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# **EXPERIMENT 5      PRESERVATION OF HIDE AND SKIN**

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## **5.0 OBJECTIVES**

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After going through this exercise, you will be able to:

- apply the methods of dry salting, wet salting and brine curing; and
- preserve hide and skin for leather manufacture.

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## **5.1 INTRODUCTION**

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Hides and skins constitute about 4-11% of the live weight of the animal. They are the most valuable by-product. They are processed into leather by tanning while trimmings are used for making glue, artifacts or feed supplement. The hides and skins are obtained from two sources i.e., slaughtered animals and fallen animals. In India, the large animals contribute 25% of the slaughtered stock while the fallen animals contribute 75% of the skins and hides obtain. The trend is almost reverse in small animal skins, where in slaughter stock contributing 80% and fallen animals contributing 20% of the skins.

Hides and skins obtained from slaughtered animals are superior to that obtained from fallen animals. To obtain good quality raw material hides and skins are to be flayed immediately after death or slaughter. Undue delay in flaying leads decomposition resulting in inferior quality of hides and skins. In this experiment, you will learn how to preserve the hide and skins for good quality leather preparation.

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## **5.2 EXPERIMENT**

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### **5.2.1 Principle**

The principle involved in the preservation of hide and skin is creating such environment that bacterial flora cannot multiply. This can be achieved by reducing the moisture content of the hide and skin to a point where bacterial growth stops i.e., by applying the process of curing and drying.

### **5.2.2 Requirements**

- Raw hide or skin
- Salt
- Knives
- Curing vats

## 5.2.3 Procedure

### Care of hides and skins

Immediately after flaying the skins should be opened and spread out on a concrete floor to cool down. Then the skins and hides are washed with cold potable water to remove adhering blood, dung and intestinal matter using long handled brush. After washing the skins and hides are subjected to fleshing in which loose subcutaneous tissue, meat and fat left on flesh side is removed. The fleshing is performed with utmost care to avoid any possible cutting damage to the hide. All sharp irregular flaps on the edge of the fleshed hide should be removed before they are subjected to preservation.

### Preservation of Hides and Skins

Fresh hides and skins contain approximately 62% moisture and 38% dry matter and is a favorable medium for bacterial growth. If proper measures are not taken to check the multiplication of bacteria may lead to decay or spoilage. The first sign of spoilage or decay is loosing of hair in patches or all over the skin depending upon the extent of damage done by the decaying process. In addition, dark patches on the flesh side and bad odour is also noticed. The most important method for preventing spoilage is curing. Curing is performed by

- Wet salting (green salting)
- Dry salting
- Brine curing.

#### *i) Preservation of hide and skins by Wet Salting*

Freshly flayed hides and skins are spread on a sloping concrete platform and cooled to room temperature. Salt is spread/sprinkled freely on the flesh side and left over night. Next morning, the first application of salt is removed and a fresh layer of salt is applied in such a way that the thicker portion of the hide receives more salt than the thinner portion or side.

Then second hide is spread on the first hide with hair side/grain side down and same procedure is repeated. The hides or skins are left in pile until fully cured. Piles should be examined and tilted/over hauled periodically to prevent development of heat inside. As such heat developed affects the quality to a greater extent.

Rock salt or sea-salt can be used for wet drying of hide and skin. Following salt mixture may be used:

- i) Salt (100 parts) + Napthalene (2 parts) +  $\text{Na}_2\text{CO}_3$  (2 parts)
- ii) Salt (100 parts) + Napthalene (1 part) + Boric acid (1 part)

#### *ii) Preservation of hide and skins by Dry Salting*

Dry salting is used with the objective to reduce the weight of hides and skins for transport and to increase the keeping quality. In dry salting, the hides and skins are salted and latter dried. This is a convenient way of preventing putrefaction. This method is recommended for small hide producers or village flayers, carrying off from main hide market or far off from tanneries.

The hides and skins are washed and trimmed off the irregular appendages. The skins are then applied with liberal quantity of salt on the flesh side. Khari salt can be used for this purpose. Then the salted hides are dried under sun. Complete drying takes 2-3 days. During hot season with temperature exceeding 115°F (46°C) drying should be done under shade. Drying in high temperature will badly influence the quality of leather after tanning.

***iii) Preservation of hide and skins by brine curing***

Brine curing is also called as wet curing or immersion curing. Wet salting can be carried out by immersing the clean fleshed and trimmed hides in a saturated salt solution for a maximum period of 1-2 weeks. Pots, vats or pits of 4 feet deep can be used for this purpose. To maintain the saturation of the brine, more and more salt is added. Hides and skins are turned from top to bottom after overnight soaking. After curing for 1-2 weeks they are drained and packed in layers.

Hide absorbs salt and loses moisture to the extent that they are unfavorable to the enzymes present in the hides and subsequent bacterial action. These brine cured hides can be stored without addition of salt separately. Under normal conditions they remain in good condition for long time. Experience showed that brine cured hides is superior to hides cured by conventional wet salting or other methods. An important thing in using curing is that the preservative action of salt can be increased by mixing about 2-3% sodium carbonate and 1% of naphthalene of the salt weight.