kg,
country: India⁵¹⁵, *all sa contained
aflatoxin, **poultry feed

AFLATOXINS (TOTAL)

incidence: 1/182*, conc.: 5 µg/kg, country: USA¹⁶⁴, *ncac

AFLATOXINS

incidence: 4/12* **, conc. range: ≤27.0 µg/kg, country: Vietnam/France¹⁵⁰, sa from Vietnam, *ncac, **rice and broken rice

incidence: 24/157*, conc. range: <2–52 µg/kg, Ø conc.: 11 µg/kg, country: USA³²⁹, *ncac

incidence: 23/134*, conc. range: <2–282 µg/kg, Ø conc.: 52 µg/kg, country: USA³²⁹, *ncac

STERIGMATOCYSTIN

incidence: 12/37*, conc. range: ≤16,300 µg/kg, country: Japan⁵¹⁹, *ncac

Aspergillus* and *Penicillium* Toxins*CYCLOPIAZONIC ACID**

incidence: 1/1, conc.: 10,000 µg/kg, country: India³³

OCHRATOXIN A

incidence: 1/?*, conc.: tr?*, country: Nigeria⁵⁴³, *a typical fluorescing spot suggestive for ochratoxin

incidence: 2/25*, conc. range: 21.3–26.2 µg/kg, Ø conc.: 23.8 µg/kg, country: France⁵⁹¹, sa from Vietnam, *for food and feed

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 1/1*, conc.: 90 µg/kg, country: Papua, New Guinea/Japan⁷², sa most probably from Australia, *ncac

incidence: ?/10*, conc. range: ≤150 µg/kg, country: Germany³⁶⁴, *ncac

incidence: 2/2* **, conc. range: 120–2,900 µg/kg, Ø conc.: 1,510 µg/kg, country: Japan⁵⁸⁶, *ncac, **lodged and water-damaged rice

FUSARENON X

incidence: 1/2* **, conc.: 1,900 µg/kg, country: Japan⁵⁸⁶, *ncac, **lodged and water-damaged rice

NIVALENOL

incidence: 1/1*, conc.: 63 µg/kg, country: Papua, New Guinea/Japan⁷², sa most probably from Australia, *ncac

incidence: 2/2* **, conc. range: 200–2,200 µg/kg, Ø conc.: 1,200 µg/kg, country: Japan⁵⁸⁶, *ncac, **lodged and water-damaged rice

T-2 TOXIN

incidence: ?/10*, conc. range: ≤5.5 µg/kg, country: Germany³⁶⁴, *ncac

ZEARALENONE

incidence: 1/1*, conc.: 3,060 µg/kg, country: Papua, New Guinea/Japan⁷², sa most probably from Australia, *ncac

incidence: 3/42* **, conc. range: >200 µg/kg (3 sa), country: Uruguay/Italy⁹¹, sa from Uruguay, *ncac, **and by-products

Rice bran see Bran (rice)

Rice bran cake see Cake (rice bran)

Rice bran (deoiled) see Bran (rice, deoiled)

Rice chaff may contain the following mycotoxins:

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 1/1, conc.: 16 µg/kg, country: UK¹²⁹, sa from India

AFLATOXIN B₂

incidence: 1/1, conc.: 3 µg/kg, country: UK¹²⁹, sa from India

Rice crack may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/5, Ø conc.: 10 µg/kg, country: Egypt¹⁶

Rice cutting/rice polish see Rice

Rice germ may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 3/5, Ø conc.: 10 µg/kg, country: Egypt¹⁶

AFLATOXIN G₁
incidence: 3/5, Ø conc.: 10 µg/kg, country: Egypt¹⁶

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 1/3, Ø conc.: 577 µg/kg,
country: Egypt¹⁶

Fusarium Toxins

ZEARALENONE
incidence: 2/4, conc. range: 24–38 µg/kg,
Ø conc.: 31 µg/kg, country: Egypt¹⁶

Penicillium Toxins

CITRININ
incidence: 1/4, conc.: 4 µg/kg, country: Egypt¹⁶

Rice germ cake see Cake (rice germ)

Rice hulls may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXINS
incidence: 2/2, conc. range: 2 µg/kg,
Ø conc.: 2.0 µg/kg, country: Egypt³⁵⁷

Rice meal see Meal (rice)

Rice straw see Straw, rice

Rice, broken may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 20/24, conc. range: 0.4–8.2 µg/kg,
Ø conc.: 1.59 µg/kg, country: Vietnam⁵⁸⁸

AFLATOXIN B₂
incidence: 2/24, conc. range: 0.2–0.3 µg/kg,
Ø conc.: 0.22 µg/kg, country: Vietnam⁵⁸⁸

AFLATOXIN B
incidence: ?/5, conc. range: 14–20 µg/kg,
Ø conc.: 17.7 µg/kg, country: Pakistan¹⁶²

AFLATOXIN G₁
incidence: 1/24, conc.: 2.37 µg/kg,
country: Vietnam⁵⁸⁸

AFLATOXIN G
incidence: ?/5, conc. range: 5–25 µg/kg,
Ø conc.: 17.3 µg/kg, country: Pakistan¹⁶²

AFLATOXIN
incidence: 2/6*, conc. range: ≤125 µg/kg,
country: India²⁵⁰, *commonly used as
poultry feed ingredient

Fusarium Toxins

ZEARALENONE
incidence: 5/24, conc. range: 10–58 µg/kg,
Ø conc.: 31 µg/kg, country: Vietnam⁵⁸⁸

Rice, damaged may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 2/5, conc. range: 7–107 µg/kg,
 Ø conc.: 57 µg/kg, country: India²⁴⁷

Rice, polished Feed rice may contain
 the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 41/168, conc. range: ≤25 µg/kg
 (25 sa), 26–50 µg/kg (7 sa), 51–100 µg/kg
 (3 sa), 101–200 µg/kg (3 sa), 201–500 µg/
 kg (2 sa), 782 µg/kg (1 sa), Ø conc.:
 58.86 µg/kg, country: India²⁴⁷

incidence: 1/?*, conc.: 8 µg/kg, country:
 Japan³¹³, sa from Egypt

AFLATOXIN B₂

incidence: 9/168, Ø conc.: 44.51 µg/kg,
 country: India²⁴⁷

incidence: 1/?*, conc.: 2 µg/kg, country:
 Japan³¹³, sa from Egypt

AFLATOXIN

incidence: ?/12*, conc. range: ≤200 µg/kg,
 country: India²⁵⁰, *commonly used as
 poultry feed ingredient

AFLATOXINS

incidence: 2/2, conc. range: 2–5 µg/kg,
 Ø conc.: 3.5 µg/kg, country: Egypt³⁵⁷

Rodent feed see Feed (rodent)

Rye Feed rye may contain the following
 mycotoxins:

Alternaria Toxins

ALTERNARIOL MONOMETHYL ETHER

incidence: 1/8*, conc.: 20 µg/kg, country:
 Germany²⁹⁴, *ncac

Aspergillus Toxins

AFLATOXIN B

incidence: 4/21, conc. range: ≤10 µg/kg (3
 sa), >10 µg–≤100/kg (1 sa), country:
 France⁴⁶

AFLATOXINS (TOTAL)

incidence: 2/35*, conc. range: tr, country:
 USA¹⁶⁴, *ncac

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 1/14, conc.: 250 µg/kg, country:
 Hungary⁶

incidence: 1/10, conc.: <100 µg/kg (1 sa),
 country: Austria²⁹

incidence: 15/83, conc. range: 4–200 µg/
 kg, country: Poland⁸⁴

incidence: 1/3, conc.: 28 µg/kg, country:
 Germany¹⁸⁶

incidence: 4/23, conc. range: ≤0.038 µg/kg,
 country: Slovakia/Poland²⁴¹, sa from
 Poland, *for food and feed

incidence: 4/37* **, conc. range: 4.73–
 8.8 µg/kg, Ø conc.: 6.75 µg/kg, country:
 Poland³³⁹, *ncac, **conventionally grown

incidence: 5/46* **, conc. range: 2.0–
 35.3 µg/kg, Ø conc.: 14.5 µg/kg, country:
 Poland³³⁹, *ncac, **ecologically grown

incidence: 3/52* **, conc. range: 0.82–
 2.5 µg/kg, Ø conc.: 1.38 µg/kg, country:
 Poland³⁴¹, *ncac, **conventionally grown

incidence: 18/48* **, conc. range: 0.21–
 10.0 µg/kg, Ø conc.: 3.17 µg/kg, country:
 Poland³⁴¹, *ncac, **ecologically grown

incidence: 4/25, conc. range: 50–200 µg/
 kg, country: Poland³⁵⁹

incidence: 2/5*, conc. range: 0.39–0.55 µg/
 kg, Ø conc.: 0.47 µg/kg, country: Poland⁵⁰⁶,
 *ncac

incidence: 18/41, conc. range: <100 µg/kg
 (18 sa), country: Austria⁵⁰⁹

Fusarium Toxins

DEOXYNIVALENOL

incidence: 10/14, conc. range: 120–490 µg/kg, Ø conc.: 313 µg/kg, country: Hungary⁶

incidence: 1/22, conc.: 100 µg/kg, country: Germany⁶⁸

incidence: 24/31*, conc. range: 10–10,000 µg/kg, country: Germany¹⁹², *ncac

incidence: 4/23, conc. range: ≤240 µg/kg, country: Slovakia/Poland²⁴¹, sa from Poland, *for food and feed

incidence: 17/50* **, conc. range: ≤3,090 µg/kg, Ø conc.: 490 µg/kg, country: Germany³⁵⁵, *ncac, **conventionally grown

incidence: 2/19* **, conc. range: 120–130 µg/kg, Ø conc.: 125 µg/kg, country: Germany³⁵⁵, *ncac, **organically grown

incidence: 14/46*, conc. range: ≤102 µg/kg, Ø conc.: 54 µg/kg, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

incidence: 5/5*, conc. range: 13–26 µg/kg, Ø conc.: 18.6 µg/kg, country: Poland⁵⁰⁶, *ncac

incidence: 1/5*, conc.: 3 µg/kg, country: Korea⁵¹⁰, *ncac

incidence: 9/9*, conc. range: tr–691 µg/kg, country: Lithuania⁵²⁰, *for food and feed

incidence: 5/7*, conc. range: tr, country: Lithuania⁵²⁰, *for food and feed

incidence: 1/2*, conc.: 292 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 6/22, conc. range: 70–400 µg/kg, Ø conc.: 130.0 µg/kg, country: Poland⁵⁹⁷

ENNIATIN A₁

incidence: 1/1*, conc.: tr, country: Finland²⁰⁵, *ncac

ENNIATIN B

incidence: 1/1*, conc.: 47 µg/kg, country: Finland²⁰⁵, *ncac

ENNIATIN B₁

incidence: 1/1*, conc.: tr, country: Finland²⁰⁵, *ncac

HT-2 TOXIN

incidence: 1/21, conc.: 100 µg/kg, country: Germany⁶⁸

incidence: 12/46*, conc. range: ≤353 µg/kg, Ø conc.: 61 µg/kg, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

NIVALENOL

incidence: 1/14, conc.: 120 µg/kg, country: Hungary⁶

incidence: 1/46*, conc.: 20 µg/kg, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

incidence: 1/5*, conc.: 4 µg/kg, country: Poland⁵⁰⁶, *ncac

incidence: 5/5*, conc. range: 46–114 µg/kg, Ø conc.: 83 µg/kg, country: Korea⁵¹⁰, *ncac

incidence: 2/2*, conc. range: 15–18 µg/kg, Ø conc.: 16.5 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

DIACETOXYSCIRPENOL

incidence: 1/3, conc.: 800 µg/kg, country: Germany⁶⁸

T-2 TOXIN

incidence: 1/14, conc.: 150 µg/kg, country: Hungary⁶

incidence: 10/22, conc. range: 200–700 µg/kg, country: Germany⁶⁸

incidence: 1/46*, conc.: 52 µg/kg, Ø conc.: 34 µg/kg?, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

ZEARALENONE

incidence: 8/14, conc. range: 80–520 µg/kg, Ø conc.: 231.3 µg/kg, country: Hungary⁶

incidence: 1/4, conc.: 10–70 µg/kg, country: Germany⁶⁸

incidence: 2/6*, conc. range: 7.15–9.30 µg/kg, Ø conc.: 8.23 µg/kg, country: Germany¹⁰⁷, *ncac

incidence: 1/1, conc.: 5072 µg/kg, country: Germany⁴⁶⁰

incidence: 3/5*, conc. range: 3–4 µg/kg, Ø conc.: 3.3 µg/kg, country: Korea⁵¹⁰, *ncac

incidence: 1/5*, conc.: 28.8 µg/kg, country: Lithuania⁵²⁰, *for food and feed

incidence: 1/2*, conc.: 4 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

Safflower cake see Cake (safflower)

Sal seed cake see Cake (sal seed)

Screenings may contain the following mycotoxins:

Fusarium Toxins**FUMONISIN B₁**

incidence: 54/56*, conc. range: 900–330,000 µg/kg, Ø conc.: 77,900 µg/kg, country: USA⁵⁸, *associated with animal health problems (ELEM, PPE)

Screenings (maize) may contain the following mycotoxins:

Aspergillus Toxins**AFLATOXIN**

incidence: 1/1*, conc.: 20 µg/kg, country: USA², *contaminated corn screenings

incidence: 1/1, conc.: 20 µg/kg, country: USA¹⁹¹

incidence: ?/23*, conc.: 0.07 µg/kg, country: USA⁴⁸⁵, *bushel weight group: 45–50 lb/bu

Fusarium Toxins**DEOXYNIVALENOL**

incidence: 1/1*, conc.: 300 µg/kg, country: USA², *contaminated corn screenings

incidence: 4/4, conc. range: 2,500–4,400 µg/kg, Ø conc.: 3,575 µg/kg, country: UK⁹⁵

incidence: 1/1, conc.: 300 µg/kg, country: USA¹⁹¹

3-ACETYLDEOXYNIVALENOL

incidence: 3/4, conc. range: 40–110 µg/kg, Ø conc.: 66.7 µg/kg, country: UK⁹⁵

15-ACETYLDEOXYNIVALENOL

incidence: 4/4, conc. range: 250–590 µg/kg, Ø conc.: 375 µg/kg, country: UK⁹⁵

FUMONISIN B₁

incidence: 1/1*, conc.: 6,400 µg/kg, country: USA², *clean corn screenings

incidence: 1/1*, conc.: 166,000 µg/kg, country: USA², *contaminated corn screenings

incidence: 2/2*, conc. range: 105,000–155,000 µg/kg, Ø conc.: 130,000 µg/kg, country: USA⁵⁸, *associated with animal health problems (PPE)

incidence: 4/4, conc. range: 21,000–27,000 µg/kg, Ø conc.: 23,750 µg/kg, country: UK⁹⁵

incidence: 24/24, conc. range: 230–3,780 µg/kg, Ø conc.: 1,150 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: 37/37, conc. range: 50–44,750 µg/kg, Ø conc.: 5,010 µg/kg*, country: South Africa¹⁴⁷, *mean of all sa

incidence: ?/180, conc. range:
100–239,000 µg/kg, country: USA¹⁵¹

incidence: 6/6, conc. range: 1,740–
196,460 µg/kg, Ø conc.: 55,395 µg/kg,
country: USA¹⁵³

incidence: 14/15*, conc. range:
≤1,500 µg/kg, Ø conc.: 417 µg/kg,
country: Spain¹⁵⁹

incidence: 4/4, conc. range:
23,000–46,000 µg/kg, Ø conc.: 30,250 µg/
kg, country: USA¹⁸⁹

incidence: 1/1, conc.: 166,000 µg/kg,
country: USA¹⁹¹

incidence: 17/17, conc. range:
61,000–160,000 µg/kg, country: USA³¹⁹

incidence: 12/12, conc. range:
772.4–5,462 µg/kg, Ø conc.: 2,152.7 µg/kg,
country: Spain³⁴⁷

FUMONISIN B₂
incidence: 1/1*, conc.: 48,000 µg/kg,
country: USA², *contaminated corn
screenings

incidence: 4/4, conc. range: 2,800–
3,500 µg/kg, Ø conc.: 3,225 µg/kg,
country: UK⁹⁵

incidence: 24/24, conc. range: ≤1,420 µg/
kg, Ø conc.: 400 µg/kg*, country: South
Africa¹⁴⁷, *mean of all sa

incidence: 37/37, conc. range: ≤26,890 µg/
kg, Ø conc.: 2,360 µg/kg*, country: South
Africa¹⁴⁷, *mean of all sa

incidence: 6/6, conc. range: 590–
42,840 µg/kg, Ø conc.: 15,080 µg/kg,
country: USA¹⁵³

incidence: 7/15*, conc. range: ≤500 µg/kg,
Ø conc.: 236 µg/kg, country: Spain¹⁵⁹

incidence: 1/1, conc.: 48,000 µg/kg,
country: USA¹⁹¹

incidence: 17/17, conc. range: 19,000–
49,000 µg/kg, country: USA³¹⁹

FUMONISIN B₃
incidence: 24/24, conc.
range: ≤550 µg/kg, Ø conc.: 160 µg/kg*,
country: South Africa¹⁴⁷, *
mean of all sa

incidence: 37/37, conc. range: ≤12,180 µg/
kg, Ø conc.: 840 µg/kg*, country: South
Africa¹⁴⁷, *mean of all sa

FUMONISIN
incidence: 55/55, conc. range: ≤500 µg/kg
(3 sa), 500–10,000 µg/kg (2 sa), 10,000–
25,000 µg/kg (24 sa), >25,000 µg/kg
(26 sa), country: South Africa¹⁴⁷, sa
from USA

incidence: 9/9, conc. range: ≤500 µg/kg
(3 sa), 500–10,000 µg/kg (2 sa), 10,000–
25,000 µg/kg (3 sa), >25,000 µg/kg
(1 sa), country: South Africa¹⁴⁷, sa from
USA

incidence: 85/85, conc. range: 2,600–
32,000 µg/kg, Ø conc.: 12,100 µg/kg,
country: USA³⁷⁰

incidence: ?/23*, conc.: 530 µg/kg,
country: USA⁴⁸⁵, *bushel weight group:
35–40 lb/bu

incidence: ?/23*, conc.: 1,730 µg/kg,
country: USA⁴⁸⁵, *bushel weight group:
40–45 lb/bu

incidence: ?/23*, conc.: 1,000 µg/kg,
country: USA⁴⁸⁵, *bushel weight group:
45–50 lb/bu

FUMONISINS
incidence: 4/4, conc. range: 100–999 µg/kg
(1 sa), 1,000–≤2,700 µg/kg (3 sa), country:
UK⁹⁴, sa imported?

incidence: 2/2, conc. range:
30,000–200,000 µg/kg, country: USA¹⁴²

FUSARENON X
incidence: 4/4, conc. range:
35–90 µg/kg, Ø conc.: 71.3 µg/kg, country:
UK⁹⁵

FUSARIC ACID

incidence: 2/2*, conc. range: 11,550–12,390 µg/kg, Ø conc.: 11,970 µg/kg, country: USA⁴¹³, *associated with ELEM

FUSARIN-C

incidence: 1/1, conc.: 390 µg/kg, country: South Africa/USA⁶⁹, sa from USA, *sa consisted of broken kernels, pieces of cobs and stalks, and other debris

HT-2 TOXIN

incidence: 4/4, conc. range: 60–250 µg/kg, Ø conc.: 150 µg/kg, country: UK⁹⁵

MONILIFORMIN

incidence: 1/1*, conc.: 2,820 µg/kg, country: South Africa/USA⁶⁹, sa from USA, *sa consisted of broken kernels, pieces of cobs and stalks, and other debris

incidence: 4/4, conc. range: 2,200–4,600 µg/kg, Ø conc.: 3,150 µg/kg, country: UK⁹⁵

NIVALENOL

incidence: 4/4, conc. range: 590–2,300 µg/kg, Ø conc.: 1,322.5 µg/kg, country: UK⁹⁵

MONOACETOXYSCIRPENOL

incidence: 3/4, conc. range: 10–20 µg/kg, Ø conc.: 15 µg/kg, country: UK⁹⁵

DIACETOXYSCIRPENOL

incidence: 1/3, conc.: 800 µg/kg, country: Germany⁶⁸

T-2 TOXIN

incidence: 4/4, conc. range: 40–130 µg/kg, Ø conc.: 102.5 µg/kg, country: UK⁹⁵

incidence: ?/23*, conc.: 2.83 µg/kg, country: USA⁴⁸⁵, *bushel weight group: 40–45 lb/bu

ZEARALENONE

incidence: 3/4, conc. range: 20–99 µg/kg (1 sa), 100–≤510 µg/kg (2 sa), country: UK⁹⁴, sa imported?

incidence: 4/4, conc. range: 1,300–1,800 µg/kg, Ø conc.: 1,450 µg/kg, country: UK⁹⁵

incidence: ?/23*, conc.: 13,330 µg/kg, country: USA⁴⁸⁵, *bushel weight group: 35–40 lb/bu

incidence: ?/23*, conc.: 3,330 µg/kg, country: USA⁴⁸⁵, *bushel weight group: 40–45 lb/bu

incidence: ?/23*, conc.: 2,920 µg/kg, country: USA⁴⁸⁵, *bushel weight group: 45–50 lb/bu

incidence: 1/1, Ø conc.: 2,660 µg/kg, country: Portugal/Spain⁶⁰⁵, sa of unknown origin

Screenings (sunflower) may contain the following mycotoxins:

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 1/1, conc.: 10,000 µg/kg, country: USA⁵⁶⁵

Sesame Feed sesame may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/3, conc. range: 10 µg/kg, Ø conc.: 10 µg/kg, country: Germany²⁹⁸, sa imported

Sesame cake see Cake (sesame)

Sheep feed see Feed (sheep)

Shrimp feed see Feed (shrimp)

Silage may contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 25/47, conc. range: ≤1,250 µg/kg, Ø conc.: 550 µg/kg, country: Netherlands⁴⁵⁵

incidence: 13/16*, Ø conc.: 465 µg/kg,
country: Netherlands⁴⁵⁵, *silage mixture

FUMONISIN B₁
incidence: 1/1*, conc.: 13,000 µg/kg,
country: USA⁵⁸, *associated with animal
health problems (ELEM)

ZEARALENONE
incidence: 1/1*, conc.: 87,300 µg/kg,
country: USA¹⁷³, *sa caused bovine
abortion

incidence: 8/47, conc. range:
≤273 µg/kg, Ø conc.: 125 µg/kg, country:
Netherlands⁴⁵⁵

incidence: 4/16*, Ø conc.: 48 µg/kg,
country: Netherlands⁴⁵⁵, *silage mixture

Penicillium Toxins

MYCOPHENOLIC ACID
incidence: 6/47, conc. range: ≤2,630 µg/kg,
Ø conc.: 524 µg/kg, country:
Netherlands⁴⁵⁵

incidence: 3/29*, conc. range: ≤83 µg/kg,
Ø conc.: 66 µg/kg, country: Netherlands⁴⁵⁵,
*ensiled by-products

incidence: 6/16*, Ø conc.:
256 µg/kg, country: Netherlands⁴⁵⁵, *silage
mixture

ROQUEFORTINE C
incidence: 9/47, conc. range: ≤3,160 µg/kg,
Ø conc.: 778 µg/kg, country:
Netherlands⁴⁵⁵

incidence: 2/29*, conc. range: ≤170 µg/kg,
Ø conc.: 123 µg/kg, country:
Netherlands⁴⁵⁵, *ensiled by-products

incidence: 7/16*, Ø conc.:
568 µg/kg, country: Netherlands⁴⁵⁵, *silage
mixture

Silage mixture see Silage

Silage (balls) may contain the
following mycotoxins:

Penicillium Toxins

ROQUEFORTINE C
incidence: 1/4, conc.: 481.5 µg/kg,
country: Germany⁶⁰³

Silage (corn cob mix) may contain
the following mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A
incidence: 3/4*, conc. range: 4–5 µg/kg,
Ø conc.: 5 µg/kg, country: Netherlands¹⁰³,
*molded

incidence: 2/2*, conc. range: 3–6 µg/kg,
Ø conc.: 5 µg/kg, country: Netherlands¹⁰³,
*not molded

Fusarium Toxins

DEOXYNIVALENOL
incidence: 1/2*, conc.: 130 µg/kg, country:
Netherlands¹⁰³, *not molded

ZEARALENONE
incidence: 4/4*, conc. range: 47–3,100 µg/
kg, Ø conc.: 890 µg/kg, country:
Netherlands¹⁰³, *molded

incidence: 2/2*, conc. range: 33–140 µg/
kg, Ø conc.: 87 µg/kg, country:
Netherlands¹⁰³, *not molded

Penicillium Toxins

ROQUEFORTINE C
incidence: 2/27, conc. range:
86–2,127.1 µg/kg, Ø conc.: 1,106.6 µg/kg,
country: Germany⁶⁰³

Silage (grass) may contain the
following mycotoxins:

Fusarium Toxins

ZEARALENONE
incidence: 1/16*, conc.: 180 µg/kg,
country: Netherlands⁴⁵⁵, *grass silage
taken from the core

incidence: 2/16*, Ø conc.: 170 µg/kg,
country: Netherlands⁴⁵⁵, *grass silage
taken from the surface

incidence: 4/40, conc. range: ≤183 µg/kg,
Ø conc.: 71 µg/kg, country: Netherlands⁶¹³

incidence: 1/40, conc.: 25 µg/kg, country:
Netherlands⁶¹³

incidence: 2/40, conc. range: 34–308 µg/
kg, Ø conc.: 171 µg/kg, country:
Netherlands⁶¹³

Penicillium Toxins

MYCOPHENOLIC ACID

incidence: 36/98, conc. range:
21–35,000 µg/kg, Ø conc.: 2,200 µg/kg,
country: Germany³⁹³

incidence: 2/16*, Ø conc.: 40 µg/kg,
country: Netherlands⁴⁵⁵, *grass silage
taken from the surface

ROQUEFORTINE C

incidence: 9/12* **, conc. range: 200–
15,000 µg/kg, Ø conc.: 5,633 µg/kg, country:
Germany⁷⁴, *molded, **wilted grass silage

incidence: 5/12* **, conc. range: 100–
300 µg/kg, Ø conc.: 160 µg/kg, country:
Germany⁷⁴, *unmolded, **wilted grass
silage

incidence: 2/16*, Ø conc.: 100 µg/kg,
country: Netherlands⁴⁵⁵, *grass silage
taken from the core

incidence: 3/16*, Ø conc.: 128 µg/kg,
country: Netherlands⁴⁵⁵, *grass silage
taken from the surface

incidence: 3/20, conc. range: 99.4–
583.6 µg/kg, Ø conc.: 278.4 µg/kg,
country: Germany⁶⁰³

incidence: 1/40, conc.: 81 µg/kg, country:
Netherlands⁶¹³

Silage (maize) may contain the
following mycotoxins:

Alternaria Toxins

AAL-TA

incidence: 28/120*, conc. range: 200–
2,000 µg/kg, country: USA⁵²², *fresh and
ensiled

AAL-TB

incidence: 16/120*, conc. range:
30–900 µg/kg, country: USA⁵²², *fresh and
ensiled

ALTERNARIOL

incidence: 1/10*, conc.: 24 µg/kg, country:
Denmark⁵⁵⁷, *unspoiled maize silage

incidence: 1/10*, conc.: 236 µg/kg,
country: Denmark⁵⁵⁷, *fungal hot spots in
maize silage

ALTERNARIOL MONOMETHYL ETHER

incidence: 1/10*, conc.: 51 µg/kg, country:
Denmark⁵⁵⁷, *fungal hot spots in maize
silage

Aspergillus Toxins

AFLATOXINS

incidence: 36/36, Ø conc. range: 12.5–
15.7 µg/kg, country: México⁵⁵⁹

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 44/120, conc. range:
20–1,430 µg/kg, country: USA⁵²¹

FUMIGACLAVINE A

incidence: 1/10*, conc.: pr, country:
Denmark⁵⁵⁷, *fungal hot spots in maize
silage

GLIOTOXIN

incidence: 2/10*, conc. range: 282–906 µg/
kg, Ø conc.: 594 µg/kg, country: Denmark⁵⁵⁷,
*fungal hot spots in maize silage

incidence: 1/1*, conc.: 877.7 µg/kg dw,
country: France⁵⁶⁰, *bottom of mature
corn silage

OCHRATOXIN A

incidence: 2/7, conc. range: <100 µg/kg (2 sa), country: Austria²⁹

incidence: 4/13, conc. range: <100 µg/kg (4 sa), country: Austria⁵⁰⁹

OCHRATOXINS

incidence: 36/36, Ø conc. range: 4.4–5.8 µg/kg, country: México⁵⁵⁹

PATULIN

incidence: 28/120, conc. range: 10–1,210 µg/kg, country: USA⁵²¹

Fusarium* Toxins*BEAUVERICIN**

incidence: 5/20*, conc. range: ≤63 µg/kg, country: Denmark⁹⁷, *3-month-old maize silage

DEOXYNIVALENOL

incidence: 22/22*, conc. range: 100–<500 µg/kg (4 sa), 500–<1,000 µg/kg (2 sa), 1,000–<2,000 µg/kg (9 sa), 2,000–<5,000 µg/kg (5 sa), ≥5,000 µg/kg (2 sa), country: Austria²⁶, *grain–maize silage

incidence: 10/10*, conc. range: 100–<500 µg/kg (7 sa), 500–<1,000 µg/kg (3 sa), country: Austria²⁶, *grain–maize silage

incidence: 18/18, conc. range: 323–3,510 µg/kg, Ø conc.: 1,426 µg/kg, country: Germany³⁶⁶

incidence: 16/16*, Ø conc.: 933 µg/kg, country: Netherlands⁴⁵⁵, *corn silage taken from the core

incidence: 15/16*, Ø conc.: 978 µg/kg, country: Netherlands⁴⁵⁵, *corn silage taken from the surface

incidence: 7/7*, Ø conc.: 964 µg/kg, country: Netherlands⁴⁵⁵, *corn silage taken from molded spots

incidence: 418/418, conc. range: 0–100 µg/kg (36 sa), 101–500 µg/kg (185 sa), 501–1,000 µg/kg (101 sa), ≤2,800 µg/kg (96 sa), country: Austria⁴⁹¹

incidence: 2/10*, conc. range: 888–1,092 µg/kg, Ø conc.: 990 µg/kg, country: Denmark⁵⁵⁷, *fungal hot spots in maize silage

incidence: 36/36, Ø conc. range: 1,400–6,700 µg/kg, country: México⁵⁵⁹

incidence: 1/1*, conc.: 159.8 µg/kg dw, country: France⁵⁶⁰, *top of mature corn silage

incidence: 1/1*, conc.: 203.5 µg/kg dw, country: France⁵⁶⁰, *bottom of mature corn silage

incidence: 5/5, conc. range: ≤3,944 µg/kg, Ø conc.: 2,919 µg/kg, country: Germany⁵⁷²

incidence: 16/40, conc. range: ≤2,199 µg/kg, Ø conc.: 936 µg/kg, country: Netherlands⁶¹³

incidence: 26/40, conc. range: ≤1,005 µg/kg, Ø conc.: 453 µg/kg, country: Netherlands⁶¹³

incidence: 59/60, conc. range: ≤3,142 µg/kg, Ø conc.: 1,009 µg/kg, country: Netherlands⁶¹³

15-ACETYLDEOXYNIVALENOL

incidence: 17/18, conc. range: 20–347 µg/kg, Ø conc.: 84 µg/kg, country: Germany³⁶⁶

incidence: 5/5, conc. range: ≤127 µg/kg, Ø conc.: 59 µg/kg, country: Germany⁵⁷²

incidence: 3/60, conc. range: 729–1,013 µg/kg, Ø conc.: 901.3 µg/kg, country: Netherlands⁶¹³

ENNIATIN B

incidence: 19/20*, conc. range: ≤218 µg/kg, country: Denmark⁹⁷, *3-month-old maize silage

incidence: 4/10*, conc. range: 25–63 µg/kg, Ø conc.: 44 µg/kg, country: Denmark⁵⁵⁷, *unspoiled maize silage

incidence: 3/10*, conc. range: 37–200 µg/kg, Ø conc.: 93 µg/kg, country:

Denmark⁵⁵⁷, *fungal hot spots in maize silage

ENNIATIN B₁

incidence: 8/20*, conc. range: ≤48 µg/kg, country: Denmark⁹⁷, *3-month-old maize silage

FUMONISIN B₁

incidence: 86/89, conc. range: 21–1,824 µg/kg, Ø conc.: 615 µg/kg, country: USA⁵⁰²

incidence: 110/120*, conc. range: 200–10,100 µg/kg, country: USA⁵²², *fresh and ensiled

incidence: 2/60, conc. range: 1,600–26,200 µg/kg, Ø conc.: 13,900 µg/kg, country: Netherlands⁶¹³

FUMONISIN B₂

incidence: 64/89, conc. range: 21–276 µg/kg, Ø conc.: 93 µg/kg, country: USA⁵⁰²

incidence: 66/120*, conc. range: 200–20,300 µg/kg, country: USA⁵²², *fresh and ensiled

incidence: 1/60, conc.: 7,800 µg/kg, country: Netherlands⁶¹³

FUMONISIN B₃

incidence: 51/89, conc. range: 10–174 µg/kg, Ø conc.: 51 µg/kg, country: USA⁵⁰²

FUMONISINS

incidence: 36/36, Ø conc. range: 100–700 µg/kg, country: México⁵⁵⁹

HT-2 TOXIN

incidence: 16/18, conc. range: 5–47 µg/kg, Ø conc.: 21 µg/kg, country: Germany³⁶⁶

incidence: 5/5, conc. range: ≤26 µg/kg, Ø conc.: 18 µg/kg, country: Germany⁵⁷²

NIVALENOL

incidence: 15/18, conc. range: 113–2,750 µg/kg, Ø conc.: 1,049 µg/kg, country: Germany³⁶⁶

incidence: 2/10*, conc. range: 138–142 µg/kg, Ø conc.: 140 µg/kg, country:

Denmark⁵⁵⁷, *fungal hot spots in maize silage

incidence: 5/5, conc. range: ≤2,809 µg/kg, Ø conc.: 1,612 µg/kg, country: Germany⁵⁷²

MONOACETOXYSCIRPENOL

incidence: 8/18, conc. range: 14–51 µg/kg, Ø conc.: 32 µg/kg, country: Germany³⁶⁶

incidence: 3/5, conc. range: <49 µg/kg, Ø conc.: 30 µg/kg, country: Germany⁵⁷²

DIACETOXYSCIRPENOL

incidence: 1/18, conc.: 64 µg/kg, country: Germany³⁶⁶

SCIRPENTRIOL

incidence: 2/18, conc. range: 84–110 µg/kg, Ø conc.: 87 µg/kg, country: Germany³⁶⁶

incidence: 1/5, conc.: 124 µg/kg, country: Germany⁵⁷²

T-2 TETRAOL

incidence: 1/18, conc.: 79 µg/kg, country: Germany³⁶⁶

ZEARALENONE

incidence: 24/24*, conc. range: 5–<20 µg/kg (3 sa), 20–<50 µg/kg (3 sa), 50–<100 µg/kg (4 sa), 100–<200 µg/kg (12 sa), ≥200 µg/kg (2 sa), country: Austria²⁶, *grain–maize silage

incidence: 10/10*, conc. range: <5 µg/kg (2 sa), 5–<20 µg/kg (6 sa), 20–<50 µg/kg (1 sa), 100–<200 µg/kg (1 sa), country: Austria²⁶, *grain–maize silage

incidence: 8/20*, conc. range: 300–1,200 µg/kg (2 sa), 1,300–4,000 µg/kg (4 sa), 4,100–8,500 µg/kg (2 sa), country: Serbia/Syria³¹⁴, sa from Serbia, *ensiled maize grains

incidence: 18/18, conc. range: 2–1,593 µg/kg, Ø conc.: 116 µg/kg, country: Germany³⁶⁶

incidence: 8/16*, Ø conc.: 146 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from the core

incidence: 7/16*, Ø conc.: 137 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from the surface

incidence: 2/7*, Ø conc.: 73 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from molded spots

incidence: 149/149, conc. range: 0–10 µg/
kg (61 sa), 11–50 µg/kg (47 sa),
51–100 µg/kg (21 sa), ≤600 µg/kg (20 sa),
country: Austria⁴⁹¹

incidence: 4/10*, conc. range: 10–311 µg/
kg, Ø conc.: 90 µg/kg, country:
Denmark⁵⁵⁷, *unspoiled maize silage

incidence: 4/10*, conc. range: 19–156 µg/
kg, Ø conc.: 71 µg/kg, country: Denmark⁵⁵⁷,
*fungal hot spots in maize silage

incidence: 36/36, Ø conc. range: 168.8–
482.1 µg/kg, country: México⁵⁵⁹

incidence: 5/5, conc. range: ≤1,790 µg/kg,
Ø conc.: 432 µg/kg, country: Germany⁵⁷²

incidence: 14/40, conc. range: ≤676 µg/kg,
Ø conc.: 169 µg/kg, country:
Netherlands⁶¹³

incidence: 4/40, conc. range: ≤148 µg/kg,
Ø conc.: 118 µg/kg, country:
Netherlands⁶¹³

incidence: 51/60, conc. range: ≤943 µg/kg,
Ø conc.: 180 µg/kg, country:
Netherlands⁶¹³

α-ZEARALENOL

incidence: 1/5, conc.: 15 µg/kg, country:
Germany⁵⁷²

β-ZEARALENOL

incidence: 1/5, conc.: 116 µg/kg, country:
Germany⁵⁷²

Penicillium Toxins

CITRININ

incidence: 1/1*, conc.: 26.9 µg/kg dw,
country: France⁵⁶⁰, *top of mature corn
silage

incidence: 1/1*, conc.: 36.6 µg/kg dw,
country: France⁵⁶⁰, *bottom of mature
corn silage

MYCOPHENOLIC ACID

incidence: 38/135, conc. range:
20–23,000 µg/kg, Ø conc.: 690 µg/kg,
country: Germany³⁹³

incidence: 8/16*, Ø conc.: 660 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from the surface

incidence: 5/7*, Ø conc.: 9,311 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from molded spots

incidence: 50/120, conc. range:
20–1,300 µg/kg, country: USA⁵²¹

incidence: 1/10*, conc.:
52 µg/kg, country: Denmark⁵⁵⁷,
*unspoiled maize silage

incidence: 6/10*, conc. range:
10–1,646 µg/kg, Ø conc.: 507 µg/kg, country:
Denmark⁵⁵⁷, *fungal hot spots in maize
silage

ROQUEFORTINE A

incidence: 4/10*, conc. range: pr, country:
Denmark⁵⁵⁷, *unspoiled maize silage

incidence: 3/10*, conc. range: pr, country:
Denmark⁵⁵⁷, *fungal hot spots in maize
silage

ROQUEFORTINE C

incidence: 12/12* **, conc. range: 700–
36,000 µg/kg, Ø conc.: 17,058 µg/kg,
country: Germany⁷⁴, *molded, **whole-
crop maize silage

incidence: 1/12* **, conc.: 200 µg/kg,
country: Germany⁷⁴, *unmolded, **whole-
crop maize silage

incidence: 4/16*, Ø conc.: 96 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from the core

incidence: 8/16*, Ø conc.: 1,605 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from the surface

incidence: 7/7*, Ø conc.: 25,986 µg/kg,
country: Netherlands⁴⁵⁵, *corn silage
taken from molded spots

incidence: 72/120, conc. range:
10–5,710 µg/kg, country: USA⁵²¹

incidence: 1/10*, conc.: 189 µg/kg, country:
Denmark⁵⁵⁷, *unspoiled maize silage

incidence: 3/10*, conc. range:
51–33,662 µg/kg, Ø conc.: 11,826 µg/kg,
country: Denmark⁵⁵⁷, *fungal hot spots in
maize silage

incidence: 18/60, conc. range: 47.8–
28,150.3 µg/kg, Ø conc.: 5,470.7 µg/kg,
country: Germany⁶⁰³

Silage (sunflower) may contain the
following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 20/20, conc. range: 250–980 µg/
kg*, Ø conc.: 661 µg/kg*, country:
Argentina³⁰⁷, *begin of the storage period

incidence: 17/20, conc. range: 60–800 µg/
kg*, Ø conc.: 360 µg/kg*, country:
Argentina³⁰⁷, *after storage for 2 months

incidence: 4/20, conc. range: 800–1,600 µg/
kg*, Ø conc.: 1,070 µg/kg*, country:
Argentina³⁰⁷, *after storage for 4 months

ALTERNARIOL MONOMETHYL ETHER

incidence: 1/20, conc.: 600 µg/kg*,
country: Argentina³⁰⁷, *after storage for
2 months

incidence: 1/20, conc.: 800 µg/kg*,
country: Argentina³⁰⁷, *after storage for
4 months

TENUAZONIC ACID

incidence: 16/20, conc. range: 3,900–
31,600 µg/kg*, Ø conc.: 15,894 µg/kg*,
country: Argentina³⁰⁷, *begin of the
storage period

incidence: 13/20, conc. range: 3,600–
15,800 µg/kg*, Ø conc.: 8,000 µg/kg*,
country: Argentina³⁰⁷, *after storage for
2 months

incidence: 9/20, conc. range: 3,120–
6,240 µg/kg, Ø conc.: 4,500 µg/kg, country:
Argentina³⁰⁷, *after storage for 4 months

Silage (wheat or triticale) may
contain the following mycotoxins:

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/20, conc. range: 272–
1,165 µg/kg, Ø conc.: 718.5 µg/kg,
country: Netherlands⁶¹³

incidence: 1/10, conc.: 426 µg/kg, country:
Netherlands⁶¹³

Silk worm pupae may contain the
following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 1/1, conc.: <30 µg/kg (1 sa),
country: India³⁸⁰

Sorghum Feed sorghum may contain
the following mycotoxins:

Alternaria Toxins

TENUAZONIC ACID

incidence: 12/12, conc. range: ≤115 µg/kg,
country: Australia⁵⁹⁶

Aspergillus* Toxins*AFLATOXIN B₁**

incidence: 5/6, conc. range: >100–500 µg/kg (3 sa), >500–2000 µg/kg (2 sa), country: Cuba¹⁰⁶

incidence: 1/4, conc.: 30 µg/kg, country: Australia¹²¹

incidence: 11/45, conc. range: 1.4–42.6 µg/kg, Ø conc.: 10.6 µg/kg, country: Colombia¹²⁵

incidence: 4/7, Ø conc. range: 3–6 µg/kg, Ø conc.: 3.8 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 4/17*, conc. range: 1 µg/kg, country: USA¹³⁴, *grain bin sa

incidence: 1/1, conc.: 30 µg/kg, country: Australia¹⁸¹

incidence: 5/10, conc. range: 10–20 µg/kg, country: India¹⁸³

incidence: 12/30, conc. range: ≤25 µg/kg (7 sa), 26–50 µg/kg (3 sa), 51–100 µg/kg (1 sa), 145 µg/kg (1 sa), Ø conc.: 33.81 µg/kg, country: India²⁴⁷

incidence: 8/11, conc. range: 72.7–165.9 µg/kg, Ø conc.: 106.0 µg/kg, country: India²⁵³

incidence: 4/197*, conc. range: 6–45 µg/kg, Ø conc.: 17 µg/kg, country: USA³²⁷, *ncac

incidence: 6/533, conc. range: 3–19 µg/kg, country: USA³⁸⁴

incidence: 9/44*, conc. range: 0.18–30.3 µg/kg, country: India³⁸⁶, *ncac

incidence: 24/25* **, conc. range: 2.0–830.0 µg/kg, country: India³⁸⁶, *ncac, **rain-affected

AFLATOXIN B₂

incidence: 2/45, conc. range: 1.1–3.7 µg/kg, Ø conc.: 2.4 µg/kg, country: Colombia¹²⁵

incidence: 3/30, Ø conc.: 15.4 µg/kg, country: India²⁴⁷

incidence: 4/11, conc. range: 72.7–99.3 µg/kg, Ø conc.: 86.0 µg/kg, country: India²⁵³

incidence: 1/197*, conc.: 9 µg/kg, country: USA³²⁷, *ncac

AFLATOXINS (B₁ + B₂)

incidence: 5/5*, Ø conc. range: 1–4 µg/kg, Ø conc.: 3 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

AFLATOXIN B

incidence: 3/12, conc. range: ≤10 µg/kg (1 sa), >10 µg–≤100 / kg (2 sa), country: France⁴⁶

AFLATOXIN G₁

incidence: 3/533, conc. range: 3–19 µg/kg, country: USA³⁸⁴

AFLATOXIN

incidence: 4/4*, Ø conc. range: 2–5 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 81/100*, conc. range: 1–20 µg/kg (59 sa), 21–≤90 µg/kg (22 sa), country: USA⁵²³, *preharvest grain sorghum

incidence: 22/100*, conc. range: 1–20 µg/kg (18 sa), 21–≤90 µg/kg (4 sa), country: USA⁵²³, *preharvest grain sorghum

AFLATOXINS (TOTAL)

incidence: 4/786*, conc. range: ≤50 µg/kg, Ø conc.: 17 µg/kg, country: USA¹⁶⁴, *ncac

AFLATOXINS

incidence: 4/50, conc. range: 5–50 µg/kg (2 sa), 51–500 µg/kg (2 sa), country: Australia²¹

incidence: 2/6* **, conc. range: 6–20 µg/kg, Ø conc.: 13 µg/kg, country: Nigeria¹⁷¹, *ncac, **stage of development: hard dough

incidence: 4/6* **, conc. range: 10–80 µg/kg, Ø conc.: 37.5 µg/kg, country: Nigeria¹⁷¹, *ncac, **stage of development: ripe

incidence: 2/12, conc. range: 12–60 µg/kg, Ø conc.: 36 µg/kg, country: USA²⁸⁰

incidence: 2/2, conc. range: 87–1,873 µg/kg, Ø conc.: 980 µg/kg, country: USA²⁸⁰, sa imported

incidence: 7/114*, conc. range: 3–20 µg/kg, Ø conc.: 10 µg/kg, country: USA³²⁹, *ncac

incidence: 4/25*, conc. range: 4–9 µg/kg, Ø conc.: 6 µg/kg, country: USA³²⁹, *ncac

incidence: 6/29*, conc. range: 10–29 µg/kg (2 sa), 30–49 µg/kg (2 sa), >100–≤400 µg/kg (2 sa), country: India³⁴⁹, *poultry feed

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 4/10, conc. range: 300–20,000 µg/kg, country: India³³

OCHRATOXIN A

incidence: 9/29*, conc. range: 10–29 µg/kg (2 sa), 30–49 µg/kg (1 sa), 50–100 µg/kg (1 sa), 100–≤400 µg/kg (5 sa), country: India³⁴⁹, *poultry feed

PATULIN

incidence: 1/6* **, conc.: 150 µg/kg, country: Nigeria¹⁷¹, *ncac, **stage of development: ripe

Fusarium Toxins

DEOXYNIVALENOL

incidence: 6/7*, Ø conc. range: 35–258 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 5/5*, Ø conc. range: 6–103 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 4/4*, Ø conc. range: 7–227 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 12/12*, Ø conc. range: 21–1,540 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 5/17*, conc. range: 20–558 µg/kg, Ø conc.: 182.2 µg/kg, country: USA¹³⁴, *grain bin sa

incidence: 1/1*, conc.: 198 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

FUMONISIN B₁

incidence: 2/44*, conc. range: 150–500 µg/kg, Ø conc.: 325 µg/kg, country: India³⁸⁶, *ncac

incidence: 25/25* **, conc. range: 70–7,800 µg/kg, country: India³⁸⁶, *ncac, **rain-affected

incidence: 19/50*, conc. range: 50–368.78 µg/kg, country: Brazil⁴³⁵, *ncac

NIVALENOL

incidence: 1/1*, conc.: 27 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

T-2 TOXIN

incidence: 3/43*, conc. range: 1,670–14,960 µg/kg, Ø conc.: 9,987 µg/kg, country: India¹⁹⁹, *ncac

incidence: 1/24*, conc. range: 15,000 µg/kg, country: India¹⁹⁹, *ncac

ZEARALENONE

incidence: 7/7*, Ø conc. range: 140–1,643 µg/kg, Ø conc.: 530.1 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 5/5*, Ø conc. range: 112–339 µg/kg, Ø conc.: 197.2 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 4/4*, Ø conc. range: 26–95 µg/kg, Ø conc.: 49.5 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 12/12*, Ø conc. range: 80–3,099 µg/kg, Ø conc.: 579.3 µg/kg, country: USA¹³⁴, *hybrid or brand-hybrid

incidence: 17/17*, conc. range: 7–2,024 µg/kg, Ø conc.: 443 µg/kg, country: USA¹³⁴, *grain bin sa

incidence: 2/6* **, conc. range: 100–150 µg/kg, Ø conc.: 125 µg/kg, country: Nigeria¹⁷¹, *ncac, **stage of development: hard dough

incidence: 2/6***, conc. range: 100–200 µg/kg, Ø conc.: 150 µg/kg, country: Nigeria¹⁷¹, *ncac, **stage of development: ripe

incidence: 1/1*, conc.: 12,000 µg/kg, country: USA¹⁷³, *sa involved in bovine abortion

incidence: 2/10, conc. range: 20–40 µg/kg, Ø conc.: 30 µg/kg, country: India¹⁸³

incidence: 56/197*, conc. range: <400 µg/kg (3 sa), 400–900 µg/kg (18 sa), 1,000–5,000 µg/kg (33 sa), 6,900 µg/kg (2 sa), country: USA³²⁷, *ncac

incidence: 84/160, conc. range: 60–7,620 µg/kg, Ø conc.: 705 µg/kg, country: Japan⁴³⁷

incidence: 6/6*, conc. range: 760–4,500 µg/kg, country: Portugal⁴⁷⁵, *ncac

incidence: 41/100*, conc. range: 251–500 µg/kg (27 sa), 501–1,000 µg/kg (6 sa), 1,001–≤1,468 µg/kg (8 sa), country: USA⁵²³, *preharvest grain sorghum

incidence: 19/100*, conc. range: 251–500 µg/kg (15 sa), 501–1,000 µg/kg (4 sa), country: USA⁵²³, *preharvest grain sorghum

incidence: 1/1*, conc.: 136 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

Sow feed see Feed pig

Soybean Feed soybean may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 4/5, Ø conc.: 5 µg/kg, country: Egypt¹⁶

incidence: 5/34*, conc. range: <5–20 µg/kg, country: South Africa⁷⁹, *ncac

incidence: 1/20, conc.: 4 µg/kg, country: UK⁹⁴, sa imported?

incidence: 1/1*, conc.: 97 µg/kg, country: UK¹²², *ncac

incidence: 2/866, conc. range: 7–10 µg/kg, Ø conc.: 8.5 µg/kg, country: USA³⁸¹

AFLATOXIN B₂
incidence: 1/1*, conc.: 20 µg/kg, country: UK¹²², *ncac

AFLATOXINS (B₁ + B₂)
incidence: 5/35, conc. range: 5–13 µg/kg, country: Egypt⁴⁵⁷

AFLATOXIN G₁
incidence: 1/1*, conc.: 11 µg/kg, country: UK¹²², *ncac

incidence: 1/866, conc.: 4 µg/kg, country: USA³⁸¹

AFLATOXIN G₂
incidence: 1/1*, conc.: 3.5 µg/kg, country: UK¹²², *ncac

AFLATOXIN
incidence: 1*/1**, conc.: ≤30 µg/kg, country: India⁵¹⁵, *sa contained aflatoxin, **poultry feed

AFLATOXINS (B₁ + B₂ + G₁ + G₂)
incidence: 3/14, conc. range: <20 µg/kg (3 sa), country: South Africa⁴⁴

incidence: 30/35, conc. range: 9–35 µg/kg, country: Egypt⁴⁵⁷

AFLATOXINS (TOTAL)
incidence: 1/20, conc.: 6 µg/kg, country: UK⁹⁴, sa imported?

AFLATOXINS
incidence: 2/6*, conc. range: ≤27.3 µg/kg, country: Vietnam/France¹⁵⁰, sa from Vietnam, *ncac

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 2/119, conc. range: 50–350 µg/kg, Ø conc.: 200 µg/kg, country: Hungary⁶

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 78/119, conc. range: 60–720 µg/kg, Ø conc.: 252.7 µg/kg, country: Hungary⁶

incidence: 1/3*, conc.: 36 µg/kg, country: Papua, New Guinea/Japan⁷², sa most probably from Australia, *ncac

incidence: 8/24, conc. range: 50–490 µg/kg, Ø conc.: 161.3 µg/kg, country: USA⁸³

incidence: 1/7, conc.: 11 µg/kg, country: Netherlands¹⁰³

FUMONISIN B₁

incidence: 1/1, conc.: 8,700 µg/kg, country: Spain¹⁵⁵

NIVALENOL

incidence: 53/119, conc. range: 50–680 µg/kg, Ø conc.: 258.7 µg/kg, country: Hungary⁶

incidence: 1/3*, conc.: 50 µg/kg, country: Papua, New Guinea/Japan⁷², sa most probably from Australia, *ncac

DIACETOXYSCIRPENOL

incidence: 5/24, conc. range: 15–230 µg/kg, Ø conc.: 77 µg/kg, country: USA⁸³

T-2 TOXIN

incidence: 22/119, conc. range: 50–450 µg/kg, Ø conc.: 249.1 µg/kg, country: Hungary⁶

T-2 TOXIN EQUIVALENTS

incidence: 9/24, conc. range: 20–1,070 µg/kg*, Ø conc.: 203.7 µg/kg*, country: USA⁸³, *T-2 tetraol after base hydrolysis (primarily HT-2)

ZEARALENONE

incidence: 38/119, conc. range: 50–520 µg/kg, Ø conc.: 181.1 µg/kg, country: Hungary⁶

incidence: 15/24, conc. range: 80–1,720 µg/kg, Ø conc.: 602.5 µg/kg, country: USA⁸³

incidence: 2/17* **, conc. range: >200 µg/kg (2 sa), country: Uruguay/Italy⁹¹, sa from Uruguay, *ncac, **and by-products

incidence: 1/15*, conc. range: 160–500 µg/kg (1 sa), country: USA³⁷⁰, *included are 7 soybean and 8 soybean meal sa

Soybean cake see Cake (soybean)

Soybean groats may contain the following mycotoxins:

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 2/7,345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

Soybean hull see Hull (soybean)

Soybean meal see Meal (soybean)

Soybean oil see Oil (soybean)

Soybean, extracted may contain the following mycotoxins:

Fusarium* Toxins*ZEARALENONE**

incidence: 1/7, conc.: 11 µg/kg, country: Netherlands¹⁰³, sa imported?

Spring wheat see Wheat

Starter chicken feed see Feed (chicken starter)

Starter feed see Feed (starter)

Starter ration see Ration (starter)

Starter (broiler) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 13/24, conc. range: ≤ 322 $\mu\text{g}/\text{kg}$, country: Nigeria¹⁰⁹

AFLATOXINS (TOTAL)

incidence: 17/24*, conc. range: ≤ 3.26 $\mu\text{g}/\text{kg}$, country: Kuwait⁴²¹, *poultry feed

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 13/14*, conc. range: ≤ 19.1 $\mu\text{g}/\text{kg}$, country: Kuwait⁴²¹, *poultry feed

Fusarium Toxins

DEOXYNIVALENOL

incidence: 11/14*, conc. range: 220–1,200 $\mu\text{g}/\text{kg}$, country: Kuwait⁴²¹, *poultry feed

FUMONISIN

incidence: 14/14*, conc. range: 220–6,000 $\mu\text{g}/\text{kg}$, \emptyset conc.: 2,400 $\mu\text{g}/\text{kg}$, country: Kuwait⁴²¹, *poultry feed

ZEARALENONE

incidence: 13/14*, conc. range: ≤ 80.1 $\mu\text{g}/\text{kg}$, country: Kuwait⁴²¹, *poultry feed

Starter (pig) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN

incidence: 3/5, conc. range: ≤ 260 $\mu\text{g}/\text{kg}$, country: Nigeria¹⁰⁹

Straw may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁

incidence: 19/80*, conc. range: ≤ 17 $\mu\text{g}/\text{kg}$, \emptyset conc.: 10 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania, *straw/silage

STERIGMATOCYSTIN

incidence: 3/19*, conc. range: 230–323 $\mu\text{g}/\text{kg}$, \emptyset conc.: 264 $\mu\text{g}/\text{kg}$, country: UK¹²⁹, sa from Bangladesh, *rice straw?

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 3/6*, conc. range: ≤ 3 $\mu\text{g}/\text{kg}$, \emptyset conc.: 3 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania, *straw/silage

Fusarium Toxins

DEOXYNIVALENOL

incidence: 33/80*, conc. range: $\leq 1,860$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 415 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania, *straw/silage

FUMONISINS

incidence: 2/80*, conc. range: 707–733 $\mu\text{g}/\text{kg}$, \emptyset conc.: 720 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania, *straw/silage

T-2 TOXIN

incidence: 2/26*, conc. range: 134–266 $\mu\text{g}/\text{kg}$, \emptyset conc.: 200 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania, *straw/silage

ZEARALENONE

incidence: 35/79*, conc. range: $\leq 4,738$ $\mu\text{g}/\text{kg}$, \emptyset conc.: 780 $\mu\text{g}/\text{kg}$, country: Austria/Singapore/USA⁶⁰⁸, sa from Asia and Oceania, *straw/silage

Stachybotrys Toxins

SATRATOXIN G, H

incidence: 7/23, conc. range: nc, country: Hungary²⁰⁹

Straw, *Paspalum palidosum* may contain the following mycotoxins:

Fusarium Toxins

ZEARELENONE

incidence: 1/1, conc.: 422 µg/kg, country: UK¹²⁹, sa from India

Straw, rice may contain the following mycotoxins:

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/3, conc. range: 3–4 µg/kg, country: UK¹²⁹, sa from Bangladesh

Sugar-beet slices may contain the following mycotoxins:

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A

incidence: 1/7,345 overall*, conc.: nc, country: Hungary²⁰⁹, *different kinds of sa

Summer wheat see Wheat

Sunflower Feed sunflower may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 19/22*, conc. range: 50–570 µg/kg, Ø conc.: 170.1 µg/kg, country: UK¹⁸⁷, sa from Argentina, EC, and India?, *ncac

incidence: 2/2*, conc. range: 357–1,840 µg/kg, Ø conc.: 1,098.5 µg/kg, country: Italy³¹⁷, *ncac

incidence: 9/50*, conc. range: 24.9–170.9 µg/kg**, country: Brazil⁵⁵⁴, *for food and feed, **during different phases of plant development

incidence: 38/50*, conc. range: 35–792 µg/kg**, country: Argentina⁵⁸⁹, *ncac

ALTERNARIOL MONOMETHYL ETHER

incidence: 16/22*, conc. range: 45–270 µg/kg, Ø conc.: 101.5 µg/kg, country: UK¹⁸⁷, sa from Argentina, EC, and India?, *ncac

incidence: 1/2*, conc.: 129 µg/kg, country: Italy³¹⁷, *ncac

incidence: 5/50*, conc. range: 14.1–108.6 µg/kg**, country: Brazil⁵⁵⁴, *for food and feed, **during different phases of plant development

incidence: ?/50*, conc. range: 90–630 µg/kg**, country: Argentina⁵⁸⁹, *ncac

TENUAZONIC ACID

incidence: 22/22*, conc. range: 510–5600 µg/kg, Ø conc.: 1851 µg/kg, country: UK¹⁸⁷, sa from Argentina, EC, and India, *ncac

Aspergillus ToxinsAFLATOXIN B₁

incidence: 3/10, conc. range: tr, country: UK³⁶, sa imported?

incidence: 3/20, conc. range: 1–4 µg/kg (1 sa), 5–≤15 µg/kg (2 sa), country: UK⁹⁴, sa imported?!

incidence: 1/89*, conc.: 8 µg/kg, country: USA⁴⁴⁵, *ncac

AFLATOXIN

incidence: 1*/1**, conc.: ≤30 µg/kg, country: India⁵¹⁵, *sa contained aflatoxin, **poultry feed

AFLATOXINS (TOTAL)

incidence: 3/20, conc. range: 1–4 µg/kg (1 sa), 5–≤17 µg/kg (2 sa), country: UK⁹⁴, sa imported?!

AFLATOXINS

incidence: 5/10*, conc. range: 30–49 µg/kg, country: India³⁴⁹, *poultry feed

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 4/22, conc. range: 100–260 µg/kg, Ø conc.: 160 µg/kg, country: Hungary⁶

incidence: 1/10*, conc. range: 30–49 µg/kg, country: India³⁴⁹, *poultry feed

Fusarium* Toxins*DEOXYNIVALENOL**

incidence: 1/22, conc.: 150 µg/kg, country: Hungary⁶

DIACETOXYSCIRPENOL

incidence: 1/7,345 overall*, conc.: nc, country: Hungary²⁰⁹, *different kinds of sa

T-2 TOXIN

incidence: 3/22, conc. range: 230–250 µg/kg, Ø conc.: 236.7 µg/kg, country: Hungary⁶

incidence: 1/7,345, overall*, conc., nc, country: Hungary²⁰⁹, *different kinds of sa

Sunflower cake see Cake (sunflower)

Sunflower flour see Flour (sunflower)

Sunflower seed meal see Meal (sunflower seed)

Sunflower seed screenings see Screenings (sunflower)

Sunflower seeds, ensiled see Silage (sunflower)

Sunflower seeds, extracted may contain the following mycotoxins:

Aspergillus* and *Penicillium* Toxins*OCHRATOXIN A**

incidence: 3/3, conc. range: 9–37 µg/kg, Ø conc.: 27 µg/kg, country: Netherlands¹⁰³

Sweet feed see Feed, sweet

Swine feed see Feed (pig)

Tall fescue grass may contain the following mycotoxins:

Claviceps* Toxins*ERGOPEPTIDE ALKALOIDS**

incidence: 9/11*, conc. range: 100–300 µg**/kg dry weight, country: USA²⁰⁰, *leaf blades, **ergovaline

incidence: 9/11*, conc. range: 300–2,800 µg**/kg dry weight, Ø conc.: 1,167 µg/kg, country: USA²⁰⁰, *leaf sheaths, **ergovaline

ERGOT ALKALOIDS

incidence: 9/11*, conc. range: 400–1,500 µg**/kg, Ø conc.: 956 µg/kg, country: USA²⁰⁰, *leaf blades, **ergonovine

incidence: 9/11*, conc. range: 700–13,800 µg**/kg, Ø conc.: 4133 µg/kg, country: USA²⁰⁰, *leaf sheaths, **ergonovine

incidence: 3/3*, conc. range: 3,729.3–9,440.8 µg/kg dry weight, Ø conc.: 6,469.2 µg/kg, country: USA/Czech Republic⁴⁰⁰, sa from USA, *seed

incidence: 4/4*, conc. range: 907.9–1405.9 µg/kg dry weight, Ø conc.: 1,188.4 µg/kg, country: USA/Czech Republic⁴⁰⁰, sa from USA, *culm

incidence: 4/4*, conc. range: 237.5–706.3 µg/kg dry weight, Ø conc.: 495.0 µg/kg, country: USA/Czech Republic⁴⁰⁰, sa from USA, *plant

ERGOVALINE

incidence: 9/11, conc. range: 20–4,620 µg/kg, Ø conc.: 2,100 µg/kg, country: Spain³⁹⁶

incidence: 8/8*, conc. range: 166–340 µg/kg**, Ø conc.: 231.5 µg/kg, country: USA⁴⁰¹, *sa taken in spring (June–August)

incidence: 8/8*, conc. range: 314–839 µg/kg**, Ø conc.: 554.4 µg/kg, country: USA⁴⁰¹, *sa taken in fall (September–November)

Tapioca Feed tapioca may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/1, conc.: 270 µg/kg, country: India²⁴⁷

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A
incidence: 3/6, conc. range: 2–4 µg/kg, Ø conc.: 3 µg/kg, country: Netherlands¹⁰³, sa imported?!

Fusarium Toxins

ZEARALENONE
incidence: 6/6, conc. range: 17–86 µg/kg, Ø conc.: 32 µg/kg, country: Netherlands¹⁰³, sa imported?!

Testa (biri) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/1, conc.: 22 µg/kg, country: UK¹²⁹, sa from India

AFLATOXIN B₂
incidence: 1/1, conc.: 4 µg/kg, country: UK¹²⁹, sa from India

Testa (mung) may contain the following mycotoxins:

Aspergillus Toxins

AFLATOXIN B₁
incidence: 1/1, conc.: 4 µg/kg, country: UK¹²⁹, sa from India

AFLATOXIN G₁
incidence: 1/1, conc.: 3 µg/kg, country: UK¹²⁹, sa from India

Til oil cake see Oil cake (til)

Triticale Feed triticale may contain the following mycotoxins:

Aspergillus and **Penicillium** Toxins

OCHRATOXIN A
incidence: 1/32, conc.: 120 µg/kg, country: Hungary⁶

Fusarium Toxins

DEOXYNIVALENOL
incidence: 26/32, conc. range: 50–580 µg/kg, Ø conc.: 256.5 µg/kg, country: Hungary⁶

incidence: 1/2*, conc.: pr, country: South Africa⁴⁴, *ncac

incidence: 3/3, conc. range: 1,100–11,200 µg/kg, Ø conc.: 7,100 µg/kg, country: Australia²⁵⁶

incidence: ?/10*, conc. range: 1,300–16,400 µg/kg, Ø conc.: 7,990 µg/kg, country: Poland/Netherlands²⁹⁰, sa probably from Poland, *ncac

incidence: ?/49, conc. range: ≤1,051 µg/kg, country: Switzerland⁴⁵⁰

incidence: 5/5* **, conc. range: 168–427 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **winter triticale

incidence: 4/7* **, conc. range: tr–370 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **winter triticale

FUMONISIN B₁

incidence: 2/3, conc. range: 200–1000 µg/kg, country: South Africa⁴⁴

MONILIFORMIN

incidence: 3/3* **, conc. range: 2,400–15,700 µg/kg, Ø conc.: 6,100 µg/kg, country: Austria/Poland²²², sa from Poland, *ncac, ***Fusarium*-damaged kernels

incidence: 1/3* **, conc.: 250 µg/kg, country: Austria/Poland²²², sa from Poland, *ncac, **healthy looking kernels

NIVALENOL

incidence: 1/32, conc.: 100 µg/kg, country: Hungary⁶

T-2 TOXIN

incidence: 1/32, conc.: 160 µg/kg, country: Hungary⁶

TRICHOTHECENES

incidence: 1/2*, conc.: pr, country: South Africa⁴⁴, *ncac

ZEARALENONE

incidence: 21/32, conc. range: 50–580 µg/kg, Ø conc.: 216.2 µg/kg, country: Hungary⁶

incidence: 1/2*, conc.: pr, country: South Africa⁴⁴, *ncac

incidence: ?/37, conc. range: ≤315 µg/kg, country: Switzerland⁴⁵⁰

incidence: 2/7* **, conc. range: tr, country: Lithuania⁵²⁰, *for food and feed, **winter triticale

Trout feed see Feed (trout)

Unhusked barley see Barley

Vicia faba see Bean

Wheat Feed wheat may contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL

incidence: 27?/33, conc. range: ≤1,050 µg/kg, Ø conc.: 152.2 µg/kg*, country: Australia⁵⁹⁶, *of pos sa only?

ALTERNARIOL MONOMETHYL ETHER
incidence: 5/68* **, conc. range: ~10 µg/kg, country: Australia¹⁸⁸, *ncac, **heated wheat sa

incidence: 3/17, conc. range: 4–8 µg/kg, country: Germany²⁹⁴

incidence: 24?/33, conc. range: ≤46 µg/kg, Ø conc.: 14.4 µg/kg*, country: Australia⁵⁹⁶, *of pos sa only?

TENUAZONIC ACID

incidence: 20/68* **, conc. range: ≤70 µg/kg, Ø conc.: 28 µg/kg, country: Australia¹⁸⁸, *ncac, **heated wheat sa

incidence: 42/67* **, conc. range: ≤163 µg/kg, country: Australia¹⁸⁸, sa from USA, *ncac, **different kinds of wheat

incidence: 11/12* **, conc. range: ≤80 µg/kg, country: Australia¹⁸⁸, sa from Canada, *ncac, **different kinds of wheat

incidence: 33?/33, conc. range: ≤220 µg/kg, Ø conc.: 96 µg/kg*, country: Australia⁵⁹⁶, *of pos sa only?

Aspergillus Toxins

AFLATOXIN B₁

incidence: 2/50* **, conc. range: ≤100 µg/kg (1 sa), 101–250 µg/kg (1 sa), country: India²⁸, *ncac, **insect free

incidence: 19/50*, conc. range: 101–250 µg/kg (8 sa), 251–500 µg/kg (4 sa), 501–1,000 µg/kg (5 sa), ≤1,248 µg/kg (2 sa), country: India²⁸, *ncac, **insect damaged

incidence: 1/11*, conc.: pr, country: UK⁹³, *ncac

incidence: 7/13, conc. range: 10–700 µg/kg, Ø conc.: 201.4 µg/kg, country: Australia¹²¹

incidence: 5/5, conc. range: 20–700 µg/kg, Ø conc.: 182 µg/kg, country: Australia¹⁸¹

incidence: 16/244, conc. range: ≤25 µg/kg (14 sa), ≤79 µg/kg (2 sa), Ø conc.: 17.36 µg/kg, country: India²⁴⁷

incidence: 4/4, conc. range: 59.4–112.6 µg/kg, Ø conc.: 92.7 µg/kg, country: India²⁵³

incidence: 12/97*, conc. range: 3–40 µg/kg, Ø conc.: 12 µg/kg, country: Australia²⁷⁰, *moldy wheat sa

incidence: 5/5*, conc. range: 3–18 µg/kg, Ø conc.: 9 µg/kg, country: Australia²⁷⁰, *moldy wheat sa

incidence: 2/15*, conc. range: 3–4 µg/kg, Ø conc.: 3.5 µg/kg, country: Australia²⁷⁰, *free-flowing wheat sa

incidence: 10/13*, conc. range: 3–500 µg/kg, Ø conc.: 64 µg/kg, country: Australia²⁷⁰, *moldy wheat sa

incidence: 2/531, conc. range: 7 µg/kg, country: USA³⁸⁴

incidence: 1/41* **, conc.: tr, country: Saudi Arabia⁴⁶², *ncac, **ungraded sa

AFLATOXIN B₂
incidence: 2/13, conc. range: 100–500 µg/kg, Ø conc.: 300 µg/kg, country: Australia¹²¹

incidence: 4/244, Ø conc.: 4.9 µg/kg, country: India²⁴⁷

AFLATOXIN B
incidence: 15/32, conc. range: ≤10 µg/kg (7 sa), >10–≤100 µg/kg (64 sa), >100 µg/kg (2 sa)*, country: France⁴⁶, *180 and 225 µg/kg AFB₁

AFLATOXIN G₁
incidence: 2/531, conc. range: 2 µg/kg, country: USA³⁸⁴

AFLATOXIN

incidence: 29/123* **, conc. range: 2–20 µg/kg*** (28 sa), >20 µg/kg*** (1 sa), country: Uruguay/Italy⁹¹, sa from Uruguay, *ncac, **and by-products, ***AFB₁, AFB₂, AFG₁ and AFG₂

incidence: 14/14, conc. range: <30 µg/kg (4 sa), >30 µg/kg (6 sa), >200 µg/kg (2 sa), >1,750 µg/kg (2 sa), country: India³⁸⁰

incidence: 1*/1**, conc.: ≤ 30 µg/kg, country: India⁵¹⁵, *sa contained aflatoxin, **poultry feed

AFLATOXINS (B₁ + B₂ + G₁ + G₂)

incidence: 1/1,291, conc.: 3 µg/kg, country: Australia¹³⁷

STERIGMATOCYSTIN

incidence: 1/1, conc.: ~300 µg/kg, country: Canada⁹²

incidence: 7/11*, conc. range: pr–400 µg/kg, country: UK⁹³, *ncac

incidence: 1/50, conc.: 18 µg/kg, country: UK⁹⁴, sa imported?

incidence: 1/24, conc.: pr, country: Czechoslovakia⁶⁰⁴

Aspergillus and *Penicillium* Toxins

CYCLOPIAZONIC ACID

incidence: 1/1, conc. range: 20,000 µg/kg, country: India³³

OCHRATOXIN A

incidence: 2/14*, conc. range: 0.6–0.7 µg/kg dry weight, Ø conc.: 0.7 µg/kg, country: Germany⁵, *ncac

incidence: 7/29*, conc. range: 0.6–0.8 µg/kg dry weight, Ø conc.: 0.6 µg/kg, country: Germany⁵, *ncac

incidence: 9/367, conc. range: 90–320 µg/kg, Ø conc.: 207.8 µg/kg, country: Hungary⁶

incidence: 8/64*, conc. range: 0.1–137.3 µg/kg, Ø conc.: 17.9 µg/kg, country: Germany¹³, *ncac

incidence: 2/34*, conc. range: 188–430 µg/kg, Ø conc.: 309 µg/kg, country: Italy¹⁴, *ncac

incidence: 12/78, conc. range: ≤9.2 µg/kg, country: UK¹⁵

incidence: 1/3, conc.: 10 µg/kg, country: Egypt¹⁶

incidence: 2/35, conc. range: <100 µg/kg (2 sa), country: Austria²⁹

incidence: 15/101*, conc. range: <25–2700 µg/kg, country: UK³⁰, *ncac

incidence: 11/64, conc. range: ≤9.2 µg/kg, Ø conc.: 1.65 µg/kg, country: UK⁴³

incidence: 1/14, conc.: 0.5 µg/kg, country: UK⁴³

incidence: 1/25, conc.: 37 µg/kg, country: Romania/Germany⁵⁴, sa from Romania

incidence: 15/125, conc. range: 5–100 µg/kg, country: Poland⁸⁴

incidence: 9/11*, conc. range: 14–3,500 µg/kg, country: UK⁹³, *ncac

incidence: 10/50, conc. range: 1–4 µg/kg (5 sa), 5–≤17 µg/kg (5 sa), country: UK⁹⁴, sa imported?

incidence: 18/25, conc. range: 1–5 µg/kg (9 sa), 5–20 µg/kg (6 sa), >20 µg/kg (3 sa), country: Czechoslovakia¹¹⁰

incidence: 4/4*, conc. range: 20–100 µg/kg, Ø conc.: 72.5 µg/kg, country: Canada¹⁷², *moldy red spring

incidence: 1/39, conc.: 5 µg/kg, country: Germany¹⁸⁶

incidence: 22/117, conc. range: 0.3–0.9 µg/kg (5 sa), 1.0–2.4 µg/kg (5 sa), 2.5–4.9 µg/kg (6 sa), 5.0–9.9 µg/kg (1 sa), 10.0–19.9 µg/kg (3 sa), 50–99.9 µg/kg (1 sa), 231 µg/kg (1 sa), country: UK²⁰³

incidence: 22/7345 overall*, conc. range: nc, country: Hungary²⁰⁹, *different kinds of sa

incidence: 2*/94 overall**, conc. range: 900–1,100 µg/kg, Ø conc.:

1,000 µg/kg, country: Canada²⁴⁰, *consumed by wild birds and poultry, **different kinds of sa

incidence: 1/22, conc.: 0.015 µg/kg, country: Slovakia/Poland²⁴¹, sa from Poland, *for food and feed

incidence: 6/48, conc. range: ≤2.940 µg/kg, country: Slovakia/Poland²⁴¹, sa from Slovakia, *for food and feed

incidence: 1/1*, conc.: 13.7 µg/kg, country: UK²⁸², *ncac

incidence: 18/37* **, conc. range: 0.6–1,024 µg/kg, Ø conc.: 267 µg/kg, country: Poland³³⁹, *ncac, **conventionally grown

incidence: 8/34* **, conc. range: 0.8–1.6 µg/kg, Ø conc.: 1.17 µg/kg, country: Poland³³⁹, *ncac, **ecologically grown

incidence: 3/39* **, conc. range: 0.48–1.2 µg/kg, Ø conc.: 0.83 µg/kg, country: Poland³⁴¹, *ncac, **ecologically grown

incidence: 1/99, conc.: 17 µg/kg, country: Canada³⁴⁶

incidence: 2/33, conc. range: 60–100 µg/kg, Ø conc.: 80 µg/kg, country: Poland³⁵⁹

incidence: 74/92*, conc. range: 0.02–160.00 µg/kg, country: Croatia³⁷¹, sa from Croatia and Slovenia, *ncac

incidence: 4/4*, conc. range: 0.06–4.07 µg/kg, Ø conc.: 1.19 µg/kg, country: Italy⁴⁴⁷, *farro sa

incidence: 1/41* **, conc.: 1.8 µg/kg, country: Saudi Arabia⁴⁶², *ncac, **ungraded sa

incidence: 8/30, conc. range: 0.3–62.8 µg/kg, Ø conc.: 12.2 µg/kg, country: Hungary⁴⁶⁴

incidence: 3/41, conc. range: <100 µg/kg (3 sa), country: Austria⁵⁰⁹

incidence: 15/95* **, conc. range: LOD–0.9 µg/kg (13 sa), 1.0–≤3.9 µg/kg (2 sa), country: Italy⁵³², *ncac, **durum wheat

incidence: 1/11, conc.: 0.26 µg/kg,
country: Czech Republic/France⁵⁵³, sa
from the Czech Republic

incidence: 5/20* **, conc. range: tr (1 sa),
0.045–1.097 µg/kg (4 sa), country:
Belgium⁵⁵⁶, *ncac, **conventional

incidence: 11/20* **, conc. range: tr (1 sa),
0.037–0.0303 µg/kg (10 sa), country:
Belgium⁵⁵⁶, *ncac, **organic

incidence: 5/12, conc. range: ≤7 µg/kg,
Ø conc.: 4 µg/kg, country: Austria/
Singapore/USA⁶⁰⁸, sa from Europe and
Mediterranean Region

VIOMELLEIN

incidence: 7/11*, conc. range: 300–
1,800 µg/kg, Ø conc.: 1,100 µg/kg,
country: UK⁹³, *ncac

VIOXANTHIN

incidence: 7/11*, conc. range: 200–
1,200 µg/kg, Ø conc.: 507.1 µg/kg,
country: UK⁹³, *ncac

XANTHOMEGNIN

incidence: 7/11*, conc. range: 120–
1,100 µg/kg, Ø conc.: 445.7 µg/kg,
country: UK⁹³, *ncac

Claviceps Toxins

ERGOT ALKALOIDS

incidence: 10/26* **, conc. range:
150–450 µg/kg (9 sa), 450–750 µg/kg
(1 sa), country: Uruguay/Italy⁹¹, sa from
Uruguay, *ncac, **and by-products

Fusarium Toxins

BEAUVERICIN

incidence: 6/7* **, conc. range: tr,
country: Finland²⁰⁵, *ncac, **3 winter and
4 summer wheat sa

incidence: 7/7* **, conc. range: tr,
country: Finland²⁰⁵, *ncac, **7 summer
wheat sa

incidence: 13/13* **, conc. range: 640–
3,500 µg/kg, country: Italy/Finland²³⁴, sa
from Finland, *ncac, **sa from head blight
affected wheat fields

incidence: 1/4*, conc.: 4,400 µg/kg,
country: Italy⁴⁴⁷, *farro sa

DEOXYNIVALENOL

incidence: 47/47*, conc. range: 40–415 µg/
kg dry weight, Ø conc.: 111 µg/kg,
country: Germany⁵, *ncac

incidence: 58/58*, conc. range:
67–1,020 µg/kg dry weight, Ø conc.:
280 µg/kg, country: Germany⁵, *ncac

incidence: 287/367, conc. range:
70–1,560 µg/kg, Ø conc.: 298.9 µg/kg,
country: Hungary⁶

incidence: 7/7, conc. range: 68–700 µg/kg,
Ø conc.: 170 µg/kg, country: Finland⁹

incidence: 3/3*, conc. range: 34–137 µg/
kg, Ø conc.: 72 µg/kg, country: Finland⁹,
*sa imported

incidence: 1/5*, conc.: pr, country: South
Africa⁴⁴, *ncac

incidence: 4/4*, conc. range: 120–1,400 µg/
kg, Ø conc.: 772.5 µg/kg, country: Canada⁴⁹,
*including red spring and red winter

incidence: 1/23 overall* **, conc.: 500 µg/
kg, country: Hungary⁵⁰, *ncac, **different
kinds of sa

incidence: 25/25, conc.: ≤ 5,600 µg/kg,
Ø conc.: 1,500 µg/kg, country: Romania/
Germany⁵⁴, sa from Romania

incidence: 81/84, conc. range:
4–20,538 µg/kg, Ø conc.: 1,691.6 µg/kg,
country: Germany⁶³

incidence: 54/78, conc. range: 3–1,187 µg/
kg, Ø conc.: 152.1 µg/kg, country:
Germany⁶³

incidence: 77/80, conc. range: 8–8,969 µg/
kg, Ø conc.: 595.0 µg/kg, country:
Germany⁶³

incidence: 77/80, conc. range: 4–4,627 µg/kg, Ø conc.: 359.1 µg/kg, country: Germany⁶³

incidence: 74/78, conc. range: 18–5,412 µg/kg, Ø conc.: 334.8 µg/kg, country: Germany⁶³

incidence: 43/45, conc. range: 19–6,165 µg/kg, Ø conc.: 391.2 µg/kg, country: Germany⁶³

incidence: 9/13*, conc. range: 30–1,280 µg/kg, Ø conc.: 522.2 µg/kg, country: Japan⁶⁷, *ncac

incidence: 5/80, conc. range: 10–1,300 µg/kg, country: Germany⁶⁸

incidence: 3/15*, conc. range: 560–590 µg/kg, Ø conc.: 576.7 µg/kg, country: Brazil⁸¹, *cultivar: IAC 24

incidence: 1/15*, conc.: 470 µg/kg, country: Brazil⁸¹, *cultivar: BH 1146

incidence: 65/116* **, conc. range: 80–500 µg/kg (56 sa), 500–1,000 µg/kg (5 sa), >1,000 µg/kg (4 sa), country: Uruguay/Italy⁹¹, sa from Uruguay, *ncac, **and by-products

incidence: 2/7, conc. range: 110–270 µg/kg, Ø conc.: 190 µg/kg, country: Netherlands¹⁰³

incidence: 5/9* **, conc. range: 6–173 µg/kg, Ø conc.: 23 µg/kg, country: Korea¹⁰⁸, *for food and feed, **husked wheat

incidence: 3/3*, conc. range: 330–850 µg/kg, Ø conc.: 513.3 µg/kg, country: Canada¹²⁰, sa probably from Canada, *ncac

incidence: 21?/81*, conc. range: ≤9,330 µg/kg, country: USA¹²⁶, *ncac

incidence: 1/1, conc.: 2,200 µg/kg, country: Canada¹³⁰

incidence: 32/53*, conc. range: 8–3,193 µg/kg, Ø conc.: 349.5 µg/kg, country: Norway¹³², *probably feed

incidence: 24/1291, conc. range: tr–1,700 µg/kg, country: Australia¹³⁷

incidence: 4/60, conc. range: tr–70 µg/kg, country: Australia¹³⁷

incidence: 6/80, conc. range: 20–780 µg/kg, country: Australia¹³⁷

incidence: 1/1, Ø conc.: 23,000 µg/kg, country: Australia¹⁴⁶

incidence: 9/9*, conc. range: 76–1,654 µg/kg, Ø conc.: 587.8 µg/kg, country: Netherlands¹⁵², sa from Germany, *ncac

incidence: 7/9*, conc. range: 76–840 µg/kg, Ø conc.: 387.3 µg/kg, country: Netherlands¹⁵², sa from France, *ncac

incidence: 2/2*, conc. range: 138–352 µg/kg, Ø conc.: 245 µg/kg, country: Netherlands¹⁵², sa from Canada, *ncac

incidence: 1/1*, conc.: 113 µg/kg, country: Netherlands¹⁵², *ncac

incidence: 82/94*, conc. range: 10–>10,000 µg/kg, country: Germany¹⁹², *ncac

incidence: 8/14, conc. range: 110–1,180 µg/kg, Ø conc.: 400 µg/kg, country: Sweden¹⁹⁷

incidence: 23/29, conc. range: 60–360 µg/kg, Ø conc.: 190 µg/kg, country: Sweden¹⁹⁷

incidence: 8/8*, conc. range: 90–450 µg/kg, Ø conc.: 218.8 µg/kg, country: Canada¹⁹⁸, *soft white winter wheat

incidence: 157/157* **, conc. range: ≤100 µg/kg (12 sa), >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–≤7,240 µg/kg (15 sa), Ø conc.: 1,700 µg/kg, country: USA²⁰¹, *ncac, **hard red winter wheat

incidence: 115/117, conc. range: 20–49 µg/kg (18 sa), 50–99 µg/kg (61 sa), 100–249 µg/kg (33 sa), 250–499 µg/kg (2 sa), 600 µg/kg (1 sa), country: UK²⁰³

incidence: 4/12*, conc. range: 1,500–10,800 µg/kg, country: New Zealand²¹¹, *sa of rejected wheat

incidence: 3/3*, conc. range: 3,750–14,360 µg/kg, Ø conc.: 8,700 µg/kg, country: South Africa²¹², *scabby, undergrade wheat

incidence: 7/7, conc. range: 1,000–20,000 µg/kg, Ø conc.: 8,857 µg/kg, country: Argentina²¹³

incidence: 13/42*, conc. range: 7–309 µg/kg, Ø conc.: 94.7 µg/kg, country: Japan/Poland²¹⁴, sa from Poland, *ncac

incidence: 1/2*, conc.: 86 µg/kg, country: Japan/Poland²¹⁴, sa from France, *ncac

incidence: 3/4*, conc. range: 47–914 µg/kg, Ø conc.: 360.3 µg/kg, country: Japan/Poland²¹⁴, sa from Austria, *ncac

incidence: 2/2*, conc. range: 56–1,285 µg/kg, Ø conc.: 670.5 µg/kg, country: Japan/Poland²¹⁴, sa from Hungary, *ncac

incidence: 1/3*, conc.: 291 µg/kg, country: Japan/Poland²¹⁴, sa from UK, *ncac

incidence: 1/1*, conc.: 9 µg/kg, country: Japan/Poland²¹⁴, sa from Greece, *ncac

incidence: 1/2*, conc.: 211 µg/kg, country: Japan/Poland²¹⁴, sa from Bulgaria, *ncac

incidence: 1/1*, conc.: 15,000 µg/kg, country: Canada²¹⁹, *Fusarium-contaminated

incidence: 501/737*, conc. range: 30–4300 µg/kg, country: Norway²²⁴, *ncac, **of different categories (for more information please see the article)

incidence: 54/57*, conc. range: 200–9,000 µg/kg, Ø conc.: 3,600 µg/kg, country: USA²²⁶, *ncac

incidence: 2/3*, conc. range: 66–740 µg/kg, Ø conc.: 403 µg/kg, country: Japan²³⁰, *ncac

incidence: 1/4*, conc.: 91 µg/kg, country: Japan²³⁰, sa from USA, *ncac

incidence: 15/18*, conc. range: tr–4,700 µg/kg, Ø conc.: 1,000 µg/kg, country: Japan²³¹, *ncac

incidence: 15/28*, conc. range: 320–8,530 µg/kg, country: Canada²³³, *white winter wheat

incidence: 2/2*, conc. range: 540–1,100 µg/kg, Ø conc.: 820 µg/kg, country: Norway/Germany²³⁵, sa from Norway, harvested in October/November, *ncac

incidence: ?/61* **, conc. range: 10–15,300 µg/kg, country: Poland²³⁶, *ncac, **sa with head blight (scab) symptoms

incidence: ?/68* **, conc. range: 30–24,290 µg/kg, country: Poland²³⁶, *ncac, **sa with head blight (scab) symptoms

incidence: 4/342 overall*, conc. range: 140–36,700 µg/kg, Ø conc.: 18,600 µg/kg, country: USA²³⁷, *different kinds of sa

incidence: 2*/94 overall**, conc. range: 20–200 µg/kg, Ø conc.: 110 µg/kg, country: Australia²⁴⁰, *consumed by poultry and swine, **different kinds of sa

incidence: 7/22*, conc. range: ≤970 µg/kg, country: Slovakia/Poland²⁴¹, sa from Poland, *for food and feed

incidence: 13/48*, conc. range: ≤2,770 µg/kg, country: Slovakia/Poland²⁴¹, sa from the Slovak Republic, *for food and feed

incidence: 1/1, conc.: 6,900 µg/kg, country: Canada²⁴⁹

incidence: 821/821* **, conc. range: 210–30,400 µg/kg, country: Italy/Poland²⁵², sa from Poland, *ncac, **wheat heads with apparent symptoms of fusariosis

incidence: 7/12, conc. range: ≤6,700 µg/kg, Ø conc.: 1,800 µg/kg, country: Australia²⁵⁶

incidence: 39/78, conc. range: ≤102 µg/kg, Ø conc.: 21 µg/kg, country: Poland²⁶⁴

incidence: 82/151*, conc. range:
5–1,620 µg/kg, Ø conc.: 162 µg/kg,
country: Japan²⁶⁵, *ncac

incidence: 8/97, conc. range: <100 µg/kg
(6 sa), 100–1,000 µg/kg (1 sa), >1,000 µg/
kg (1 sa), country: UK²⁶⁸

incidence: ?/33*, conc. range: 2,400–
35,000 µg/kg, country: Poland/
Netherlands²⁹⁰, sa probably from Poland,
*ncac

incidence: 226/283, conc. range:
≤5,175 µg/kg, Ø conc.: 100 µg/kg, country:
UK³¹⁰

incidence: 11/13*, conc. range: 15,900–
39,600 µg/kg, Ø conc.: 28,190 µg/kg,
country: Poland³¹⁵, **Fusarium*-damaged
kernels

incidence: 10/13*, conc. range: 400–
3,600 µg/kg, Ø conc.: 1,700 µg/kg,
country: Poland³¹⁵, *healthy looking
kernels

incidence: 79/99, conc. range: ≤9,160 µg/
kg, Ø conc.: 1,500 µg/kg, country:
Canada³⁴⁶

incidence: 104/150* **, conc. range:
≤11,660 µg/kg, Ø conc.: 1,540 µg/kg,
country: Germany³⁵⁵, *ncac,
**conventionally grown

incidence: 25/46* **, conc. range:
≤4,220 µg/kg, Ø conc.: 760 µg/kg, country:
Germany³⁵⁵, *ncac, **organically grown

incidence: 44/53, conc. range: 4–3464 µg/
kg, Ø conc.: 302.9 µg/kg, country:
Germany³⁶²

incidence: 47/54, conc. range:
4–15,869 µg/kg, Ø conc.: 735.1 µg/kg,
country: Germany³⁶²

incidence: 53/57, conc. range: 4–2,636 µg/kg,
Ø conc.: 179.8 µg/kg, country: Germany³⁶²

incidence: 46/52, conc. range:
14–1,275 µg/kg, Ø conc.: 166.8 µg/kg,
country: Germany³⁶²

incidence: 46/60, conc. range:
16–1,554 µg/kg, Ø conc.: 219.0 µg/kg,
country: Germany³⁶²

incidence: 201/207*, conc. range: 400–
40,000 µg/kg, Ø conc.: 2,400 µg/kg,
country: USA³⁷⁰, *winter wheat

incidence: 120/206*, conc. range: 900–
7,600 µg/kg, Ø conc.: 900 µg/kg, country:
USA³⁷⁰, *spring wheat

incidence: 24/25*, conc. range:
≥10– < 100 µg/kg (17 sa), ≥100– < 300 µg/
kg (6 sa), ≤ 371 µg/kg (1 sa), Ø conc.:
104 µg/kg, country: Poland³⁹², *for food
and feed

incidence: 53/84*, conc. range: ≤202 µg/
kg, Ø conc.: 64 µg/kg, country: Lithuania/
Norway³⁹⁹, sa from Lithuania, *for food
and feed

incidence: 28/46*, conc. range: tr–580 µg/
kg, Ø conc.: 30 µg/kg, country: France⁴⁰⁴,
sa from different countries, *ncac

incidence: 62/69*, conc. range: tr–650 µg/
kg, Ø conc.: 80 µg/kg, country: France⁴⁰⁴,
sa from different countries, *ncac

incidence: 87/99, conc. range: <50–
4,300 µg/kg, Ø conc.: 1,152 µg/kg,
country: Hungary⁴¹¹

incidence: 23/23*, conc. range: 203–
4,130 µg/kg, Ø conc.: 1,500 µg/kg,
country: Austria/Italy⁴³⁹, sa from Austria,
Germany and Slovakia, *ncac

incidence: 5/5, conc. range: 540–5,080 µg/
kg, Ø conc.: 1,916 µg/kg, country:
Austria⁴⁴¹, sa from Austria, Germany, and
Slovakia

incidence: ?/36, conc. range: ≤1,507 µg/kg,
country: Switzerland⁴⁵⁰

incidence: ?/13, conc. range:
≤1,040 µg/kg, country: Switzerland⁴⁵⁰, sa
from USA

incidence: ?/13, conc. range: ≤616 µg/kg,
country: Switzerland⁴⁵⁰, sa from Canada

incidence: 1397/1624*, conc. range:
>10–≤20,333 µg/kg, Ø conc.: 230 µg/kg**,
country: UK⁴⁵⁶, *ncac, **for all sa

incidence: 15/19* **, conc. range: 300–
70,000 µg/kg, country: Argentina/Italy⁴⁶⁵,
sa from Argentina, *ncac, **wheat
affected by head blight

incidence: 6/27*, conc. range: 20–60 µg/
kg, Ø conc.: 35 µg/kg, country: Japan⁴⁶⁹,
*ncac

incidence: 1/1*, conc.: 395 µg/kg, country:
Germany⁴⁷⁹, *control wheat

incidence: 1/1*, conc.: 16,643 µg/kg, country:
Germany⁴⁷⁹, *Fusarium-infected wheat

incidence: 124/124, conc. range: 0–100 µg/
kg (32 sa), 101–500 µg/kg (55 sa), 501–
1,000 µg/kg (20 sa), ≤4,200 µg/kg (17 sa),
country: Austria⁴⁹¹

incidence: 2/10*, conc. range: 18–95 µg/
kg, Ø conc.: 56.5 µg/kg, country: Korea⁵¹⁰,
*ncac

incidence: 46/47* **, conc. range:
tr–242 µg/kg, country: Lithuania⁵²⁰, *for
food and feed, **winter wheat

incidence: 15/15* **, conc. range:
tr–642 µg/kg, country: Lithuania⁵²⁰, *for
food and feed, **spring wheat

incidence: 83/88*, conc. range:
tr–1,121 µg/kg, country: Lithuania⁵²⁰, *for
food and feed

incidence: 25/26*, conc. range: 2–1,800 µg/
kg, Ø conc.: 278.3 µg/kg, country: Croatia/
Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 14/20* **, conc. range:
11–997 µg/kg, Ø conc.: 237.4 µg/kg,
country: Poland/Austria⁵⁵⁰, sa from
Poland, *ncac, **conventionally grown

incidence: 5/12* **, conc. range: 7–380 µg/
kg, Ø conc.: 95 µg/kg, country: Poland/
Austria⁵⁵⁰, sa from Poland, *ncac,
**organically grown

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), ≤2,842 µg/kg (2 sa), country:
Belgium⁵⁵⁶, *ncac, **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), ≤1,184 µg/kg
(3 sa), country: Belgium⁵⁵⁶, *ncac,
**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), country: Belgium⁵⁵⁶, *ncac,
**conventional

incidence: 25/26* **, conc. range: tr (6 sa),
10–226 µg/kg (19 sa), country: Belgium⁵⁵⁶,
*ncac, **organic

incidence: 12/15* **, conc. range:
100–10,300 µg/kg, Ø conc.: 4,216.6 µg/kg,
country: USA⁵⁶⁹, *ncac, **hard red
spring

incidence: 18/28* **, conc. range:
200–10,000 µg/kg, Ø conc.: 2,188.9 µg/kg,
country: USA⁵⁶⁹, *ncac, **hard red
spring

incidence: 39/41, conc. range: ≤1,810 µg/
kg, Ø conc.: 309 µg/kg, country:
Germany⁵⁷²

incidence: 1/1* **, conc.: 287 µg/kg,
country: Austria⁵⁷⁶, *ncac, **durum wheat

incidence: 5/17, conc. range: 240–660 µg/
kg, Ø conc.: 120.0 µg/kg, country:
Poland⁵⁹⁷

incidence: 17/17*, conc. range:
29–11,700 µg/kg, Ø conc.: 1,624.7 µg/kg,
country: Japan⁶⁰⁰, *suspected to be pos for
acetylated DON and NIV

incidence: 15/23*, conc. range: ≤142 µg/
kg, Ø conc.: 29 µg/kg, country: Lithuania/
Sweden⁶⁰⁷, sa from Lithuania, *ncac

incidence: 157/254, conc. range:
 ≤5,510 µg/kg, Ø conc.: 705 µg/kg, country:
 Austria/Singapore/USA⁶⁰⁸, sa from Europe
 and Mediterranean Region

DEOXYNIVALENOL-3-β-D-GLUCOSIDE
 incidence: 23/23*, conc. range:
 76–1,070 µg/kg, Ø conc.: 393 µg/kg,
 country: Austria/Italy⁴³⁹, sa from Austria,
 Germany, and Slovakia, *ncac

incidence: 5/5, conc. range: 50–200 µg/kg,
 Ø conc.: 112 µg/kg, country: Austria⁴⁴¹, sa
 from Austria, Germany, and Slovakia

incidence: 10/15* **, conc. range: 300–
 27,400 µg/kg, Ø conc.: 5,730 µg/kg,
 country: USA⁵⁶⁹, *ncac, **hard red spring

incidence: 6/28* **, conc. range: 100–
 5,400 µg/kg, Ø conc.: 1,083.3 µg/kg,
 country: USA⁵⁶⁹, *ncac, **hard red spring

3-ACETYLDEOXYNIVALENOL

incidence: 4/7, conc. range: 35–106 µg/kg,
 Ø conc.: 57 µg/kg, country: Finland⁹

incidence: 1/3*, conc.: 15 µg/kg, country:
 Finland⁹, *sa imported

incidence: 12/25, conc.: ≤250 µg/kg,
 Ø conc.: 93 µg/kg, country: Romania/
 Germany⁵⁴, sa from Romania

incidence: 50/84, conc. range: 3–18 µg/kg,
 Ø conc.: 6.7 µg/kg, country: Germany⁶³

incidence: 24/78, conc. range: 3–12 µg/kg,
 Ø conc.: 7.0 µg/kg, country: Germany⁶³

incidence: 20/80, conc. range: 2–25 µg/kg,
 Ø conc.: 11.9 µg/kg, country: Germany⁶³

incidence: 17/80, conc. range: 13–120 µg/
 kg, Ø conc.: 49.5 µg/kg, country:
 Germany⁶³

incidence: 13/78, conc. range: 10–44 µg/
 kg, Ø conc.: 20.2 µg/kg, country:
 Germany⁶³

incidence: 28/45, conc. range:
 10–1,902 µg/kg, Ø conc.: 209.2 µg/kg,
 country: Germany⁶³

incidence: 657/821* **, conc. range:
 50–29,540 µg/kg, country: Italy/
 Poland²⁵², sa from Poland, *ncac,
 **wheat heads with apparent symptoms
 of fusariosis

incidence: 1/97, conc.: 100–1,000 µg/kg,
 country: UK²⁶⁸

incidence: 9/13*, conc. range: 300–
 3,000 µg/kg, Ø conc.: 1,740 µg/kg,
 country: Poland³¹⁵, **Fusarium*-damaged
 kernels

incidence: 19/53, conc. range:
 2–20 µg/kg, Ø conc.: 7.2 µg/kg, country:
 Germany³⁶²

incidence: 24/54, conc. range: 2–63 µg/kg,
 Ø conc.: 10.7 µg/kg, country: Germany³⁶²

incidence: 7/57, conc. range: 27–128 µg/
 kg, Ø conc.: 51.1 µg/kg, country:
 Germany³⁶²

incidence: 5/52, conc. range: 7–39 µg/kg,
 Ø conc.: 17.6 µg/kg, country: Germany³⁶²

incidence: 12/60, conc. range: 15–1886 µg/
 kg, Ø conc.: 948.4 µg/kg, country:
 Germany³⁶²

incidence: 7/23*, conc. range: pr, country:
 Austria/Italy⁴³⁹, sa from Austria, Germany
 and Slovakia, *ncac

incidence: 3/5, conc. range:
 20–50 µg/kg, Ø conc.: 30 µg/kg, country:
 Austria⁴⁴¹, sa from Austria, Germany, and
 Slovakia

incidence: 20/1624*, conc. range:
 >10–≤44 µg/kg, Ø conc.: <10 µg/kg**,
 country: UK⁴⁵⁶, *ncac, **for all sa

incidence: 1/1*, conc.: 20 µg/kg, country:
 Germany⁴⁷⁹, *control wheat

incidence: 1/1*, conc.: 41 µg/kg, country:
 Germany⁴⁷⁹, **Fusarium*-infected wheat

incidence: 3/20* **, conc. range: 18–37 µg/
 kg, Ø conc.: 24.7 µg/kg, country: Poland/
 Austria⁵⁵⁰, sa from Poland, *ncac,
 **conventionally grown

incidence: 1/12* **, conc.: 181 µg/kg,
country: Poland/Austria⁵⁵⁰, sa from
Poland, *ncac, **organically grown

incidence: 1/41, conc.: 24 µg/kg, country:
Germany⁵⁷²

incidence: 10/17*, conc. range: tr–281 µg/
kg, country: Japan⁶⁰⁰, *suspected to be
pos. for acetylated DON and NIV

15-ACETYLDEOXYNIVALENOL

incidence: 8/25, conc. range: ≤380 µg/kg,
Ø conc.: 150 µg/kg, country: Romania/
Germany⁵⁴, sa from Romania

incidence: 13/84, conc. range: 1–15 µg/kg,
Ø conc.: 5.0 µg/kg, country: Germany⁶³

incidence: 10/80, conc. range: 5–150 µg/
kg, Ø conc.: 41.9 µg/kg, country:
Germany⁶³

incidence: 2/78, conc. range: 6–116 µg/kg,
Ø conc.: 61.0 µg/kg, country: Germany⁶³

incidence: 3/45, conc. range: 7–181 µg/kg,
Ø conc.: 71.0 µg/kg, country: Germany⁶³

incidence: 1/13*, conc.: 130 µg/kg,
country: Japan⁶⁷, *ncac

incidence: 2/283, conc. range: ≤22 µg/kg,
Ø conc.: 18 µg/kg, country: UK³¹⁰

incidence: 6/53, conc. range: 3–54 µg/kg,
Ø conc.: 17.1 µg/kg, country: Germany³⁶²

incidence: 1/57, conc.: 14 µg/kg, country:
Germany³⁶²

incidence: 15/23*, conc. range: pr,
country: Austria/Italy⁴³⁹, sa from Austria,
Germany and Slovakia, *ncac

incidence: 1/5, conc.: 20 µg/kg, country:
Austria⁴⁴¹, sa from Austria, Germany, and
Slovakia

incidence: 44/1,624*, conc. range:
>10–≤217 µg/kg, Ø conc.: <10 µg/kg**,
country: UK⁴⁵⁶, *ncac, **for all sa

incidence: 1/1*, conc.: 20 µg/kg, country:
Germany⁴⁷⁹, *control wheat

incidence: 1/1*, conc.: 101 µg/kg, country:
Germany⁴⁷⁹, **Fusarium*-infected wheat

incidence: 3/41, conc. range: ≤11 µg/kg,
country: Germany⁵⁷²

incidence: 2/17*, conc. range: tr–10 µg/kg,
country: Japan⁶⁰⁰, *suspected to be pos for
acetylated DON and NIV

ACETYLDEOXYNIVALENOL

incidence: 12/25*, conc. range: <10 µg/kg
(2 sa), ≤38 µg/kg (10 sa), Ø conc.: 16 µg/
kg, country: Poland³⁹², *for food and feed

ENNIATIN A

incidence: 4/7* **, conc. range: 3–490 µg/
kg, Ø conc.: 128.5 µg/kg, country:
Finland²⁰⁵, *ncac, **3 winter and 4
summer wheat sa (only summer wheat
contaminated)

incidence: 7/7* **, conc. range: tr–5 µg/kg,
country: Finland²⁰⁵, *ncac, **summer
wheat sa

ENNIATIN A₁

incidence: 5/7* **, conc. range: tr–940 µg/
kg, country: Finland²⁰⁵, *ncac, **3 winter
and 4 summer wheat sa (all summer and
1 winter wheat contaminated)

incidence: 7/7* **, conc. range: tr–15 µg/
kg, country: Finland²⁰⁵, *ncac, **7 summer
wheat sa

incidence: 10/13* **, conc. range:
tr–6,900 µg/kg, country: Italy/Finland²³⁴,
sa from Finland, *ncac, **sa from head
blight affected wheat fields

incidence: 1/4*, conc.: nq, country: Italy⁴⁴⁷,
*farro sa

ENNIATIN B

incidence: 7/7* **, conc. range:
tr–18,300 µg/kg, Ø conc.: 5,372.5 µg/kg,

country: Finland²⁰⁵, *ncac, **3 winter and 4 summer wheat sa

incidence: 7/7* **, conc. range: 31–160 µg/kg, Ø conc.: 94.29 µg/kg, country: Finland²⁰⁵, *ncac, **7 summer wheat sa

incidence: 12/13* **, conc. range: tr–4,800 µg/kg, country: Italy/Finland²³⁴, sa from Finland, *ncac, **sa from head blight affected wheat fields

incidence: 2/4*, conc. range: nq–30 µg/kg, country: Italy⁴⁴⁷, *farro sa

ENNIATIN B₁

incidence: 7/7* **, conc. range: tr–5,100 µg/kg, Ø conc.: 1,449.3 µg/kg, country: Finland²⁰⁵, *ncac, **3 winter and 4 summer wheat sa

incidence: 7/7* **, conc. range: tr–67 µg/kg, country: Finland²⁰⁵, *ncac, **summer wheat sa

incidence: 8/13* **, conc. range: tr–1,900 µg/kg, country: Italy/Finland²³⁴, sa from Finland, *ncac, **sa from head blight affected wheat fields

incidence: 1/4*, conc.: nq, country: Italy⁴⁴⁷, *farro sa

FUMONISIN B₁

incidence: 8/17, conc. range: 200–8,800 µg/kg, Ø conc.: 2,900 µg/kg, country: Spain¹⁵⁵

incidence: 3/4*, conc. range: 20.05–70.00 µg/kg, Ø conc.: 36.86 µg/kg, country: Italy⁴⁴⁷, *farro sa

FUMONISIN B₂

incidence: 1/17, conc.: 200 µg/kg, country: Spain¹⁵⁵

incidence: 3/4*, conc. range: nq, country: Italy⁴⁴⁷, *farro sa

FUMONISINS

incidence: 1/1, conc.: 580 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

FUSARIC ACID

incidence: 7/8*, conc. range: 1,400–30,400 µg/kg, Ø conc.: 11,610 µg/kg, country: Canada⁶⁶, *swine feedstuff

incidence: 1/1, conc.: 17,000 µg/kg, country: Canada¹³⁰

HT-2 TOXIN

incidence: 2/4*, conc. range: <50 µg/kg, country: Canada⁴⁹, *including red spring and red winter

incidence: 1/23 overall* **, conc.: 200 µg/kg, country: Hungary⁵⁰, *ncac, **different kinds of sa

incidence: 6/84, conc. range: 2–20 µg/kg, Ø conc.: 8.8 µg/kg, country: Germany⁶³

incidence: 6/78, conc. range: 12–22 µg/kg, Ø conc.: 17.2 µg/kg, country: Germany⁶³

incidence: 1/80, conc.: 17.0 µg/kg, country: Germany⁶³

incidence: 7/78, conc. range: 8–150 µg/kg, Ø conc.: 50.8 µg/kg, country: Germany⁶³

incidence: 1/80, conc.: 100–200 µg/kg, country: Germany⁶⁸

incidence: 3/97, conc. range: <100 µg/kg, country: UK²⁶⁸

incidence: 82/283, conc. range: ≤193 µg/kg, Ø conc.: 25 µg/kg, country: UK³¹⁰

incidence: 1/99, conc.: 1,000 µg/kg, country: Canada³⁴⁶

incidence: 2/53, conc. range: 37–59 µg/kg, Ø conc.: 48.0 µg/kg, country: Germany³⁶²

incidence: 6/54, conc. range: 5–38 µg/kg, Ø conc.: 13.5 µg/kg, country: Germany³⁶²

incidence: 5/52, conc. range: 5–51 µg/kg, Ø conc.: 24.8 µg/kg, country: Germany³⁶²

incidence: 3/60, conc. range: 6–19 µg/kg, Ø conc.: 13.7 µg/kg, country: Germany³⁶²

incidence: 20/84*, conc. range: ≤110 µg/kg, Ø conc.: 34 µg/kg, country: Lithuania/

Norway³⁹⁹, sa from Lithuania, *for food and feed

incidence: 503/1,624*, conc. range: >10–≤193 µg/kg, Ø conc.: <10 µg/kg**, country: UK⁴⁵⁶, *ncac, **for all sa

incidence: 1/1*, conc.: 11 µg/kg, country: Germany⁴⁷⁹, **Fusarium*-infected wheat

incidence: 6/20* **, conc. range: 4–66 µg/kg, Ø conc.: 25.7 µg/kg, country: Poland/Austria⁵⁵⁰, sa from Poland, *ncac, **conventionally grown

incidence: 1/12* **, conc.: 8 µg/kg, country: Poland/Austria⁵⁵⁰, sa from Poland, *ncac, **organically grown

incidence: 22/41, conc. range: ≤61 µg/kg, Ø conc.: 9 µg/kg, country: Germany⁵⁷²

MONILIFORMIN

incidence: 8/13*, conc. range: tr–87 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 33/35*, conc. range: tr–420 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 35/35*, conc. range: tr–950 µg/kg, country: Norway²⁰⁴, *ncac

incidence: 4/7* **, conc. range: tr–810 µg/kg, country: Finland²⁰⁵, *ncac, **3 winter and 4 summer wheat sa (3 summer and 1 winter wheat contaminated)

incidence: 6/7* **, conc. range: 30–96 µg/kg, Ø conc.: 71.5 µg/kg, country: Finland²⁰⁵, *ncac, **summer wheat sa

incidence: 5/5* **, conc. range: 7,200–25,200 µg/kg, Ø conc.: 15,900 µg/kg, country: Austria/Poland²²², sa from Poland, *ncac, ***Fusarium*-damaged kernels

incidence: 5/5* **, conc. range: 250–700 µg/kg, Ø conc.: 420 µg/kg, country: Austria/Poland²²², sa from Poland, *ncac, **healthy looking kernels

incidence: ?/61* **, conc. range: 10–720 µg/kg, country: Poland²³⁶, *ncac, **sa with head blight (scab) symptoms

incidence: ?/68* **, conc. range: 10–1,720 µg/kg, country: Poland²³⁶, *ncac, **sa with head blight (scab) symptoms

incidence: 48/78, conc. range: ≤495 µg/kg, Ø conc.: 182 µg/kg, country: Poland²⁶⁴

incidence: 3/4* **, conc. range: 58–810 µg/kg, Ø conc.: 373 µg/kg, country: Finland³¹², *ncac, **summer wheat

incidence: 1/3* **, conc.: <20 µg/kg, country: Finland³¹², *ncac, **winter wheat

incidence: 7/25*, conc. range: ≥10– <100 µg/kg (5 sa), ≤198 µg/kg (2 sa), Ø conc.: 63 µg/kg, country: Poland³⁹², *for food and feed

incidence: 13/23*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, Germany and Slovakia, *ncac

NEOSOLANIOL

incidence: 27/35*, conc. range: 144.6–853.7 µg/kg, Ø conc.: 476.2 µg/kg, country: Iran²³⁸, *ncac

NIVALENOL

incidence: 33/367, conc. range: 50–590 µg/kg, Ø conc.: 177.3 µg/kg, country: Hungary⁶

incidence: 5/5*, conc. range: pr, country: South Africa⁴⁴, *ncac

incidence: 21/84, conc. range: 3–32 µg/kg, Ø conc.: 9.0 µg/kg, country: Germany⁶³

incidence: 33/78, conc. range: 3–58 µg/kg, Ø conc.: 19.5 µg/kg, country: Germany⁶³

incidence: 31/80, conc. range: 4–218 µg/kg, Ø conc.: 42.8 µg/kg, country: Germany⁶³

incidence: 47/80, conc. range: 1–188 µg/kg, Ø conc.: 22.1 µg/kg, country: Germany⁶³

incidence: 50/78, conc. range: 3–219 µg/kg, Ø conc.: 33.3 µg/kg, country: Germany⁶³

incidence: 15/45, conc. range: 5–47 µg/kg, Ø conc.: 15.7 µg/kg, country: Germany⁶³

incidence: 10/42, conc. range: ≥50–140 µg/kg, Ø conc.: 85 µg/kg, country: Sweden⁶⁵

incidence: 1/42, conc.: 60 µg/kg, country: Sweden⁶⁵

incidence: 1/96, conc.: 75 µg/kg, country: Sweden⁶⁵

incidence: 2/13*, conc. range: 40–1,220 µg/kg, Ø conc.: 630 µg/kg, country: Japan⁶⁷, *ncac

incidence: 2/15*, conc. range: 200–400 µg/kg, Ø conc.: 300 µg/kg, country: Brazil⁸¹, *cultivar: IAC 24

incidence: 1/15*, conc.: 160 µg/kg, country: Brazil⁸¹, *cultivar: BH 1146

incidence: 9/9* **, conc. range: 82–3,169 µg/kg, Ø conc.: 535 µg/kg, country: Korea¹⁰⁸, *for food and feed, **husked wheat

incidence: 53/53*, conc. range: 15–887 µg/kg, Ø conc.: 59.2 µg/kg, country: Norway¹³², *probably feed

incidence: 4/12*, conc. range: 20–770 µg/kg, country: New Zealand²¹¹, *sa of rejected wheat

incidence: 3/3*, conc. range: 320–1,850 µg/kg, Ø conc.: 936.7 µg/kg, country: South Africa²¹², *scabby, undergrade wheat

incidence: 37/42*, conc. range: 3–350 µg/kg, Ø conc.: 47.9 µg/kg, country: Japan/Poland²¹⁴, sa from Poland, *ncac

incidence: 2/2*, conc. range: 24–60 µg/kg, Ø conc.: 42 µg/kg, country: Japan/Poland²¹⁴, sa from France, *ncac

incidence: 3/4*, conc. range: 10–44 µg/kg, Ø conc.: 24.7 µg/kg, country: Japan/Poland²¹⁴, sa from Austria, *ncac

incidence: 1/2*, conc.: 4 µg/kg, country: Japan/Poland²¹⁴, sa from Hungary, *ncac

incidence: 1/3*, conc.: 12 µg/kg, country: Japan/Poland²¹⁴, sa from UK, *ncac

incidence: 1/1*, conc.: 2 µg/kg, country: Japan/Poland²¹⁴, sa from Greece, *ncac

incidence: 1/2*, conc.: 32 µg/kg, country: Japan/Poland²¹⁴, sa from Bulgaria, *ncac

incidence: 3/737* **, conc. range: 50–54 µg/kg, Ø conc.: 54 µg/kg, country: Norway²²⁴, *ncac, **of different categories (for more information please see the article)

incidence: 2/3*, conc. range: 260–1,630 µg/kg, Ø conc.: 945 µg/kg, country: Japan²³⁰, *ncac

incidence: 15?/18*, conc. range: tr–7,800 µg/kg, Ø conc.: 1,500 µg/kg, country: Japan²³¹, *ncac

incidence: ?/61* **, conc. range: 10–14,200 µg/kg, country: Poland²³⁶, *ncac, **sa with head blight (scab) symptoms

incidence: ?/68* **, conc. range: 20–320 µg/kg, country: Poland²³⁶, *ncac, **sa with head blight (scab) symptoms

incidence: 34/35*, conc. range: 49.1–1,119.1 µg/kg, Ø conc.: 577.6 µg/kg, country: Iran²³⁸, *ncac

incidence: 23/78, conc. range: ≤99 µg/kg, Ø conc.: 34 µg/kg, country: Poland²⁶⁴

incidence: 100/151*, conc. range: 5–4,390 µg/kg, Ø conc.: 136 µg/kg, country: Japan²⁶⁵, *ncac

incidence: 21/97, conc. range: <100 µg/kg (14 sa), 100–1,000 µg/kg (5 sa), >1,000 µg/kg (2 sa), country: UK²⁶⁸

incidence: 226/283, conc. range: ≤428 µg/kg, Ø conc.: 42 µg/kg, country: UK³¹⁰

incidence: 26/53, conc. range: 4–80 µg/kg, Ø conc.: 19.1 µg/kg, country: Germany³⁶²

incidence: 10/54, conc. range: 5–145 µg/kg, Ø conc.: 59.8 µg/kg, country: Germany³⁶²

incidence: 24/57, conc. range: 2–74 µg/kg, Ø conc.: 13.2 µg/kg, country: Germany³⁶²

incidence: 35/52, conc. range: 3–341 µg/kg, Ø conc.: 68.1 µg/kg, country: Germany³⁶²

incidence: 9/60, conc. range: 10–42 µg/kg, Ø conc.: 21.3 µg/kg, country: Germany³⁶²

incidence: 19/25*, conc. range: <10 µg/kg (1 sa), ≥10–<100 µg/kg (14 sa), ≥100–<300 µg/kg (1 sa), ≤453 µg/kg (3 sa), Ø conc.: 97 µg/kg, country: Poland³⁹², *for food and feed

incidence: 7/23*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, Germany and Slovakia, *ncac

incidence: 1,088/1,624*, conc. range: >10–≤430 µg/kg, Ø conc.: 27 µg/kg**, country: UK⁴⁵⁶, *ncac, **for all sa

incidence: 2/19* **, conc. range: 50–100 µg/kg, Ø conc.: 75 µg/kg, country: Argentina/Italy⁴⁶⁵, sa from Argentina, *ncac, **wheat affected by head blight

incidence: 14/27*, conc. range: 20–120 µg/kg, Ø conc.: 52.9 µg/kg, country: Japan⁴⁶⁹, *ncac

incidence: 1/1*, conc.: 71 µg/kg, country: Germany⁴⁷⁹, *control wheat

incidence: 1/1*, conc.: 41 µg/kg, country: Germany⁴⁷⁹, *Fusarium-infected wheat

incidence: 9/10*, conc. range: 28–632 µg/kg, Ø conc.: 149.9 µg/kg, country: Korea⁵¹⁰, *ncac

incidence: 15/26*, conc. range: 6–96 µg/kg, Ø conc.: 19.7 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

incidence: 12/20* **, conc. range: (7)***–80 µg/kg, country: Poland/Austria⁵⁵⁰, sa from Poland, *ncac, ***conventionally grown, ***result in parentheses are below the limit of quantitation

incidence: 2/12* **, conc. range: 13–28 µg/kg, Ø conc.: 20.5 µg/kg, country: Poland/Austria⁵⁵⁰, sa from Poland, *ncac, **organically grown

incidence: 8/41, conc. range: ≤68 µg/kg, Ø conc.: 33 µg/kg, country: Germany⁵⁷²

incidence: 17/17*, conc. range: 10–4390 µg/kg, Ø conc.: 669.4 µg/kg, country: Japan⁶⁰⁰, *suspected to be pos for acetylated DON and NIV

incidence: 3/23*, conc. range: ≤41 µg/kg, Ø conc.: 22 µg/kg, country: Lithuania/Sweden⁶⁰⁷, sa from Lithuania, *ncac

4-ACETYLNIVALENOL

incidence: 3/13*, conc. range: 20 µg/kg, Ø conc.: 20 µg/kg, country: Japan⁶⁷, *ncac

incidence: 1/17*, conc.: tr, country: Japan⁶⁰⁰, *suspected to be pos for acetylated DON and NIV

15-MONOACETOXYSCIRPENOL

incidence: 2/97, conc. range: <100 µg/kg, country: UK²⁶⁸

incidence: 1/41, conc.: 6 µg/kg, country: Germany⁵⁷²

DIACETOXYSCIRPENOL

incidence: 3/4*, conc. range: <50–80 µg/kg, country: Canada⁴⁹, *including red spring and red winter

incidence: 5/59, conc. range: 300–2,000 µg/kg, country: Germany⁶⁸

incidence: 1/15*, conc.: 600 µg/kg, country: Brazil⁸¹, *cultivar: IAC 24

incidence: 1/7,345 overall, conc.: nc, country: Hungary²⁰⁹

incidence: 1/97, conc.: <100 µg/kg, country: UK²⁶⁸

incidence: 1/26, conc.: 50 µg/kg, country: Germany⁴⁷⁰

SCIRPENTRIOL

incidence: 1/1*, conc.: 20 µg/kg, country: Germany⁴⁷⁹, *Fusarium-infected wheat

incidence: 2/41, conc. range: ≤22 µg/kg, Ø conc.: 17 µg/kg, country: Germany⁵⁷²

T-2 TOXIN

incidence: 24/367, conc. range: 80–370 µg/kg, Ø conc.: 193.8 µg/kg, country: Hungary⁶

incidence: 3/4*, conc. range: 150–200 µg/kg, Ø conc.: 180 µg/kg, country: Canada⁴⁹, *including red spring and red winter

incidence: 2/23 overall* **, conc. range: 200–1,900 µg/kg, Ø conc.: 1,050 µg/kg, country: Hungary⁵⁰, *ncac, **different kinds of sa

incidence: 6/25, conc.: ≤63 µg/kg, Ø conc.: 26 µg/kg, country: Romania/Germany⁵⁴, sa from Romania

incidence: 22/84, conc. range: 3–249 µg/kg, Ø conc.: 82.5 µg/kg, country: Germany⁶³

incidence: 5/78, conc. range: 10–12 µg/kg, Ø conc.: 11.0 µg/kg, country: Germany⁶³

incidence: 9/80, conc. range: 10–136 µg/kg, Ø conc.: 51.7 µg/kg, country: Germany⁶³

incidence: 3/80, conc. range: 4–16 µg/kg, Ø conc.: 10.0 µg/kg, country: Germany⁶³

incidence: 18/45, conc. range: 3–94 µg/kg, Ø conc.: 20.1 µg/kg, country: Germany⁶³

incidence: 1/59, conc.: 300–13,000? µg/kg, country: Germany⁶⁸

incidence: 4/81, conc. range: 200–500 µg/kg, country: Germany⁶⁸

incidence: 1/15*, conc.: 400 µg/kg, country: Brazil⁸¹, *cultivar: IAC 24

incidence: 1/15*, conc.: 800 µg/kg, country: Brazil⁸¹, *cultivar: BH 1146

incidence: 29/7,345 overall, conc. range: nc, country: Hungary²⁰⁹

incidence: 6/283, conc. range: ≤21 µg/kg, Ø conc.: 16 µg/kg, country: UK³¹⁰

incidence: 2/53, conc. range: 21–23 µg/kg, Ø conc.: 22.0 µg/kg, country: Germany³⁶²

incidence: 5/54, conc. range: 16–235 µg/kg, Ø conc.: 72.8 µg/kg, country: Germany³⁶²

incidence: 2/57, conc. range: 4–16 µg/kg, Ø conc.: 10.0 µg/kg, country: Germany³⁶²

incidence: 7/60, conc. range: 4–34 µg/kg, Ø conc.: 19.3 µg/kg, country: Germany³⁶²

incidence: 8/84*, conc. range: ≤58 µg/kg, Ø conc.: 33 µg/kg, country: Lithuania/Norway³⁹⁹, sa from Lithuania, *for food and feed

incidence: 260/1624*, conc. range: >10–≤52 µg/kg, Ø conc.: <10 µg/kg**, country: UK⁴⁵⁶, *ncac, **for all sa

incidence: 1/19, conc.: 100 µg/kg, country: Germany⁴⁷⁰

incidence: 2/41, conc. range: ≤6 µg/kg, country: Germany⁵⁷²

incidence: 18/83, conc. range: ≤829 µg/kg, Ø conc.: 187 µg/kg, country: Austria/Singapore/USA⁶⁰⁸, sa from Europe and Mediterranean Region

T-2 TETRAOL

incidence: 2/41, conc. range: ≤62 µg/kg, Ø conc.: 38 µg/kg, country: Germany⁵⁷²

T-2 TRIOL

incidence: 11/80, conc. range: 100–700 µg/kg, country: Germany⁶⁸

incidence: 2/283, conc. range: ≤15 µg/kg, Ø conc.: 14 µg/kg, country: UK³¹⁰

incidence: 7/1624*, conc. range: >10–≤45 µg/kg, Ø conc.: <10 µg/kg**, country: UK⁴⁵⁶, *ncac, **for all sa

TRICHOTHECENES

incidence: 5/5*, conc. range: pr, country: South Africa⁴⁴, *ncac

ZEARALENONE

incidence: 215/367, conc. range: 50–890 µg/kg, Ø conc.: 210.3 µg/kg, country: Hungary⁶

incidence: 2/7, conc. range: 35–43 µg/kg,
Ø conc.: 39 µg/kg, country: Finland⁹

incidence: 1/23 overall* **, conc.: 200 µg/
kg, country: Hungary⁵⁰, *ncac, **different
kinds of sa

incidence: 25/25, conc.: ≤170 µg/kg,
Ø conc.: 23 µg/kg, country: Romania/
Germany⁵⁴, sa from Romania

incidence: 67/84, conc. range: 1–8,036 µg/
kg, Ø conc.: 178.0 µg/kg, country:
Germany⁶³

incidence: 11/78, conc. range: 1–6 µg/
kg, Ø conc.: 3.2 µg/kg, country:
Germany⁶³

incidence: 9/80, conc. range: 1–15 µg/kg,
Ø conc.: 5.1 µg/kg, country: Germany⁶³

incidence: 10/80, conc. range: 1–109 µg/kg,
Ø conc.: 20.3 µg/kg, country: Germany⁶³

incidence: 15/78, conc. range: 1–20 µg/kg,
Ø conc.: 4.3 µg/kg, country: Germany⁶³

incidence: 28/45, conc. range:
2–52 µg/kg, Ø conc.: 11.1 µg/kg, country:
Germany⁶³

incidence: 6/13*, conc. range: 2–25 µg/kg,
Ø conc.: 12.5 µg/kg, country: Japan⁵⁷,
*ncac

incidence: 6/59, conc. range: 10–200 µg/
kg, country: Germany⁶⁸

incidence: 7/81, conc. range: 20–2,000 µg/
kg, country: Germany⁶⁸

incidence: 1/15*, conc.: 400 µg/kg,
country: Brazil⁸¹, *cultivar: IAC 24

incidence: 2/15*, conc. range: 130–210 µg/
kg, Ø conc.: 170 µg/kg, country: Brazil⁸¹,
*cultivar: BH 1146

incidence: 5/106* **, conc. range: 100–
200 µg/kg (2 sa), >200 µg/kg (3 sa),
country: Uruguay/Italy⁹¹, sa from
Uruguay, *ncac, **and by-products

incidence: 1/7, conc.: 14 µg/kg, country:
Netherlands¹⁰³

incidence: 7/21*, conc. range: 4.16–
63.57 µg/kg, Ø conc.: 26.90 µg/kg,
country: Germany¹⁰⁷, *ncac

incidence: 5/9* **, conc. range:
3–1,254 µg/kg, Ø conc.: 141 µg/kg,
country: Korea¹⁰⁸, *for food and feed,
**husked wheat

incidence: 3/53*, conc. range: 2–23 µg/kg,
Ø conc.: 9.6 µg/kg, country: Norway¹³²,
*probably feed

incidence: 1/1,291, conc. range: 40 µg/kg,
country: Australia¹³⁷

incidence: 3/80, conc. range: 10–100 µg/
kg, Ø conc.: 46.7 µg/kg, country:
Australia¹³⁷

incidence: 1/1, Ø conc.: 4,000 µg/kg,
country: Australia¹⁴⁶

incidence: 2/10, conc. range: 10–40 µg/kg,
Ø conc.: 25 µg/kg, country: India¹⁸³

incidence: 12/7,345 overall*, conc. range:
nc, country: Hungary²⁰⁹, *different kinds
of sa

incidence: 12/12*, conc. range: 40–350 µg/
kg, country: New Zealand²¹¹, *sa of
rejected wheat

incidence: 1/42*, conc.: 76 µg/kg, country:
Poland²¹⁴, *ncac

incidence: 35/35*, conc. range: 1,266.3–
5,487.5 µg/kg, Ø conc.: 3,464.3 µg/kg,
country: Iran²³⁸, *ncac

incidence: 1/97, conc.: <100 µg/kg,
country: UK²⁶⁸

incidence: 19/42* **, conc. range: 360–
11,050 µg/kg, country: USA²⁷³, *ncac,
**soft red winter wheat

incidence: 19/102* **, conc. range: 364–
11,054 µg/kg, Ø conc.: 2,721.6 µg/kg,

country: USA³⁰⁰, *ncac, **soft red winter wheat

incidence: 17/283, conc. range: ≤188 µg/kg, Ø conc.: 35 µg/kg, country: UK³¹⁰

incidence: 5/13*, conc. range: 100–1,800 µg/kg, Ø conc.: 760 µg/kg, country: Poland³¹⁵, **Fusarium*-damaged kernels

incidence: 16/99, conc. range: ≤110 µg/kg, country: Canada³⁴⁶

incidence: 10/135* **, conc. range: ≤250 µg/kg, Ø conc.: 74 µg/kg, country: Germany³⁵⁵, *ncac, **conventionally grown

incidence: 2/46* **, conc. range: ≤55 µg/kg, Ø conc.: 47 µg/kg, country: Germany³⁵⁵, *ncac, **organically grown

incidence: 12/53, conc. range: 1–123 µg/kg, Ø conc.: 20.6 µg/kg, country: Germany³⁶²

incidence: 7/54, conc. range: 1–29 µg/kg, Ø conc.: 7.1 µg/kg, country: Germany³⁶²

incidence: 7/57, conc. range: 1–9 µg/kg, Ø conc.: 4.1 µg/kg, country: Germany³⁶²

incidence: 7/52, conc. range: 1–3 µg/kg, Ø conc.: 1.6 µg/kg, country: Germany³⁶²

incidence: 22/60, conc. range: 1–58 µg/kg, Ø conc.: 7.1 µg/kg, country: Germany³⁶²

incidence: 16/23*, conc. range: pr, country: Austria/Italy⁴³⁹, sa from Austria, Germany and Slovakia, *ncac

incidence: 309/1,624*, conc. range: >10–≤1292 µg/kg, Ø conc.: 17 µg/kg**, country: UK⁴⁵⁶, *ncac, **for all sa

incidence: 2/2*, conc. range: 2,500–3,000 µg/kg, Ø conc.: 2,750 µg/kg, country: Portugal⁴⁷⁵, *ncac

incidence: 1/1*, conc.: 45 µg/kg, country: Germany⁴⁷⁹, *control wheat

incidence: 1/1*, conc.: 114 µg/kg, country: Germany⁴⁷⁹, **Fusarium*-infected wheat

incidence: 100/100, conc. range: 0–10 µg/kg (50 sa), 11–50 µg/kg (44 sa), ≤100 µg/kg (6 sa), country: Austria⁴⁹¹

incidence: 2/10*, conc. range: 8–40 µg/kg, Ø conc.: 24 µg/kg, country: Korea⁵¹⁰, *ncac

incidence: 10/39* **, conc. range: tr–16 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **winter wheat

incidence: 6/12* **, conc. range: tr–95.6 µg/kg, country: Lithuania⁵²⁰, *for food and feed, **spring wheat

incidence: 16/49*, conc. range: tr–33.4 µg/kg, country: Lithuania⁵²⁰, *for food and feed

incidence: 12/26*, conc. range: 1–133 µg/kg, Ø conc.: 13.8 µg/kg, country: Croatia/Japan⁵⁴⁷, sa from Croatia, *for food and feed

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?), country: Belgium⁵⁵⁶, *ncac, **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?), country: Belgium⁵⁵⁶, *ncac, **organic

incidence: 2/22* **, conc. range: 0.75–4 µg/kg, country: Belgium⁵⁵⁶, *ncac, **conventional

incidence: 1/26* **, conc.: 0.75–4 µg/kg, country: Belgium⁵⁵⁶, *ncac, **organic

incidence: 26/41, conc. range: ≤77 µg/kg, Ø conc.: 15 µg/kg, country: Germany⁵⁷²

incidence: 1/33, conc.: 17 µg/kg, country: Australia⁵⁹⁶

incidence: 1?/17, conc. range:
180–600 µg/kg, Ø conc.: 340 µg/kg,
country: Poland⁵⁹⁷

incidence: 4/17*, conc. range: 53–1,690 µg/
kg, Ø conc.: 676.8 µg/kg, country: Japan⁶⁰⁰,
*suspected to be pos for acetylated DON
and NIV

incidence: 44/48, conc. range: ≤921 µg/kg,
Ø conc.: 187 µg/kg, country: Austria/
Singapore/USA⁶⁰⁸, sa from Europe and
Mediterranean Region

α-ZEARALENOL

incidence: 4/84, conc. range:
4–71 µg/kg, Ø conc.: 22.6 µg/kg, country:
Germany⁶³

incidence: 1/45, conc.: 8 µg/kg, country:
Germany⁶³

β-ZEARALENOL

incidence: 1/84, conc.: 12.0 µg/kg,
country: Germany⁶³

Penicillium Toxins

CITRININ

incidence: 11/11*, conc. range:
pr–4,800 µg/kg, country: UK⁹³, *ncac

incidence: 15/50, conc. range: 1–4 µg/kg
(12 sa), 5–≤10 µg/kg (3 sa), country: UK⁹⁴,
sa imported?

incidence: 1/7,345 overall, conc.: nc,
country: Hungary²⁰⁹

incidence: 1*/94 overall, conc.: 4,400 µg/
kg, country: Australia²⁴⁰, *consumed by
wild birds

RUBRATOXIN B

incidence: 2/7,345 overall, conc. range: nc,
country: Hungary²⁰⁹

Wheat and barley Feed wheat and
barley may contain the following
mycotoxins:

Aspergillus and *Penicillium* Toxins

OCHRATOXIN A

incidence: 22/95, conc. range: ≤102 µg/kg,
country: UK¹²

Fusarium Toxins

DEOXYNIVALENOL

incidence: 1*/94 overall **, conc.: 95 µg/
kg, country: USA²⁴⁰, *consumed by swine,
**different kinds of sa

**Wheat and other grains,
moldy** may contain the following
mycotoxins:

Penicillium Toxins

CITRININ

incidence: 13/18*, conc. range:
70–80,000 µg/kg, country: Canada⁹²

Wheat bran see Bran (wheat)

Wheat bran and chana testa see
Bran (wheat)

Wheat flour see Flour (wheat)

Wheat soya meal see Meal (wheat
soya)

Wheatings may contain the following
mycotoxins:

Fusarium Toxins

ZEARALENONE

incidence: 2/17, conc. range: 50–500 µg/
kg, Ø conc.: 275 µg/kg, country:
Zambia¹¹⁴

Wheat-oats Feed wheat-oats may
contain the following mycotoxins:

Alternaria Toxins

ALTERNARIOL MONOMETHYL ETHER

incidence: 1/2*, conc.: 14 µg/kg, country:
Germany²⁹⁴, *ncac

Fusarium Toxins

DEOXYNIVALENOL

incidence: 2/2*, conc. range: 1,500–
6,400 µg/kg, Ø conc.: 3,950 µg/kg, country:
Canada⁵⁹⁰, *wheat-oats concentrate

Whole grain see Grain, whole

Whole meal see Meal, whole

Whole-crop maize silage see Silage

Wilted grass silage see Silage

Winter wheat see Wheat

Table 1. *Alternaria* toxins in feedstuffs*AAL-TA*

Silage (maize)

AAL-TB

Silage (maize)

AAL-toxin

Feed (dairy cattle); hay

Altenuene

Cake (cottonseed); feed (poultry); oil cake (peanut); oil cake (sunflower)

Alternariol

Cereals, mixture; feed; meal (rapeseed); meal (sunflower seed); oats; oil cake (peanut); silage (maize); silage (sunflower); sunflower; wheat

Alternariol monomethyl ether

Barley; barley-oats; cereals, mixture; feed; feed (poultry); grain(s); meal (rapeseed); meal (sunflower seed); oats; oil cake (peanut); oil cake (sunflower); rye; silage (maize); silage (sunflower); sunflower; wheat; wheat-oats

Altertoxin-I

Feed (poultry); oil cake (peanut)

Tenuazonic acid

Cake (cottonseed); feed (poultry); meal (rapeseed); meal (sunflower seed); silage (sunflower); sorghum; wheat

Table 2. *Aspergillus* toxins in feedstuffs*Aflatoxicol*

Feed (cat); feed (dog)

Aflatoxin B₁

Alfalfa; alfalfa brome hay; bagasse; barley; bean; bran; bran (rice); bran (rice, deoiled); bran (wheat); by-products (grain); cake (*ambadi*); cake (castor); cake (coconut); cake (cottonseed); cake (dairy); cake (*jagni*); cake (linseed); cake (*mahua*); cake (mustard); cake (mustard, cottonseed, and sunflower); cake (neem); cake (niger); cake (palm kernel expeller); cake (peanut); cake (peanut, deoiled); cake (press); cake (rapeseed); cake (rice bran); cake (rice germ); cake (safflower); cake (sal seed); cake (sesame); cake (sunflower); cassava chip; cereal grain; chick pea; coconut; concentrate(s); copra; cottonseed; cottonseed extract; cottonseed hulls; cottonseed meats; cottonseed products; crumbs; diet, mixed; expeller (peanut); feed; feed components; feed ingredients; feed, complete; feed, compound; feed, finished; feed, miscellaneous; feed, mixed; feed (beef); feed (bird); feed (broiler); feed (calf); feed (cat); feed (cattle); feed (cattle and sheep); feed (chicken); feed (dairy cattle); feed (dog); feed (duck); feed (gluten); feed (grower); feed (horse); feed (layer); feed (ostrich); feed (pig); feed (poultry); feed (poultry, pig); feed (rabbit); feed (rat); feed (sheep); feed (starter); feedstuff; flour (sunflower); grains(s); grains and mixed feed; grains, damaged; gram (bengal); gram (black); gram (green); gram (horse); gram (red); hay; husk; husk (bengal gram); husk (black gram); husk (maize); husk (red gram); legume mixture; linseed; livol; maize; maize flakes; maize germ; maize gluten; maize grits; maize powder; maize, dark grains; maize, ground; makhana puffs; manioc; mash (broiler finisher); mash (broiler starter); mash (chick); mash (grower); mash (layer); matze, ground; meal (cottonseed); meal (cycad); meal (fish); meal (maize); meal (maize gluten); meal (meat); meal (peanut); meal (peanut, deoiled); meal (pig); meal (rice); meal (soybean); meal (sunflower seed); millet, waste; murkool; oats; oil cake (maize); oil cake (peanut); oil (peanut); oilseed; palm kernel; palm products; peanut; peanut dregs; peanut hay; peanut leaf and stem; peanut shell; peanut, deoiled; pellet; pigeon pea; ration, complete; ration, mixed; ration (dairy, proprietary); rice; rice chaff; rice crack; rice germ; rice, broken; rice, damaged; rice, polished; sesame; sorghum; soybean; straw; straw, rice; sunflower; tapioca; testa (biri); testa (mung); wheat

(Continued)

Table 2. (Continued)*Aflatoxin B₂*

Barley; bean; bran (rice); bran (rice, deoiled); bran (wheat); cake (cottonseed); cake (dairy); cake (mustard); cake (niger); cake (peanut); cake (peanut, deoiled); cake (sal seed); cake (sesame); cassava chip; concentrate(s); cottonseed; cottonseed extract; cottonseed meats; expeller (peanut); feed; feed, complete; feed, compound; feed, mixed; feed (bird); feed (cat); feed (cattle); feed (dairy cattle); feed (dog); feed (horse); feed (pig); feed, (poultry); feed (rabbit); feed (sheep); feedstuff; gram (black); gram (horse); hay; husk (black gram); husk (maize); husk (red gram); maize; maize flakes; maize gluten; maize, ground; mash (broiler finisher); mash (broiler starter); mash (chick); mash (grower); mash (layer); meal (cottonseed); meal (fish); meal (peanut); meal (rice); meal (soybean); oats; oil (peanut); palm kernel; peanut; peanut dregs; peanut hay; peanut leaf and stem; pellet; ration, complete; ration, mixed; rice; rice chaff; rice, broken; rice, polished; sorghum; soybean; testa (biri); wheat

Aflatoxins (B₁+B₂)

Cake (cottonseed); cottonseed; feed (pig); feed (poultry); maize; meal (fish); oil cake (mustard); sorghum; soybean

Aflatoxin B

Barley; cake (cocoa); cake (cottonseed); cake (peanut); cake (soybean); cake (sunflower); feed, miscellaneous; feed (cattle); feed (pig); feed (poultry); flour; flour (wheat); maize; maize gluten; oats; rice, broken; rye; sorghum; wheat

Aflatoxin G₁

Barley; bean; bran (rice); bran (wheat); cake (cottonseed); cake (dairy); cake (peanut); cassava chip; concentrate(s); cottonseed; expeller (peanut); feed; feed, complete; feed, compound; feed, mixed; feed (bird); feed (cat); feed (chicken); feed (dog); feedstuff; hay; maize; maize, ground; mash (broiler finisher); mash (broiler starter); mash (chick); mash (grower); mash (layer); meal (meat); meal (peanut); murkool; oats; peanut; peanut dregs; peanut hay; peanut leaf and stem; pellet; ration, complete; ration, mixed; rice; rice germ; rice, broken; sorghum; soybean; testa (mung); wheat

Aflatoxin G₂

Barley; bean; cake (dairy); expeller (peanut); feed; feed, compound; feed (bird); feed (cat); feed (dog); maize; mash (broiler finisher); mash (broiler starter); mash (chick); mash (grower); mash (layer); meal (peanut); oats; peanut; peanut dregs; peanut hay; peanut leaf and stem; pellet; rice; soybean

Aflatoxin (G₁+G₂)

Concentrate(s); feed (poultry); mash (layer)

Aflatoxin G

Cake (cottonseed); maize; maize gluten; rice, broken

Aflatoxins G

Meal (cycad)

Aflatoxins (B₁+G₁)

Feed (cattle)

Aflatoxins (B+G)

Cake (peanut); feed (cattle); feed (hen); feed (mice); feed (pig); feed (rabbit); feed (rat); oil cake (peanut)

Aflatoxin M₁

Feed (cat); feed (dog); maize; maize, ground

Aflatoxin M₂

Feed (cat); feed (dog)

Aflatoxin P₁

Feed (cat); feed (dog)

(Continued)

Table 2. (Continued)*Aflatoxins (B₁+B₂+G₁+G₂)*

Concentrate(s); feed; feed, general; feed (cattle); feed (layer); feed (pig); feed (poultry); fenugreek; maize; oilseed; pea; soybean; wheat

Aflatoxins (B₁+B₂+G₁)

Peanut; peanut shell

Aflatoxins (B₁, B₂, G₁ or G₂)

Feed (shrimp)

Aflatoxin

Bajra; cake (cottonseed); cake (peanut); cake (soybean); concentrate(s); cottonseed; feed; feed (breeder); feed (broiler); feed (cattle); feed (cow); feed (layer); feed (mice and rat); feed (poultry); finisher (broiler); finisher (pig); fish; flour (wheat); jawar; maize; maize fiber; maize gluten; mash (broiler); mash (grower); mash (layer); mash (pig breeder); mash (poultry breeder); meal (cottonseed); meal (fish); milo; oats; oil cake (peanut); oil cake (til); peanut; peanut pods with haulms; pearl millet; pellet (rabbit); rice; rice, broken; rice, polished; screenings (maize); silk worm pupae; sorghum; soybean; starter (broiler); starter (pig); sunflower; wheat

Aflatoxins (total)

Bran (rice); bran (wheat); cottonseed; feed; feed (dairy cattle); feed (dog); feed (duck); feed (horse); feed (pig); finisher (broiler); flour (maize); maize; maize (germ); maize gluten; maize, dark grains; mash (chick); mash (grower); mash (layer); meal (maize); meal (peanut); meal (sorghum); meal (soybean); palm products; rice; rye; sorghum; soybean; starter (broiler); sunflower

Aflatoxins

Barley; bran (rice); bran (wheat); cake (peanut); concentrate(s); cottonseed; cottonseed fines; cottonseed meats; feed; feed ingredients; feed, miscellaneous; feed, mixed; feed (cattle); feed (chicken); feed (chicken grower); feed (chicken starter); feed (goat); feed (pig); feed (poultry); feedstuff; grain(s); maize; meal (coconut); meal (copra); meal (cottonseed); meal (peanut); meal (soybean); millet; oil cake (copra); oil cake (peanut); peanut; pellet (chicken); rice; rice hulls; rice, polished; silage (maize); sorghum; soybean; sunflower

Sterigmatocystin

Barley; diet; feedstuff; feed, mixed; feed (dairy cattle); feedstuff; maize; oilseed rape; rice; straw; wheat

Table 3. *Aspergillus* and *Penicillium* toxins in feedstuffs*Cyclopiazonic acid*

Bran (rice); cake (peanut); cake (sunflower); feed; feed, general; feed (dairy cattle); hay; maize; mash (broiler); mash (chick); mash (layer); millet; peanut; rice; screenings (sunflower); silage (maize); sorghum; wheat

Fumigaclavine A

Silage (maize)

Gliotoxin

Hay; silage (maize)

Kojic acid

Maize

(Continued)

Table 3. (Continued)*Ochratoxin A*

Alfalfa; barley; barley, high moisture; barley-oats; barley-soybean diet; bean; bran (rice); bran (wheat); buckwheat; cake (peanut); cake (rice germ); cereal grain; citrus pulp; concentrate(s); cottonseed; expeller (coconut); feed; feed ingredients; feed, commercial mix; feed, compound; feed, finished; feed, miscellaneous; feed, mixed; feed (bird); feed (bovine); feed (broiler); feed (cat); feed (cattle); feed (cow); feed (dog); feed (hen); feed (horse); feed (pig); feed (poultry); feed (poultry, pig); feed (rabbit); feed (rodent); feed (trout); feedstuff; finisher (broiler); grain(s); grains and mixed feed; grains, heated; hay; legumes, hay, forage; maize; maize gluten; Makhana puffs; mash (layer); meal (maize); meal (pig); meal (soybean); milk powder; millet; milo; oats; oats and barley, hammer-milled; palm kernel; palm products; pea; pea and bean; peanut; rice; rice germ; rye; silage (corn cob mix); silage (maize); sorghum; soybean; starter (broiler); straw; sugar-beet slices; sunflower; sunflower seeds, extracted; tapioca; triticale; wheat; wheat and barley

Ochratoxin B

Maize

Ochratoxins (A+B)

Feed, mixed

Ochratoxins

Feedstuff; silage (maize)

Patulin

Barley; cereal grain; feed; feed, miscellaneous; feed, mixed; feed (poultry); forage; hay; maize; meal; meal (maize); oilseed; silage (maize); sorghum

Penicillic acid

Bean; feed; legume mixture

Viomellein

Barley; oilseed rape; wheat

Vioxanthin

Barley; oilseed rape; wheat

Xanthomegnin

Barley; oilseed rape; wheat

Table 4. *Claviceps* toxins in feedstuffs*Ergot alkaloids*

Diet; feed; feedstuff; grain(s); tall fescue grass; wheat

Ergopeptide alkaloids

Tall fescue grass

Ergovaline

Tall fescue grass

Table 5. *Fusarium* toxins in feedstuffs*Beauvericin*

Barley; feed; maize; oats; silage (maize); wheat

Deoxynivalenol

Barley; barley, pressed; barley-oats; bean; bran; bran (maize); bran (rice); bran (wheat); buckwheat; by-products (maize); by-products (oilseed); cake (cottonseed); cake (rice germ); cereal grain; corn cobs; corn cob mix; cottonseed; expeller (coconut); feed; feed components; feed ingredients; feed, commercial mix; feed, compound; feed, finished; feed, general; feed, industrial; feed, miscellaneous; feed, mixed; feed (broiler); feed (cattle); feed (chicken); feed (chicken grower); feed (chicken starter); feed (dairy cattle); feed (dog); feed (duck); feed (fish); feed (mink); feed (ostrich); feed (pig); feed (poultry); feed (reindeer); feed (rodent); feedstuff; finisher (broiler); forage; grain(s); grain mixture; grain, whole; hay; hull (soybean); maize; maize germ; maize germ/bran; maize gluten; maize grits; maize plant; maize powder; mash (layer); meal (bone); meal (fish); meal (maize); meal (maize bran); meal (maize gluten); meal (millet); meal (rapeseed); meal (soybean); oats; oil (soybean); pellet; pellet (chicken); pellet (oats); rice; rye; screenings (maize); silage; silage (corn cob mix); silage (maize); silage (wheat or triticale); sorghum; soybean; starter (broiler); straw; sunflower; triticale; wheat; wheat and barley; wheat-oats

Deoxynivalenol-3-glucoside/Deoxynivalenol-3-β-D-glucoside

Barley; maize; wheat

3-Acetyldeoxynivalenol

Barley; by-products (maize); cereal grain; corn cobs; feed; feed components; feed, industrial; feed (poultry); feedstuff; hay; maize; maize gluten; maize plant; meal (maize); oats; screenings (maize); wheat

15-Acetyldeoxynivalenol

Barley; by-products (maize); corn cobs; feed; feed components; feed, commercial mix; feed (poultry); maize; maize germ; maize germ/bran; maize gluten; maize plant; meal (maize); meal (rapeseed); oats; screenings (maize); silage (maize); wheat

3-Acetyldeoxynivalenol + 15-Acetyldeoxynivalenol

Barley; maize

3,15-Diacetyldeoxynivalenol

Barley

Acetyldeoxynivalenol

Wheat

Deoxynivalenol and metabolites

Feed

Enniatin A

Barley; maize; wheat

Enniatin A₁

Barley; maize; oats; rye; wheat

Enniatin B

Barley; maize; oats; rye; silage (maize); wheat

Enniatin B₁

Barley; maize; oats; rye; silage (maize); wheat

(Continued)

Table 5. (Continued)*Fumonisin B₁*

Barley; bran (maize); cowpea; feed; feed, general; feed, hominy; feed, maize-based; feed, miscellaneous; feed, mixed; feed, sweet; feed (bird); feed (broiler); feed (cat); feed (chicken); feed (dairy cattle); feed (dog); feed (duck); feed (gluten); feed (horse); feed (layer); feed (mice and rat); feed (ostrich); feed (pig); feed (poultry); feed (rabbit); feed (rat); feed (rodent); feedstuff; forage; hay; maize; maize (ears); maize fine fractions; maize flakes; maize germ; maize germ/bran; maize gluten; maize grits; maize powder; maize cracked; maize, ground; maize/oats mix; meal (maize); meal (maize germ); pellet (alfalfa); pellet (pig); ration, complete; ration, pelleted; ration (finisher); ration (gestation); ration (grower); ration (lactation); ration (nursery); ration (poultry starter); ration (starter); screenings; screenings (maize); silage; silage (maize); sorghum; soybean; wheat

Fumonisin B₁ methyl ester

Forage

Fumonisin B₂

Barley; bran (maize); feed; feed, hominy; feed, maize-based; feed, miscellaneous; feed, mixed; feed (bird); feed (cat); feed (dog); feed (gluten); feed (horse); feed (poultry); feed (rat); feed (rodent); maize; maize fine fraction; maize flakes; maize germ; maize germ/bran; maize gluten; maize powder; maize, ground; meal (maize); meal (maize germ); screenings (maize); silage (maize); wheat

Fumonisin B₃

Bran (maize); feed; feed (poultry); feed (rodent); maize; maize fine fractions; maize powder; meal (maize germ); screenings (maize); silage (maize)

Fumonisin B₄

Maize

Fumonisin (B₁+B₂)

Feed; feed (pig); maize; maize and feed samples

Fumonisin (B₁+B₂+B₃)

Feed; maize

Fumonisin C₁

Maize

Fumonisin C₃

Maize

Fumonisin C₄

Maize

Fumonisin

Bran (wheat); feed (cattle and dairy); feed (dairy cattle); feed (horse); finisher (broiler); flour (maize); maize; mash (layer); meal (soybean); screenings (maize); starter (broiler)

Fumonisin (total)

Maize

Fumonisin

Bran (rice), bran (wheat); feed ingredients; feed, finished; feed (cattle); feed (chicken); feed (chicken grower); feed (chicken starter); maize; maize germ; maize gluten; meal (maize); meal (maize gluten); meal (peanut); meal (soybean); pellet (chicken); screenings (maize); silage (maize); straw; wheat

Fusaproliferin

Feed; maize

Fusarenon X

Barley; by-products (maize); corn cobs; feed components; feed (pig); feed (poultry); maize; maize germ/bran; maize gluten; meal (maize); oats; rice; screenings (maize)

(Continued)

Table 5. (Continued)*Fusaric acid*

Barley; bee wings; feed, mixed; feed (bird); feed (duck); feed (ostrich); feed (rodent); feedstuff; maize; screenings (maize); wheat

Fusarin-C

Screenings (maize)

HT-2 toxin

Barley; by-products (maize); by-products (oilseed); cereal grain; feed; feed components; feed (dog); feed (fish); feed (pig); feed (poultry); feed (reindeer); grain(s); grain mixture; lupine; maize; maize germ/bran; maize gluten; maize plant; meal (maize); meal (soybean); oats; pellet (oats); rye; screenings (maize); silage (maize); wheat

Moniliformin

Barley; bran (rice); feed, mixed; feed (poultry); maize; maize flakes; maize germ; maize germ/bran; maize gluten; meal (maize); oats; screenings (maize); triticale; wheat

Neosolaniol

By-products (maize); cake (peanut); feed components; feed, miscellaneous; feed, mixed; feed (poultry); maize; oats; wheat

Nivalenol

Barley; barley, pressed; bean; bran; by-products (maize); cereal grain; corn cobs; feed; feed components; feed, industrial; feed, miscellaneous; feed (cattle); feed (pig); feed (poultry); feed (reindeer); feed (rodent); hay; lupine; maize; maize germ; maize germ/bran; maize gluten; maize plant; maize powder; meal (maize); meal (millet); oats; pellet (oats); rice; rye; screenings (maize); silage (maize); sorghum; soybean; triticale; wheat

4-Acetylnivalenol

Barley; wheat

Diacetylnivalenol

Maize

Monoacetoxyscirpenol

Feed; feed components; maize; maize gluten; maize plant; meal (maize); screenings (maize); silage (maize)

15-Monoacetoxyscirpenol

By-products (maize); lupine; maize; meal (soybean); oats; wheat

Diacetoxyscirpenol

Barley; by-products (maize); cereal grain; feed; feed components; feed, mixed; feed (dog); feed (fish); feed (mink); feed (pig); feed (poultry); feed (reindeer); feedstuff; forage; grain(s); grain mixture; hull (soybean); maize; maize gluten; meal (soybean); oats; oats and barley, hammer-milled; peanut; screenings (maize); silage (maize); soybean; sunflower; wheat

Diacetoxyscirpenol and Metabolites

Feed

Scirpentriol

By-products (maize); feed components; maize; maize plant; oats; silage (maize); wheat

T-2 toxin

Alfalfa; barley, bran; bran (wheat); by-products (maize); cereal grain; feed; feed components; feed ingredients; feed, finished; feed, industrial; feed, mixed; feed (cattle); feed (dog); feed (fish); feed (mink); feed (pig); feed (poultry); feedstuff; forage; grain(s); grain mixture; hay; lupine; maize; maize germ/bran; maize gluten; maize plant; meal (maize); meal (soybean); oats; oats and barley, hammer-milled; peanut; pellet (oats); rice; rye; screenings (maize); sorghum; soybean; straw; sunflower; triticale; wheat

T-2 toxin + HT-2 toxin

Feed (cattle); feed (pig); feed (poultry); oats

(Continued)

Table 5. (Continued)**T-2 toxin and metabolites**

Feed

T-2 toxin equivalents

Hull (soybean); meal (soybean); oil (soybean); soybean

Type-A-trichothecenes (HT-2 toxin, T-2 toxin)

Feed

T-2 tetraol

Barley; by-products (maize); feed components; maize; maize plant; meal (soybean); oats; silage (maize); wheat

T-2 triol

Barley; by-products (maize); feed components; grain mixture; maize; maize plant; oats; wheat

Trichothecenes

Cereal grain; feed; feed, general; feed, miscellaneous; feed (pig); feed (poultry); feedstuff; forage; maize; meal; oilseed; triticale; wheat

Zearalanone

Maize

 β -Zearalanone

Maize

Zearalenone

Barley; bean; bran (maize); bran (rice); bran (wheat); by-products (maize); by-products (oilseed); cake (cottonseed); cake (safflower); cake (sunflower); cassava chip; cereal grain; chick pea; concentrate(s); corn cobs; corn cob mix; cottonseed; crumbs; diet, mixed; feed; feed components; feed ingredients; feed, complete; feed, compound; feed, finished; feed, industrial; feed, miscellaneous; feed, mixed; feed (broiler); feed (cattle); feed (chicken); feed (chicken grower); feed (chicken starter); feed (dairy cattle); feed (duck); feed (ostrich); feed (pig); feed (poultry); feed (poultry, pig); feed (rodent); feedstuff; finisher (broiler); forage; grain(s); grain mixture; grains and mixed feed; grain, whole; hay; herbage; hull (peanut); hull (soybean); maize; maize flakes; maize germ; maize germ/bran; maize gluten; maize plant; mash (broiler finisher); mash (broiler starter); mash (grower); mash (layer); meal, whole; meal (bone); meal (fish); meal (maize); meal (maize gluten); meal (millet); meal (peanut); meal (pig); meal (soybean); meal (wheat soybean); oats; oil cake (maize); oil (soybean); oilseed; pellet; pellet (chicken); ration (dairy, proprietary); ration (gestation); rice; rice germ; rice, broken; rye; screenings (maize); silage; silage (corn cob mix); silage (grass); silage (maize); sorghum; soybean; soybean, extracted; starter (broiler); straw; straw, *Paspalum palidosum*; tapioca; triticale; wheat; wheatings

 α -Zearalenol

By-products (maize); maize; meal (soybean); silage (maize); wheat

 β -Zearalenol

By-products (maize); maize; meal (soybean); silage (maize); wheat

Zearalenols (α - and β - zearalenol)

Maize

Zearalenol

Grain(s); hull (soybean); maize; meal (soybean); oats

Table 6. *Penicillium* toxins in feedstuffs*Citreoviridin*

Maize

Citrinin

Barley; barley-oats; barley-soybean diet; bran (rice); bran (wheat); cake (cottonseed); feed; feed, mixed; feed (cattle); feed (pig); grains, heated; hay; maize; Makhana puffs; meal (fish); oilseed rape; palm products; pea and bean; rice germ; silage (maize); wheat; wheat and other grains, moldy

Mycophenol acid

Maize; silage; silage (grass); silage (maize)

Penitrem A

Feed; feed (dog)

Penitrem B

Feed (dog)

Penitrem D

Feed (dog)

Penitrem E

Feed; feed (dog)

Penitrem F

Feed (dog)

PR toxin

Feed (dairy cattle); hay

Roquefortine A

Silage (maize)

Roquefortine C

Feed; feed (dog); grain(s); maize; silage; silage (balls); silage (corn cob mix); silage (grass); silage (maize)

Rubratoxin B

Barley; feed, mixed; maize; wheat

Table 7. *Stachybotrys* toxins in feedstuffs*Satratoxin G, H* Straw

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