



National Diploma Plant/Animal Marketing Agri-Products

Handout 17

Quality of Harvesting Animal Products

QUALITY OF THE HARVESTED ANIMAL PRODUCTS

All food manufacturers have a responsibility to ensure that quality assurance systems are in place to provide the final consumer with a product that is safe and wholesome to eat (Axtell and Fellows, 2003). As a supervisor or manager in a production unit or processing plant, it is your responsibility to ensure that the product leaving your facility is of the highest quality to be able to satisfy the discerning demands of the consumer. Any breach in quality will have serious consequences for your establishment. These consequences may include loss of sales, loss of customers, cost of product recalls, and costs of wasted transport costs, law suits or fines. Thus, quality control and continuous and dedicated attention to all aspects of product quality should be a matter that is discussed with superiors on a daily basis.

The impact of various procedures, systems and methodologies on the quality of animal products is evaluated

Quality control includes a wide range of and scope of activities to be carried out regularly. The ultimate task of quality control is to provide you, who are responsible for quality, with information such as the areas of highest risk, the source of a likely hazard, the quality criteria and standards that should be maintained, and methods to prevent the hazard from reducing this quality objective.

Early warning about failures and inability to meet quality standards at any stage of the production or value-adding process will help you to correct the situation in time and decrease losses caused by irrelevant quality of the end product.

The best way to manage the quality of products is to establish a system wherein you can monitor and control hazards. The concept is to ensure the most efficient and effective sanitary control. Systems were designed to prevent problems by making sure controls are applied at any point in food production systems where critical situations could occur. These systems included TQM, QES, EUREGAP, HACCP, etc.

First of all, you should identify the threats that could damage animal products for human consumption. These threats can usually be grouped as follows:

- **Biological threats**

Living organisms that make products unsafe for consumption. It can be introduced during processing by people involved in processing, from environment in which processing occurs or from other ingredients in the product.

- **Chemical threats**
 - Occurs naturally in products.
 - Added during processing.
 - Added to food during growth, harvesting, storage, processing, etc.
- **Physical threats**
 - Foreign material (piece of equipment).
 - Contaminated raw materials.
 - Poorly designed facilities and equipment.
 - Contaminated packaging.
- **After you had identified the threats you need to find the control points:**
 - You should find points in the process where preventive measures could be applied.
 - Some points where control can be applied include:
 - Inspections for contamination before shearing/ slaughter
 - Chilling to temperatures that minimise microbial growth
 - Slaughter procedures
 - Processing procedures

After you had identified these critical points, you need to find ways to control and maintain these points.

How to monitor these procedures

- Monitor that the procedure is carried out routinely and create a record for future use.
- Monitoring procedures include observations
- Make sure that the procedure is efficient and accurate
- Provide rapid feedback

To set up a quality control system for your production or processing facility a risk assessment should be carried out for each of the products that are produced (Axtell and Fellows, 2003). It should be remembered though that a manufacturer's responsibility does not end when the product leaves the production unit. Poor control in the transport and retail chain can result in quality problems that may cause consumer complaints. In law, the food manufacturer may be able to claim

that illness due to eating a product is the result of the retailer failing to keep the food at the correct temperature or the consumer using the product after its use-by date.

However, any complaint will damage the name and image of the producer and may place the future of the enterprise at risk.

ENSURE ANIMAL PRODUCT QUALITY

To be able to implement and maintain a quality control system in an animal production unit or a processing unit requires an intimate knowledge of the various steps of the process through which the product is produced or manufactured.

Without knowledge of every step in the production process it will be impossible to identify where risks to quality may occur or how those risks can be prevented or reduced.

COMPLETE KNOWLEDGE OF THE ANIMAL PRODUCT HARVESTING AND PROCESSING SYSTEM IS DEMONSTRATED

The following section demonstrates the knowledge regarding the correct flaying of a carcass:

The factors which determine the suitability of a tanned hide or skin do not start with the curing process, but with the removal of the hide or skin from the carcass. Once it has been removed from the carcass, the handling it receives immediately thereafter is of vital importance for the retention of quality. The final shape of the hide or skin is more important than most people realise. The value of the processed hide or skin depends on the way in which the cutting lines are made on the carcass.

The preparation begins with flaying or the removal of the hide or skin from the animal after slaughtering, followed by curing of the hide or skin by the addition of salt to dry and preserve the material until it can be processed further into leather. By carefully following the various preparation steps the value of the leather can be conserved. The correct preparation steps are discussed below.

- **Slaughtering and flaying**

Slaughtering should be done early in the morning or late in the afternoon when the temperature is low and the air is cool to prevent bacterial growth on the hide or skin. It is also important to bleed the animal well after slaughter, otherwise the blood stays behind in the skin and the blood veins will show in the grain surface of the leather. This can also happen when dead or very old animals are slaughtered.

Poor handling of carcasses after slaughtering can also damage the skin.

- **Ripping lines**

These are the cutting lines along which the skin is to be removed from the carcass



When the wrong lines are used, the value of the skin is reduced. The right ripping lines are shown in the figure to the right.

- **Hints on removing the skin**

Blood should be drained from the carcass taking care that the minimum amount of blood contaminates the skin or comes into contact with the hide or the skin.

This will discourage bacterial spoilage. Use a sharp flaying knife with a rounded blade so as to avoid bad flay cuts on the hide or skin. Do not use the flaying knife where it is possible to simply pull the skin from the carcass. However, pulling too hard will result in “butchers strain” marks on the leather.

Remove the hide or skin from the animal immediately after slaughter and allow the hide or skin to cool off in a clean place out of the sun and off the ground to prevent bacterial contamination.

Blood and dirt on hides and skins can be washed off with clean cold water.

- **Curing**

The aim of curing hides and skins is to make them resistant to bacterial attack. They can then be transported or stored until the tanner is able to process them. There are three methods commonly used for salt curing hides or skins, which are as follows.

- Wet- salting

Cover the flesh side of the hide or skin with salt and stack the skins in a pile. The salt takes up the water inside the hide or skin and draws off a mixture of blood and water. Most bacteria will not increase in numbers in very salty water.

- Dry salting

The salted hide or skin is hung in the shade to dry or dried in hot air in tunnels where the climate is wet. Dry salting is usually carried out in places where salt can be bought, but storage and transporting of wet salted hides is difficult. The method of application is the same as for wet salting. After the minimum treatment period of 48 hrs where the hides or skin have been in contact with the salt, the loose salt is shaken off and the hides or skins are then dried by hanging symmetrically along the line of the backbone over horizontal poles with diameters not less than 7 cm. The hides or skins are placed initially with the flesh side uppermost on the poles for drying and then turned over with the hair side uppermost to complete the drying on the wool/hair side.

- Air-drying

If it is difficult to get salt for curing, the skins can be dried by air, but only in dry climates. The skins should be dried in the shade, with sufficient air movement otherwise the outside of the skin will dry too fast, leaving the inside wet and the skin will rot on the inside. They can be hung over poles as described for dry salting or the skins can be stretched with strings from all sides in the frame to let the skin dry uniformly, as shown in the figure to the right.

Factors to be kept in mind during the removal of hides

- Hygienic, clean conditions will help to maintain the quality of the hides, skins and wool.
- Contact between the meat and the hide or skin must be prevented at all costs.
- Use a flaying knife and handle it with care because hides and skins can be badly damaged by cuts and flaying marks, and this lowers their value.
- The hide or skin must be removed from the carcass immediately after slaughter while it is still warm, as this makes its removal easier. As little blood as possible should come into contact with the hide or skin.
- Do not sacrifice the value of the hide or skin for the sake of the carcass. If correct flaying methods are used, neither needs to be damaged.

- Do not use a flaying knife if it is possible to pull the hide or skin off the carcass, especially in the case of sheep where the skin can be eased off by hand.
- All cuts to the hide or skin must be made from the inside to the outside to prevent contamination.
- Contamination of the carcass because of dirty hands, hooks, rollers and protective clothing must be prevented.
- To prevent contamination, lactating udders must be cut off as soon as possible and placed in a container.