Ethiopian TVET System

Animal Production Level-II

Training Module –Learning Guide 16-18

Based on Version 3 March 2018

Occupational Standard (OS)

Unit of Competence: Assist Basic Husbandry practice Swine

Module Title: Assisting Basic Husbandry practice Swine

TTLM Code: AGRTTLM 0919v1

October 2019

Module Title: Assisting Basic Husbandry practice Swine

TTLM Code: AGR APR2 M06 0919 V1

This module includes the following Learning Guides

LG16: Prepare for raising swine activities

(LG Code: AGR APR2 M 06 LO1-LG16

LG17: Undertake swine raising activates

(LG Code: AGR APR2 M 06 LO2-LG-17

LG18: Handle materials and Equipment.

(LG Code: AGR APR2 M 06 LO3-LG-18

Instruction Sheet	Learning Guide – 16

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- ✓ Identify, check and report *materials, tools and equipment*
- ✓ Manual handling techniques
- ✓ select & check suitable *personal protective equipment (PPE)*
- ✓ Apply *Occupational Health and Safety (OHS) requirements*

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to :

- ✓ Identify required *materials, tools and equipment*
- ✓ Check are conduct all materials, tools and equipment, and insufficient or faulty.
- ✓ Load and unload correct manual handling techniques when materials to minimize damage to self, others, load and vehicle.
- ✓ Select and check suitable *Personal Protective Equipment (PPE)* prior to use.
- ✓ Work task provide according to *Occupational Health and Safety (OHS)* requirements and supervisor instructions

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 4.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 ,Sheet 4 ,Sheet 5 and Sheet 6.
4. Accomplish the “Self-check 1, Self-check 2, Self-check 3, Self-check 4, Self-check 5 and Self-check 6” **in page -6, 9, 10, 11,12 and 13** respectively.

Introduction to swine

The word “swine," "hogs," and "pigs" refer to animals of the porcine family or pig family. The term swine can also refer to the pig family in a general way, and "pig" can be used in referencing young animals. "Hog" generally refers to animals at or near market weight or finished for market. Pigs are a mono gastric animal feed on general. Pigs are very intelligent and learn quickly they are very social animal. It is highly prolific animal. A sow can give birth to a litter of 7-18 piglets about 2-3 times in a year. The gestation period of a sow is 114-115 days .They are more tolerate cold than heat. It has no sweat glands, so they can’t sweat. They roll around in the mud to cool their body.

Advantage and disadvantage of raising swine

Advantages:

- ✓ Easy to handle (feeding, water supply, monitoring health, detecting heat, farrowing, etc.).
- ✓ Easy to undertake vaccinations and treatments.
- ✓ Low risk of diseases when the farmer adheres to good sanitation practices.
- ✓ The environment is kept clean and crops are not destroyed by scavenging pigs.
- ✓ The manure can fertilize fish ponds or fertilize the field crops (or garden) of the farmer.
- ✓ Fast economic return
- ✓ high fertility rate
- ✓ high feed conversion efficiency

Disadvantages:

- ❖ High costs of inputs (housing material, feeds and labor).
- ❖ Farmer requires more management skills.
- ❖ This system is adapted by farmers with a sense for improved pig production.
- ❖ Often farmers can be found in areas where they have access to commercial feeds

Terminology

- **Pig**, **hog**, or **swine**, the species as a whole, or any member of it. The singular of "swine" is the same as the plural.
- **Shoat**, **piglet**, or (where the species is called "hog") **pig**, un weaned young pig, or any immature pig
- **Sucker**, a pig between birth and weaning
- **Weaner**, a young pig recently separated from the sow
- **Runt**, an unusually small and weak piglet, often one in a litter
- **Boar** or **hog**, male pig of breeding age
- **Barrow**, male pig castrated before puberty
- **Stag**, male pig castrated later in life (an older boar after castration)
- **Gilt**, young female not yet mated, or not yet farrowed, or after only one litter (depending on local usage).
- **Sow**, breeding female, or female after first or second litter
- **Barrow – male pig castrated before sexual maturity**
- **Creep feeder** –area accessible to small pigs but not for their dams
- **Farrow** –to give birth to pigs

Breed types of swine

Breed	Color	Ears	Type	Country of origin	Observations
Landrace	White	Hanging	Meat	Denmark	Long face, good mothers, weak legs,
Large white	White	Standing	Meat	England	Fertile, high quality meat, fast grower
Berkshire	Black with 6 White points	Standing	Meat	USA	Short, black skin, more resistant to diseases compared to white breeds
Hampshire	Black with White bands	Standing	Meat	USA	Short, good quality meat, strong legs
Duroc Jersey	Black and White	2/3 erect 1/3 hanging	Meat	USA	Good constitution, strong legs, fast grower, resistant to stress
Pietrain	Black and White	Standing	Very meaty	Belgium	Very meaty ham and loin, very susceptible to stress

Self-Check 1	***Written Test***

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. What are the advantages of raising swine ? (5 points)
2.Write at least 5 breeds of swine ? (8 points)

Note: Satisfactory rating - 13 points Unsatisfactory - below 13 points

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet 1	Identifying materials, tools and equipment according to instructions

Feeders:-

- ✓ Self-feeders are generally used for nursery and grow-finish pigs
- ✓ Breeding stock are generally limit fed via floor feeding or in self feeders
- ✓ Pigs per feeder space range from 2 for nursery pigs to 4-5 for finishing pigs.

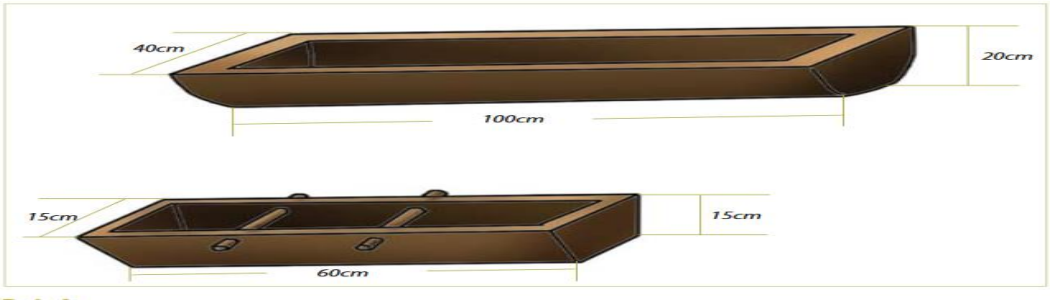


Figure 1.1 Feeders

Feeder requires to be

- Feeder -can be clean easily
- Comfortable and manageable
- Enough space depending of the age ,production status of the pig
- Can be made of locally available material but durable
- Not contaminated by pigs

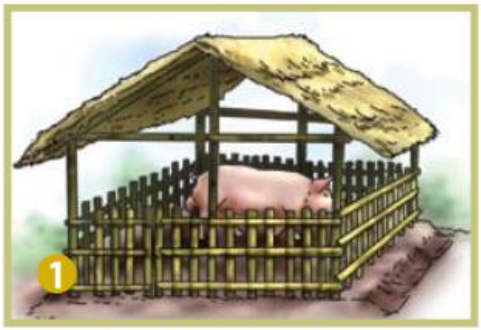
Drinkers:-

- ✓ Nipple waterers are very popular in confinement
- ✓ Water cups are also popular
- ✓ Some buildings (particularly gestation buildings) may use a concrete feed trough as a place to provide water after feeding
- ✓ Rule-of-thumb = provide one waterer/15 pigs

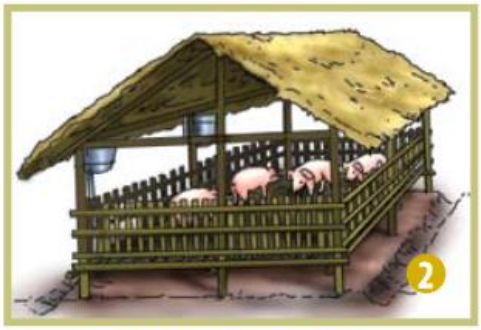
Figure 1.2 Drinkers

Other materials used in swine farm raising include:

- Litter:-Bedding material, straw etc.....
- garden hose (to wash off pig)
- mild soap, such as Orvis ,cane ,rags (to wash out ears and wipe off feet) ,
- hog scale-portable units or tape measure
- other farm tools, spading fork, wheel barrow and rake
- farrowing materials& equipment
- Veterinary equipment such as (clippers, Castrating equipment) etc.
- Boar, gilt for natural mating (for breeding)
- Disinfectants, etc.
- Housing and other facilities



Separate house for breeding boar/pregnant sow



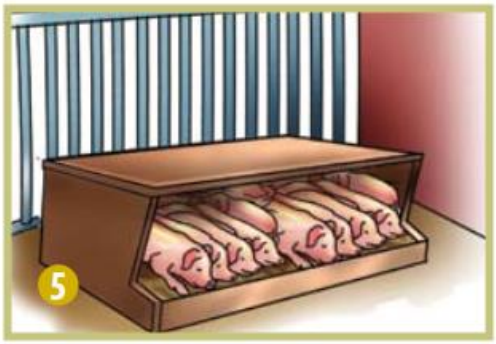
Separate house for gilt and dry sows

Fig. 3 Houing faccilities

Provision for farrowing pan

Heating and cooling arrangement

Fig. 4 farrowing and brooding faccilites

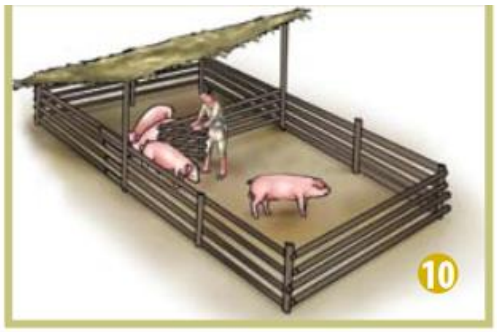


Provision of piglet nest/ box

Provision of creep feed/starter feed

Fig.5 feeding and piglet nest faccilites

Suitable floor space



Sufficient space for exercise

Fig. 6 flooring and space for exercise

Self-Check 2	***Written Test***

Name: _____ ***Date:*** _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Write the necessary equipments, materials & tools for swine production? (7 points)
2. what are basic requirements of feeder (6)

Note: Satisfactory rating - 13 points Unsatisfactory - below 13 points

Information Sheet 2	Reporting and conducting materials, tools and equipment

Materials, tools and equipments were checked whether they are functional and faulty. During swine rising activates different material, tools, equipment and facilities are very mandatory , so there functionality should be checked and reported regularly . Necessary equipments like teeth trimmers used to trimmed of the fox teeth, castrating material called emasculator should be cleaned and ready that is used to remove testicles of the piglet and tail clipping equipments sharp knives enough to cut off the tails of pig let were ready.

Self-Check- 3	Written Test

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. what is the functions of emasculators ,teeth trimmers and tail clipping equipments(12)

Note: Satisfactory rating - 12 points Unsatisfactory - below 12 points

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet 3	Using manuals when loading and unloading

Drivers and their vehicles transporting pigs to the market or slaughterhouse or delivering feed are a major risk for disease transmission. Drivers should strictly adhere to farm protocols and bio security principles when handling animals. Feed should be delivered outside the fence. The vehicles, especially those used to transport pigs, should be thoroughly cleaned before returning or visiting other farms.

Pig keepers should also take precautions against contamination from vehicles by establishing a safe pig loading location (possibly with a bay) and by not allowing vehicle drivers into pig buildings. Vehicles need to be cleaned and disinfected after each rotation. All instruments or equipment that are likely to come into contact with pigs, such as restraint snares, needles and scalpels, should be assigned to the farm and kept clean. They should not be transported from farm to farm; if they have to be, they should be cleaned and disinfected.

During loading and unloading we should to considered the following points:

- Pigs to be transported should not be fed 12hr before loading
- Provide a loading ram if many pigs are to be transported at one the market
- Handle pigs out most care
- Avoid suffocations
- Spray with cold water before loading
- Transport the pigs in cooler time or month
- The truck shall provide with bedding on the floor, and with good ventilations
- Avoid mixing of pigs with different size ,age and herds
- Avoid any sharp and protruding objects on the truck
- Provisions of unloading facilities

Self-Check 4	***Written Test***

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. what are the basic requirements of vehicles in disease prevention mechanism during loading and unloading (8)

2. write basic requirements of loading and unloading (9)

Note: Satisfactory rating - 17 points Unsatisfactory - below 17 points

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet 4	Selects and checks suitable personal protective equipment (PPE)

- Using appropriate Personal Protective Equipment (PPE);-It is important to reduce the possible hazard at work operation. Personal Protective Equipment (PPE) The equipment designed to protect handlers from injury. This equipment should be selected based on the procedures to be accomplished, referring to manuals or supervisors if in doubt of its appropriateness.

  PPE commonly includes

  - ❖ Gloves [rubber or latex to protect from caustic or toxic substances, leather or canvas to protect from abrasion, disposable plastic to maintain bio-security];
  - ❖ Boots [heavy leather or rubber for protection and disposable plastic for bio-security];
  - ❖ Aprons

Self-Check 5	***Written Test***

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. write functions of PPE (5)point

2. write PPE used for swine (8)

Note: Satisfactory rating - 13 points Unsatisfactory - below 13 points

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet 5	Apply Occupational Health and Safety (OHS) requirements

Injuries from pigs usually occur within or close to farm buildings. Dangerous environments include slippery floors, manure pits, automatic feeding equipment and confinement buildings.

- Confined buildings have a manure storage pit that emits gases that, if not ventilated, can kill not only pigs, but workers as well.
- The possible potential hazards working in swine farm are as follow:-

Pig behavior :

- A sow will attack if her piglets are threatened.
- Pigs can bite, step on or knock people down.
- They tend to stay in or return to familiar areas.
- A pig will try to return to the herd when attempts are made to separate it.
- Pigs are likely to pull back when moved from a dark area into a light area, such as out of a pig house into the daylight.

Air exposures:

- Dust from feed, animal hair and fecal matter
- Pesticides used on pigs and other chemicals, such as disinfectants, Ammonia, hydrogen sulphide, methane and carbon monoxide from manure storage pits.

Fires: - in buildings is another potential hazard, as is electricity.

Zoonosis diseases: - are also among the well-known potential hazards of humans in swine farm

- Some zoonotic infections and parasites can be transmitted from the pig to the worker.
- Common zoonosis associated with pigs includes brucellosis and leptospirosis (swineherd's disease).

Self-Check 6	***Written Test***

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. write behaviors of pig (5)point

2. what does it mean by OHS (8)

Note: Satisfactory rating - 13 points Unsatisfactory - below 13 points

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Instruction Sheet 02	Learning Guide - 17

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- ✓ Provide instructions and directions
- ✓ Undertake swine raising activities
- ✓ policies and procedures in the handling and disposing of materials

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to :

- ➢ Instructions and directions provided by supervisor are followed and clarification is sought when necessary.
- ➢ Swine raising activities are undertaken in a safe and environmentally appropriate manner and according to enterprise guidelines.
- ➢ Enterprise policies and procedures in relation to workplace practices in the handling and disposal of materials are observed.

Learning Instructions:

5. Read the specific objectives of this Learning Guide.
6. Follow the instructions described below 3 to 6.
7. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
8. Accomplish the “Self-check 1, Self-check 2, Self-check 3 and Self-check 4” **in page -6, 9, 12 and 14** respectively.
9. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, Operation Sheet 2 , Operation Sheet 3 and operation 4” **in page -18,19,20,and 21.**

   Do the “LAP test” **in page – 22** (if you are ready).

Information Sheet-1	Provide instructions and directions

Instructions and directions provided by supervisor are followed and clarification is sough when necessary. Any employee who works in industry which raises swine or any farmer who raise his own stock must follow the following instruction and direction:-

- Enterprise policies and procedures
- Manufacturer instructions
- Material safety data sheets (MSDS)

The MSDS is a detailed informational document prepared by the manufacturer or importer of a hazardous chemical. It describes proper handling and rising activates of swine.

MSDS's contain useful information such as:

- Flash point
- Toxicity
- Procedures for spills and leaks and
- storage guidelines.

Information included in a Material Safety Data Sheet aids in the selection of safe products, helps you understand the potential health and physical hazards of a chemical and describes how to respond effectively to exposure situations

- *OHS standards and procedures*
- *Specifications for tools, equipments and materials*
- *Standard Operating Procedures (SOP)*

It is a set of step-by-step instructions compiled by an organization to help workers carry out complex routine operations. SOPs aim to achieve efficiency, quality output and uniformity of performance, while reducing miscommunication and failure to comply with industry regulations

- Verbal directions from manager or supervisor
- Work instructions and standards
- Work notes

Instructions and directions provided by supervisor must be followed and if we have any question we can ask when necessary. And also employee must observe and follow Enterprise policies and procedures in relation to workplace practices in the handling and disposal of materials.

Self-Check 1	***Written Test***

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. *What are the aim Standard Operating Procedures (SOPs) ?* (10 points)

Note: Satisfactory rating – 10 points Unsatisfactory - below 10 points

You can ask you teacher copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Undertaking swine handling techniques

2.2.1. Swine handling techniques

Safety recommendations have evolved for the safe handling of swine

- Working with small swine in the same pen as the sow should be avoided.
- A hurdle or solid panel should be used when handling swine to avoid bites and being knocked over.
- A pig can be moved backwards by placing a basket over its head.
- Children should be kept out of pig pens and not allowed to reach through fences to pet pigs.
- Because of their herding instincts, it is easier to separate a group of swine from a herd than a single animal.
- Swine can be moved from dark to light areas with the use of artificial light. When swine are moved at night, such as through chutes or alleys, a light should be placed at the destination.
- Loading chutes should be level or at not more than a 25-degree angle
- Cleanliness, vaccination, quarantine of sick animals and avoiding exposures are ways to control zoonosis.
- When treating sick pigs, wear rubber gloves.

2.2.2. Site selection

To start swine raising activities, good swine farm site has to be selected first and it should be:

- The site should be at an elevated place that cannot be flooded by rain water.
- The site should be protected from the sun (shade from trees) and have ample fresh air.
- Away from residences (around 8- 10 meter away downwind).
- In case of a large scale pig farm, the site selected needs also to be.
- Well connected to roads throughout the year

- Suitable for manure disposal
- Connected to reliable water and electricity sources

2.2.3. Feeding of swine

Swine are in general not particular about their food, which can be of both animal and vegetable origin. Although they accept most foods, this does not imply that the quality of their food is not important.

FEED DURING PREGNANCY

• During pregnancy, because of low demand, the feed should be rationed.

• Towards the end of pregnancy it is desirable to increase the nutrition (practically up to additional 1 kg of feed /day).

• This can be done by increasing the content of lipids colostrums and milk + high fat + production + survival and growth of piglets.

• Excessive diet at conception is useless and costly ($!!), causes excess fat in the sow: this then reduces her appetite and consequently her (al-ready insufficient) capacity to swallow at the next lactation, causing the sow to lose even more weight!

FEED DURING PREGNANCY should be RATIONED

- 2-3 days upon fertilization: 2,0 kg/head is sufficient. from the first to the third month: 2,5 kg/head up to 3,0 kg/head.
- the last month: increase by 3,5 kg/head, gaining in fetus size, the body weight of piglets at birth and their vitality.
- by the end of the pregnancy the sow should gain **in shape but not in fat:** fat animal have problems at far-rowing and lack of appetite at the onset of nursing.

NOTE: The quantities of COMPLETE CONCENTRATE FEED should be shown. It will be seen case by case, as well as when using self-produced feed (corn, barley, soybean, for-age, vegetable waste, bran, etc.).

- Be careful to avoid feed contaminated with **toxins** (e.g. micro toxins).
- Always provide sufficient water, they can drink up to 18 l/day.
- This is a period when the sow makes the best use of rations rich in **fiber**: grass, forage, bran, beet pulp, silage, vegetable waste.

FEED DURING NURSING

Feed given during nursing affects milk production, and consequently piglet growth and weight loss of the sow

In practice:

- The sow be provided UNRESTRICTED feed, especially if nursing 9-10 or more piglets**,**
- It should be given feed that provides around 3300 kcal ED/kg.
- Should gain (depending on the size, genetic type, nursing phase, environmental conditions…) from 4,5 kg/d to 5,5 kg/d from week two onwards.

DURING NURSING

- Introduction of solid feed starts from day 5-7 by a few grams, in the piglet pen; from day 10 the pig-lets should be placed at the feed-through, the feed is gradually increased and it is advisable to change it every day.

AFTER WEANING

- if the health condition is good, the feed should be distributed as needed. If they develop diarrhea use **rations.**

2.2.4. Facilitate mating

- At the end of the test, energy intake of selected gilts should be restricted to prevent overweight conditions.
- Nutrients other than energy should be provided to meet the minimum daily recommended allowances of the National Research Council

- Moving gilts to new pens, increased exercise, and daily exposure to boars beginning between 160 and 180 days of age will help stimulate the onset of estrus.
- Breeding should be delayed until the second or third estrus to increase the probability of large litters and prevent dystocia.
- Gilts that do not conceive after mating at two estrous periods should be marketed. Likewise, gilts that have not expressed heat by 9 months of age should be culled.
- During gestation, gilts should be fed to gain about 75 lb and not become overly fat

Mating is an important event; as at a successful conception, new swine are created.

There are two methods of pig breeding,

A. Natural breeding

B. Artificial insemination in pigs

A. Natural breeding

When gilts reach 5 - 6 months, they come in heat for the first time. At this early age the gilts are not suitable for breeding because their reproductive organs are not yet well developed. Gilts must be bred when they reach 7 - 8 months and come in heat for the second or third time. The average length of the oestrus cycle is 21 days and this cycle is repeated when the pig has not been mated successfully.

B. Artificial insemination in pigs

When using artificial insemination, the boar does not breed directly with the sow. With the AI method, semen from the boar is collected and “artificially” inserted by the inseminator into the uterus of the sow.

Advantages of artificial insemination:

- ❖ The semen can be transported over long distance reaching many farmers.
- ❖ AI gives a good scope to use one breeding boar for many sows (and reduce Operational expenditures).
- ❖ AI can restrict the spread of diseases which a boar is likely to spread.

2.2.5. Farrowing of sow

The days before farrowing at the end of the pregnancy the sow should be observed closely to determine start of farrowing and if necessary to assist the sow and secure the life of the young piglets. On many farms, 30% of all piglets born are lost in the first 4 days. Correct husbandry can save many weak piglets.

Sing of farrowing;

- ❖ sow shows distress,
- ❖ Biting walls
- ❖ Vulva and udder are swollen.

The following things should be prepared before farrowing:-

- The farrowing pen with straw on the floor
- The udder and nipples must be cleaned
- A clean cloth for cleaning and drying
- Oxytocine to assist the sow in making contractions

Piglets should be born at regular intervals of approximately 10 - 15 minutes. If there is more than one hour interval, there is a potential problem. When we observe or assume problems with the birth of the piglets, the farmer needs to do a vaginal check. Sometimes piglets can be stuck and the farmer can gently assist these piglets to be born. Before any vaginal-check:-

- wash hands and arms thoroughly with soap
- Clip nails short and remove any dirt under the nails.

By not observing strict hygiene standards, the uterus can easily become infected. In the case that the farrowing sow has not enough energy or effort for the contractions, or that the farrowing interval last longer than 1 hour, the sow should be given an intramuscular injection with 0.25 cc Oxytocine to assist the sow in making contractions. If the sow still does not give birth, a veterinarian should be called in for assistance.

Be sure the sow cleanse completely within 1 hour after the last piglet was born or a uterine infection may result Check the sow's udder at least twice a day. If it gets hard, lumpy and hot there may be infection of the udder (mastitis). In that case veterinary

assistance should be called. Use oxytocin and antibiotic only under the direction of a veterinarian (or a VVW) to treat udder and uterine infections.

2.2.6. Piglet handling

- A few minutes after the birth the umbilical cord may be pulled gently away or cut if necessary (to about 5 cm length).
- After birth, the navel of each piglet should be soaked in a cup of iodine solution to prevent inflammation and tetanus.
- Each piglet should be rubbed carefully, dry with a cloth.
- Each piglet should be rubbed carefully, dry with a cloth.
- Make sure the piglets are able to suck from the udder as soon as possible after birth.
- Their sucking will encourage the sow to let down her milk. Weak piglets may need to be assisted
- It is important that the piglets immediately take advantage of the first milk called colostrums.
- Colostrums should be taken by all the piglets on the same day they are born. If taken at this time the colostrums is able to protect the piglets against diseases. After the first one or two days, the digestive system of the piglets breaks down the colostrum and its ability to protect from diseases is lost. The piglets can be given additional feed of goat or cow's milk, or a mashed bean porridge to which a little sugar has been added.
- If the milk produced by the sow is too little to meet the needs of the piglets or the sow completely neglects the piglets, they should be put on another sow or reared on cow or goat's milk.

N.B. causes of mortality of piglets most of cases of piglet mortality are a consequence of kicking by the mother .

Newly born piglets being assisted to suckle

The navel of a piglet being dipped in iodine solution

Fig. 1

2.2.7. Pig let feeding

For the first two days the piglets should be fed at regular intervals 5 times a day, for about 10 minutes each time. On the third and on the fourth day they should be fed four times a day, and after that 3 times a day. After 14 days, increase the quantity of milk at each feed, but gradually decrease the number of feeds per day. Gradually change over to more solid feed, so that by the age of about three weeks they should be able to take regular feed. If no nutritious feed is available they should continue on milk for a while longer. The weaker ones can be fed four times a day for a longer time. The figures in the table are maximum quantities - it is better to give too little rather than too much feed. There should be a continuous supply of water, which should be boiled to avoid any contamination.

Feeding program for orphan piglets

Day	No. of feeding times	Quantity each time (ml)
1	5	30
2	5	40 – 45
3	4	60
4	4	70
5 - 7	3	80 - 100
8 - 9	3	120
10 - 11	3	140
12 - 14	3	160

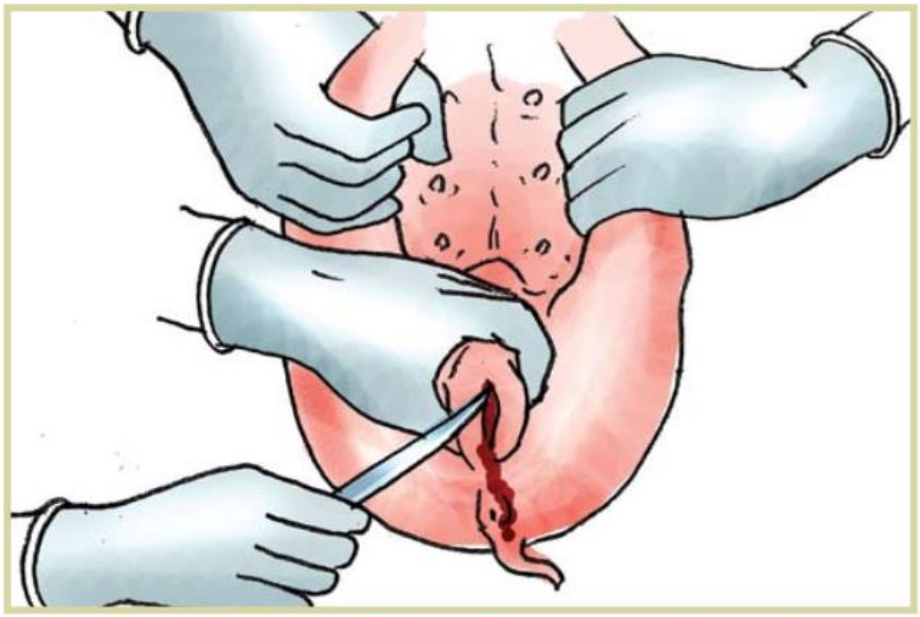
Fig. 2 Feeding of piglet

2.2.8. Castration

Male piglets are castrated to prevent their meat from smelling strongly and also to make sure that they are manageable when they become sexually mature. Castration should be done in the first two weeks of a piglet's life. The animals should be fit and healthy and if this is not the case it is better to postpone the operation.

To carry out the castration two people are needed, the person carrying out the small operation and an assistant to hold the piglet. The pen should be dry and very clean.

The assistant takes the pig by the hind legs and holds it firmly between his/her legs, the piglet's head pointing. Male piglets that are not selected for breeding can be castrated at the age of 2 weeks old (easy to handle and wounds heal quickly).



A pig is held securely between the legs of the assistant with the scrotum exposed and testicles rounded out

Fig. 3 open castration of piglet

2.2.9. Teeth trimming

It is usually necessary to trim the piglets' teeth to prevent them biting the udder. The piglets are born with needle sharp teeth which may injure the sow's udder and prevent the sow from letting the piglets suckle. The piglets would then be left to starve. Only the points of the teeth should be removed. If any more is removed there is a risk of damaging the mouth. When trimming the teeth the tongue of the piglets should be rolled back to avoid injuring it.

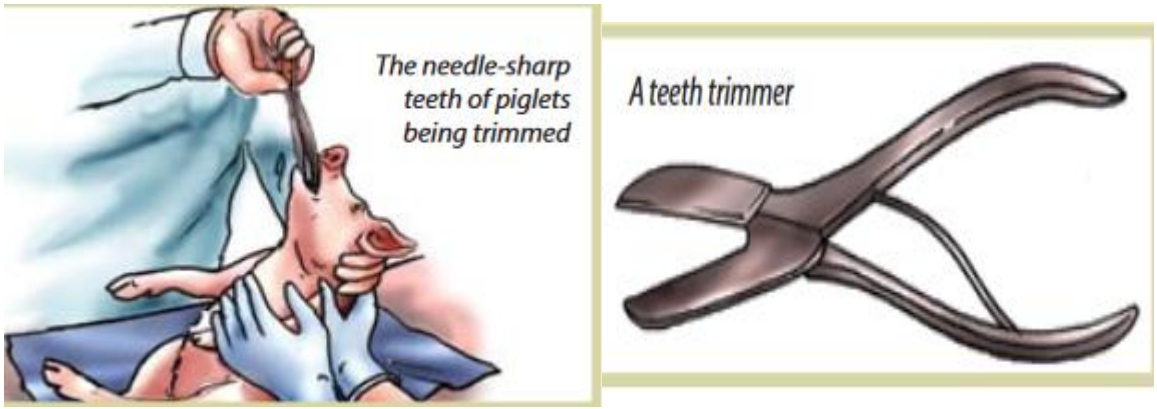


Fig.4 teeth trimming

2.2.10. Clipping tail

Cut the tip of the tail within a day. This prevents tail chewing, which can lead to infections. A piece of chain can be hung down from the ceiling for the piglets to chew.

2.2.11. Diseases prevention

Local breeds are often resistant to diseases. The main problem with keeping any sort of pig in free-range or semi-intensive systems is not disease but disabling infestation by worms or other parasites. It is in intensive pig keeping systems that disease is a greater risk, because many animals are kept together in a small space. Infectious diseases spread easily and quickly among the animals. In intensive systems commercial breeds are often used and these tend to be less resistant to disease.

Diseases can lead:-

- Production shortfalls (slower growth rates or loss of animals)
- Loss of income for the farmer

“Prevention is better than cure” In terms of prevention, if there is a high risk of an infectious disease occurring, animals can be vaccinated to reduce the risk of losing them all if a disease breaks out. Whatever, the circumstances, if at all possible the advice of a vet should be sought if there is disease on the holding. Despite all preventive efforts, treatment with medicines may be the only solution remaining.

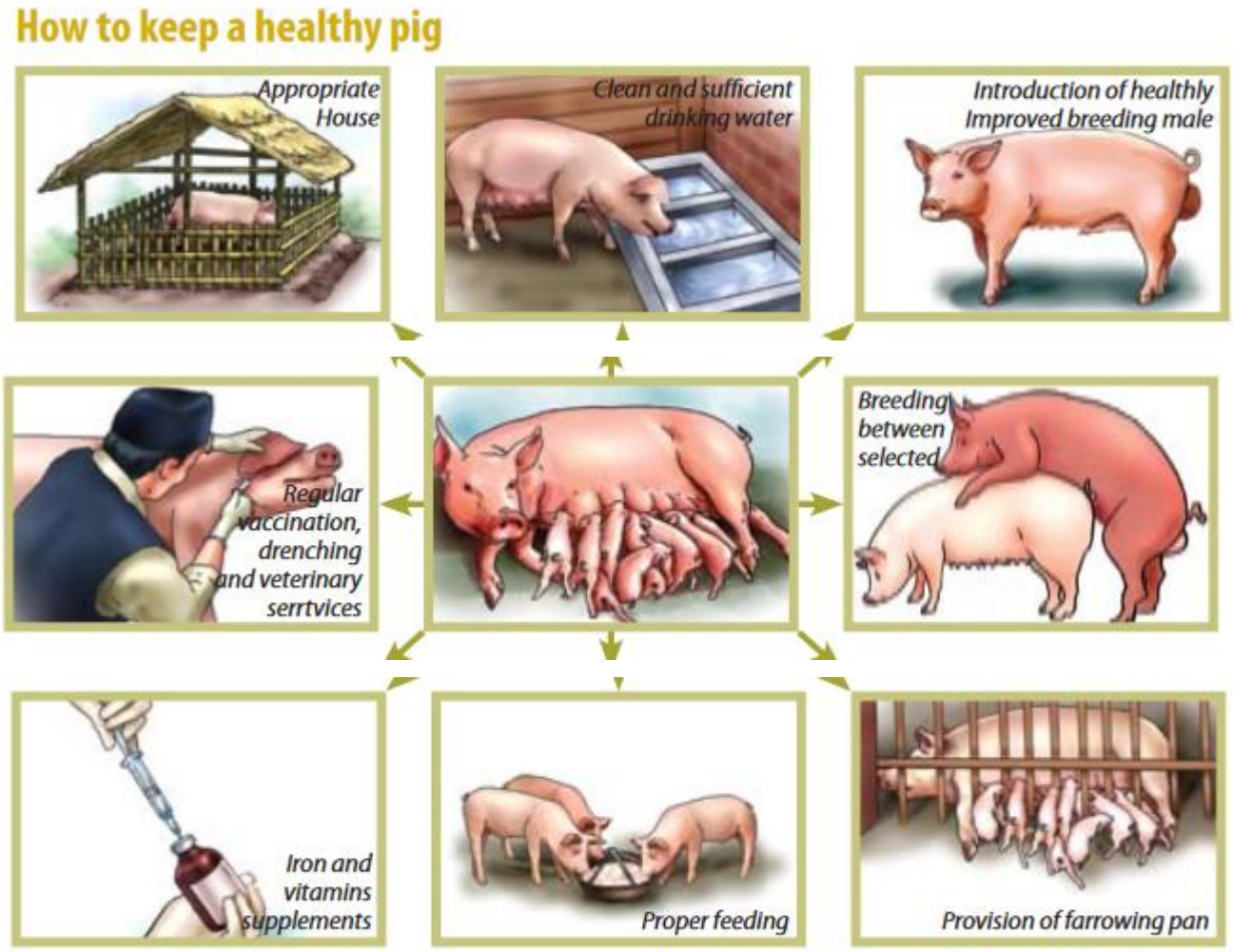


Fig.5 Disease prevention techniques

Self-Check 2	***Written Test***

Name: _____ ***Date:*** _____

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Write proper handlings of pig let ? (5 points)
2. What are the sign of farrowing?(5 points)
3. What are disease preventions mechanisms of swine?(5 points)

Note: Satisfactory rating – 15 points Unsatisfactory - below 15 points

You can ask you teacher copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Observing policies and procedures in the handling and disposing of materials

Materials should be handle and disposed properly with proper policies and procedures

- Enterprise policies and procedures in relation to workplace practices in the handling and dispose materials are observed.
- Any employee who works in industry which raises swine or any farmer who raise his own stock and also employee must observe and follow
- Enterprise policies and procedures in relation to workplace practices in the handling and disposal of materials.

Self-Check 3	***Written Test***

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Write the effect of poor handling of disposal of material (15)points

Note: Satisfactory rating – 8 points Unsatisfactory - below 15 points

You can ask you teacher copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Reporting problems or difficulties to supervisor

Problems or difficulties in completing work to required standards or timelines are reported to supervisor. Any problems or difficulties which will happen while we are accomplishing our raising activities have to be reported to supervisor or manager by the required standards or timelines. But before reporting we have to do our best to control the problems.

The most common problems of pig rising are:

zoonotic disease

sometimes aggressive and could bit the keeper

They destruct the floor for seeking of moisture and makes the place dirty

Self-Check 4	Written Test

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Write common problems of during rising swine (15) points

Note: Satisfactory rating – 15 points Unsatisfactory - below 15 points

You can ask you teacher copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

OPERATION SHEET 1	Swine Feeding

Swine Feeding

PROCEDURE of Swine Feeding

1. Put on PPE.
2. Dry sows and gilts give 2.5/kg day of sow and weaner meal.
3. Give extra 1kg/day one week before serving gilts and sows and one week after service.
4. Give lactating sows 2.5 kg/day of sow and weaner meal for maintenance and 0.25 kg/day extra for each piglet being suckled.
5. Give boars 2.0 kg/day. If the boar is regularly used give it 2.5 Kg.
6. Piglets: Give creep pellets i.e. 0.5 - 1.00 kg/day from day 7 up to weaning time(21 days) per piglet. The feed should be mixed with sow and weaner meal the last one week before weaning.
7. Feeding of Growing and Finishing pigs: - Pigs weaned at 3 - 5 weeks of 11 - 13 kg body weight should continue being fed on the starter diet until they reach 18 kg live weight.
8. Pigs weaned at 7 weeks or older may be switched gradually to sow and weaner diet.
9. For growing or finishing pigs all ration changes should be made gradually.

OPERATION SHEET # 2	Castrating pig

Castrating pig

PROCEDURE of CASTRATING PIG

1. Put on PPE.

2. Castrate nursing swine as follows:

a. Reach down and place palm of your hand on swine's back or side while standing outside farrowing crate.

b. Remove swine from farrowing crate by gently closing your thumbs and fingers around body of swine and lift out of crate.

c. Take swine to work area.

d. Place swine in mechanical swine holder or grasp swine's rear legs, both in one hand, with scrotal area easily accessible. (An assistant may be needed for larger swine.)

e. Scrub scrotum and surrounding area with a cotton swab soaked in disinfectant.

f. Apply light upward pressure to scrotal area.

g. Inspect outline of testicles and make sure that there are two and that they are similar in size.

h. Identify swine with abnormalities and contact supervisor or veterinarian.

Take knife, scalpel or side cutters in your dominant hand while holding scrotal skin tight with other hand.

j. Make an incision as long as testicle centered along long axis of each.

CASTRATE BOARS

k. Cut through skin and membrane around testicle. (It should protrude into incision.)

l. Pull or squeeze testicle through incision and enlarge incision slightly if needed.

m. Grasp testicle, pull gently to extend cord and sever cord.

n. Repeat steps (j) through (m) for other testicle.

o. Apply antiseptic to incisions.

p. Return swine to farrowing crate.

q. Check for excessive bleeding or tissue or intestine appearing through incision for next few hours.

1. For excessive bleeding, apply blood stopping agent to the wound and leave isolated until bleeding stops.

2. Contact supervisor or veterinarian if protruding intestine is observed.

3. Remove any protruding non intestinal excess tissue.

3. Castrate older male swine.

a. Restrain swine by a hog snare or by positioning on its side.

b. Follow steps (d) through (o) and observe and treat as described in steps (q) 1-3.

c. Return to clean housing.

OPERATION SHEET #3	Teeth trimming

Teeth trimming

PROCEDURE of Teeth trimming

1. Put on PPE.
2. Teeth trimming of nursing swine as follows:.
    a. Remove organic material (e.g., feces, feed, etc.).
    b. Use high-pressure washer to thoroughly clean area and equipment.
3. Check equipment and flooring for needed make repairs as needed.
4. Apply disinfectant to teeth trimmer equipment according repairs and to manufacturers' directions.
5. hold the pig let properly
6. two person are required , the one that holding the pig let and open the mouth properly and other one will catch the incisor (fox teeth) and pull out by teeth trimmer
7. vitamin K should provide to avoid excess bleeding

N. B. this operation is done within 2-3 days if the sow fill irritation incase of pig le suckling

OPERATION SHEET# 4	Tail clipping

Tail clipping

PROCEDURE of Tail clipping

1. Put on PPE.
2. Tail clipping of nursing swine as follows:
    a. Remove organic material (e.g., feces, feed, etc.).
    b. Use high-pressure washer to thoroughly clean area and equipment.
3. Assemble all equipment and materials for needed make repairs as needed.
4. Apply disinfectant to tail clipping equipment according repairs and to manufacturers' directions.
5. Hold the pig let properly
6. The tail is trimmed to about 4 cm properly within 1 days of ages of pig let
7. Use Vitamin k to avoid over bleeding

N.B. this activates will be done if the sow is get irritated during lactating

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within --- hour.

Task 1- swine feeding

Task 2- castration

Task 3- teeth trimming

Task 4- tail clipping

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Rougoor, C.W., Dijkhuisen, A.A., Huirne, R.B.M. & Marsh W.E. 1996. Impact of different approaches to calculate the economics of disease in pig farming. *Preventive Veterinary Medicine*,
26: 315–328.

Instruction Sheet 1	Learning Guide - 18

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics :

- ✓ *H*andle w*aste material*
- ✓ Handle and transport Materials, tools and equipment
- ✓ Maintain a clean and safe work site

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to :

- ✓ Handle *waste material* produced during work according to supervisor instructions
- ✓ Handle and transport materials, tools and equipment according to supervisor instructions and enterprise guidelines.
- ✓ Maintain clean and safe work site while working

Learning Instructions:

10. Read the specific objectives of this Learning Guide.
11. Follow the instructions described below 3 to 4.
12. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 ,Sheet 4 ,Sheet 5 and Sheet 6.
13. Accomplish the “Self-check 1, Self-check 2, Self-check 3, Self-check 4, Self-check 5 and Self-check 6” **in page -4, 7, 8 and 9** respectively.

Information Sheet-1	Handling Waste material accordingly

waste material collection method

- Ensure waste material falls through slats in floor and collects in pit below.
- Collect semi-solid and liquid waste material in lagoon.
- Place waste material in container (e.g. store,) that will prevent leakage.
- Pile waste material (manure pack) on concrete pad or on ground away from water Supply to avoid contamination.
- Use of drums or storage water tanks during cleaning operation
    - **Feed and water trough modification;**
- Use of mechanical/automatic feeder to reduce food wastage
    - **Drying of Manure**
- This involves the removal of solid hog wastes (manure), drying and applying to farms/gardens as fertilizer.

Waste Recycling/Reuse

- Refers to the utilization of hog waste for other purposes e.g. fertilizer (solid), watering of plants (liquid), etc.

Waste disposal

- Refers to the final disposition of solid and liquid hog farm wastes.

Self-Check 1	Written Test

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. What is the difference between waste Recycling/Reusing and Waste disposal? (8 points)
2. write waste material collection methods ? (8 point)

Note: Satisfactory rating - 8 points Unsatisfactory - below 16 points

You can ask you teacher copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Handle and transport Materials, tools and equipment

- Whenever we are going to our work area we have to handle and transport our equipment materials and tools safely. And also after completing our task we have to take them back to their place (store) safely without any damage on the equipment and ourselves by cleaning and maintaining if necessary.
- materials should handle in a good manner
- put the same material on the same area don't mix with other
- transport carefully for fragile and toxic material

Self-Check 2	*Written Test*

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. why we handle materials and equipments properly ? (8 points)
2. what is good transportation mean ? (8 point)

Note: Satisfactory rating - 8 points Unsatisfactory - below 16 points

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Maintaining Clean and safe work site

- The living area is cleaned and disinfected, eliminating waste, dirt and germs.
- Put on PPE when entering or prior to entering building.
- Remove as much debris as possible by scraping, sweeping and/or scooping.
- Clean area with pressure washer, using safety-training guidelines.
- Rewash areas that do not seem adequately clean.

Self-Check 3	*Written Test*

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. what are the requirements of safe work site? (8 point)

Note: Satisfactory rating - points8 Unsatisfactory - below 8 points

Information Sheet-4	Returning and disposing Materials

Remove waste from living area and dispose of according to facility policy and procedures (Note: Toxic gases such as carbon dioxide, hydrogen sulfide and ammonia may build up to lethal levels. Never enter storage tank unless absolutely necessary and then with professional assistance on site.) Utilize PPE. Select equipment appropriate for size and type of area to be cleaned.

Review safety procedures with supervisor and follow all safety guidelines. Provide maximum ventilation when store perishable materials. Other facilities and equipment require more frequent inspection. Enter storage tank only when absolutely necessary and only with adequate safety training, Precautions, and equipment, and professional assistance on site. Wear self-contained breathing equipment and be certified in its use.

Self-Check 4	*Written Test*

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. write methods of disposing material (8)
2. write same toxic gases ? (8 point)

Note: Satisfactory rating - 8 points Unsatisfactory - below 16 points

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-5	Cleaning ,maintaining ,storing tools and equipment

After accomplishment of a give tasks the necessary material, tools and equipment should be cleaning, maintaining and storing properly for the next activity · Weighing pigs and returning the weighing equipment to the storage area (up a muddy slope, an arduous task).

Self-Check 5	*Written Test*

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. What is the purpose of cleaning? (8 points)

Note: Satisfactory rating - 8 points **Unsatisfactory - below 8 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-6	Record and Reporting Work outcomes

The prime objective of a pig farmer is to manage his farm in such a way that it is a continuing source of income. In order to achieve this he needs to implement a set of good management measures and technical skills through good record keeping and administration. This makes it possible to control and monitor production and reproduction activities and to identify the results both technical and financial.

records of swine includes the following

- Sow identification
- ❖ Reproduction Records

  Date of first Oestrus/heat, Breeding dates, Farrowing dates, Number of pigs born alive and number born dead, Average birth weight (comments on evenness of litter should be included) ,Abnormalities
- Weaning Records

  Weaning date, weaning weight
- Litter management records

  Dates of routine management practices e.g. Iron treatment, castration
- Health Records

Self-Check 6	*Written Test*

Directions: Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. What is the aim of recordings? (8 points)
2. write what to be recorded? (8 point)

Note: Satisfactory rating - 8 points Unsatisfactory - below 16 points

You can ask you teacher copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions