

# **Artificial Insemination**

## **Level-I**

# **Learning Guide #23**

**Unit of Competence: Support Handling of Hide  
and Skin**

**Module Title     Supporting Handling of Hide and  
Skin**

**LG Code:            AGR ATI1 M07 0919    LO4-LG-23**

**TTLM Code:        AGR ATI1 TTLM 0919 v1**

**LO 04:    Clean up on completion**

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

- ✓ Storing Preserved hides and skin until transport
- ✓ Return materials to store and disposing based instruction
- ✓ Cleaning, Maintaining and storing tools and equipments
- ✓ Disposing all waste Products

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 –**

- ✓ Store Preserved hides and skin until transport
- ✓ Return materials to store and disposing based instruction
- ✓ Clean, Maintain and store tools and equipments
- ✓ Dispose all waste Products

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
4. Accomplish the “Self-check 1, Self-check t 2, Self-check 3 and Self-check 4” **in page -6, 9, 12 and 14** respectively.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet 1, Operation Sheet 2 and Operation Sheet 3 ” **in page -15**.
6. Do the “LAP test” **in page – 16** (if you are ready).

### 1.1. Preservation of Hides and Skins

The basic idea of curing or preservation is to keep the hides and skins in good condition without putrefaction until they are processed in tanneries. Being proteinous in nature, hides and skins are liable to attacks by bacteria or mould which leads to putrefaction especially in hot and humid conditions. Dust, dirt, soil, water, blood, fodder etc. act as continuous source of infection apart from the transmission of micro-organisms by air, insect, or contact with diseased animals. On the weight of a hide or skin, it will have about 60% natural moisture, and it is very ideal condition for bacteria to thrive.

The proteinous matter is hydrolyzed by bacteria leading to loss of hide substance resulting in poor quality leather. By curing, we are creating conditions whereby the bacteria is made ineffective as we need very drastic conditions for destroying the bacteria. The type of curing depends very much on the weather conditions, availability of materials, location of tanneries, and so on.

When transporting the raw hides or skins to curing yard, they should be sent in closed carts without exposing to sun and without rolling them. In the abattoir itself, the hides and skins should not be exposed to sun before being preserved.

In drying, it can be with frame or without frame, in the sun or shade. In salting, it is wet salting or dry salting or brining. There are more recent techniques based on scientific developments but still not universally applied.

The important factors to be taken into account while deciding the type of preservation to be adopted are:-

- a) Point of application of the treatment and for how long preservation is required.
- b) Methods of application and any extra equipment and handling involved.

c) The cost-effectiveness of the treatment for the period of preservation likely to be needed.

The effect of salt and other chemicals in causing pollution also has to be taken into accounts. If the raw material is to be exported, the preservation must be long term in its effect whereas if the raw material is for local processing with short distance transport for the point of origin, short-term protection is adequate. If a tannery receives its raw stock in smaller quantities from several small abattoirs delivering over a period, longer-term protection is necessary.

## **1.2. Storage**

When hides are not to be dispatched for sale within a few days, they should be treated with an insecticide.

Insecticides can be of two kinds, liquids such as solutions of arsenic in water, or powders such as D.D.T., gammexane, pyrethrum, derris or naphthalene, etc.

Solutions of arsenic for this purpose are similar to those used in dipping tanks, and if no other means of treating them are available, the hides may be dipped in the dipping tank. Although arsenication is generally used for dry hides, it is better to use it for the uncured hides. Great care must be taken in the use of arsenic, since it is a deadly poison and must always be kept under lock and key.

Other commercial dips are preferable and should be diluted in accordance with the instructions for preparing normal strength dip solution (often 1 : 300). Sodium silicofluoride may be used as a spray in the proportion of 0.5 kg to 10 liters of water, if it is available.

If powders such as gammexane are used, they should be mixed with an inert powder such as diatomite using a machine to mix them. If pyrethrum is grown locally, it can be dried and ground into a powder, and dusted over hides and floors, etc.

During the wet season, hides stored for a long time should be taken out into the sun occasionally, to prevent the formation of moulds, which are not affected by insecticidal dips or powders. Baling prior to export can be carried out solely by hand, but there is a risk that the ties may not remain secure with much handling.

As already indicated, in connection with the use of plastic binder tape, several types of power-operated and manual presses, as well as devices for secure application of binding material, are available. Particularly in climates with low relative humidities, these mechanical aids are advantageous because they can be used to exert just sufficient pressure to enable firm and tidy bales to be produced without cracking along the folds. They are made in a range of sizes, capacities, powers and styles, to meet the nature of the work for which they are intended. One such press is fitted with a stopping device which automatically shuts off the pressure when the bale is compressed to the required extent and holds it at that point while the fastening material is applied.

### **1.3. Transporting hide and skin**

In tropical & sub tropical developing countries various forms of transportation may be employed to carry hide & skin from point of collection & storage ( after drying or curing have been carried out ) either to the large market or for export.

Motor transport of different types & animal drawn transport may be involved even boats may also employed in some countries, particularly when large vehicles are used care must be taken that the goods are tied in bundles & are not loose also that the bundle are stowed securely so that there is no danger of damage being caused by scraping or other frictional movement

<b>Self-Check -1</b>	<b>Written Test</b>
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**Directions: Match the following terms correctly**

- 1. Define Basic ideas of preservation.(2 Points)
- 2. Explain the importance of preserving Hides and skin with insect sides. .(2 Points)

**Note: Satisfactory rating 4 points**

**Unsatisfactory -below 4 points**

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = _____
Rating: _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

### **1.1. Cleaning, maintaining and returning materials to stores**

After using of all the material the material should be cleaned and inspect for defects and put back to the store.

The first step is, of course, to have a “good store” for your machinery when it's not working. But “it's not enough to store into the shed, shut it down, and leave it.” First thing is to make sure a machine is in good repair before you put it away, after that, it's pretty much a matter of following three simple rules:

- ✓ Put it away clean
- ✓ Put it away dry and
- ✓ Put it away lubricated.

All three of these rules are aimed at keeping rust producing moisture away from bearings and other vital parts.

### **1.2. Disposing of waste product.**

Wastes are unwanted material or substance produced by human activity, which is usually referred to as rubbish, trash, garbage or junk. Wastes can be considered, as those materials no longer required by an individual, institution or industry. Wastes are thus regarded as by-products or end products of the production and consumption process respectively.

### **1.3. Salt residues and Offal of hide and skin**

The concentrated liquor emanating from piles of salted hides is very rich in chloride and nitrogen compounds. A special problem is the spent brine disposal. Legislation in many countries does not allow brine discharge into the sewer, it must be disposed of as waste, which is very costly. The reuse potential is rather limited mainly due to risks associated with the increase of halophilic bacteria. Disposal of the excess solid salt

used is an important environmental problem as well. The thermic treatment used prior to recycling is known but very expensive. Disposal on special depositing sites is necessary. The problem of salinity is especially pronounced in arid areas, affecting the quality of water used for irrigation and livestock watering.



**Self-Check -2**

**Written Test**

**Directions: Match the following terms correctly**

1. What are the three simple rules in keeping clean work place and machines.(4 Points)

**Note: Satisfactory rating 4 points**

**Unsatisfactory -below 4 points**

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

### 3.1. Clean, maintain, dispose and store tools and equipment

**Maintaining** is repairing of the broken or damaged material or it is a way of giving an additional life or extending the serviceability of material

**Cleaning** is the processes of removing dirt, grime, scraps and grease from all Surfaces, equipment, etc

**Safety** refers to the condition of workers and animals being free from danger, harm, or risk

- Before and after doing skin and hide preservation care must be taken for not to damage or break any materials, tools, and equipment.
- The importance of Clean, Maintain and store tools and equipments are
  - To clean work
  - To save the work site environment
  - It protect from chemical, accidental, body contact hazards
  - It increases the duration of the materials, tools and equipments
  - For future use

After maintaining and cleaning, return and store all the materials and equipments properly in their proper places

**Self-Check -3**

**Written Test**

**Directions: Match the following terms correctly**

1. Define the term maintaining, cleaning and safety.(4 Points)

**Note: Satisfactory rating 4 points**

**Unsatisfactory -below 4 points**

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

#### **4. Disposing all Waste products**

Waste is “the unwanted remains, residues or by products which are no longer wanted by the owner”. Waste is assumed to be valueless to the owner. Slaughterhouse and Hides and Skins wastes are associated with discharge of highly organic matter. These wastes if directly disposed of in the land create aesthetically objectionable Public Health and Environmental pollution.

##### **Composition of Slaughter house and Hides and Skins waste.**

- ✓ Blood
- ✓ Rumen ingesta
- ✓ Horns
- ✓ Hooves
- ✓ Bones
- ✓ Hides and Skins fleshing
- ✓ Hide and skins splits and trimmings
- ✓ Condemned meat
- ✓ Gall bladder
- ✓ Foetus etc.

##### **4.1. Characteristics of Slaughterhouse waste**

Slaughterhouse effluents are considered detrimental worldwide due to their complex composition of fats, proteins, and fibres, as well as the presence of organics, nutrients, pathogenic and non-pathogenic microorganisms, detergents and disinfectants used for cleaning activities, and pharmaceuticals for veterinary purposes. Therefore, the treatment and disposal of wastewater from slaughterhouses and meat processing plants are an economic and public health necessity.

**Self-Check -4**

**Written Test**

**Directions: Match the following terms correctly**

1. List the Composition of Slaughter house and Hides and Skins waste.(4 Points)

**Note: Satisfactory rating 4 points**

**Unsatisfactory -below 4 points**

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

<b>Information sheet 5</b>	<b>Reporting Work out comes to supervisor</b>
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The hides and skins produced in Africa generally carry a poor image in the global markets because of various constraints found throughout the production chain starting with animal husbandry conditions, lack of slaughter facilities, inappropriate flaying, and poor handling and preservation of these raw materials

**Quality:** A measure of excellence or a state of being free from defects, deficiencies, and significant variations, brought about by the strict and consistent adherence to measurable and verifiable standards to achieve uniformity of output that satisfies specific customer or user requirements.

**Flay cuts:** Damage caused by careless use of a knife during flaying, sometimes cutting through the skin.

**Grain Break:** Any hide having a defect on the hair side causing the grain to be broken one inch or more in length or diameter, or having two or more such defective spots, which aggregate in measurement one inch or more in length or diameter. This includes sores, rubs, scuffs and deep scratches.

**Slaughter defects:** refer to cuts or holes and gorges to the hides and skins making them unfit for the subsequent use up the value chain mainly due to poor slaughtering facilities, inadequate flaying skills and motivation and poor illumination during slaughter

**Flay cuts:** Damage caused by careless use of a knife during flaying, sometimes cutting through the skin.

Any defects that results for rejection of hides and skin on the national and global market should be reported to immediate supervisors before preservation takes places accordingly. Reporting may vary from industry to industry or their procedure may vary based on their capacity in the market.

**Self-Check -5**

**Written Test**

**Directions: Match the following terms correctly**

1. Define the term quality.(2 Points)
2. Define Slaughter defects. (2 Points)

**Note: Satisfactory rating 4 points**

**Unsatisfactory -below 4 points**

You can ask you teacher for the copy of the correct answers.

**Answer Sheet**

Score = \_\_\_\_\_

Rating: \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

## REFERENCES

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