

Lecture 10

MEAT HANDLING

Pre-Slaughter Handling and Stunning of Cattle

There is an increasing demand for animals to be reared, handled, transported and slaughtered using humane practices all over the world. In the developed countries, animal handlers practice good husbandry, having a caring attitude towards the animals and their welfare. In Nigeria, the contrary obtains.

Getting animals from farm to abattoir forms the first link in the chain of meat production and one which is both important and to some degree contentious. It is important because it can influence carcass and lean meat quality and contentious because the process of handling and transportation provide many opportunities for the animal welfare to be compromised.

Appropriate handling of cattle can result in improved productivity of live animal, in higher quality of slaughter livestock, carcasses and cuts and in greater profitability in the production. Stress in its many forms e.g. deprivation of water or food, rough handling, exhaustion due to transporting over long distances, mixing of animals reared separately resulting in fighting is unacceptable and should be avoided because of its deleterious effects on meat quality. However in Nigeria, animals trek over long distances without food and water and when transported in trailers, they are overcrowded. The most serious consequences of stress is death which is usually due to poorly ventilated overcrowded trucks.

Animals should be transported early in the morning or late at night during hot weather. From the loading on the farm, to the stunning pen, animals must be treated kindly and the Lorries, lairages and equipment for livestock handling must be designed to facilitate humane treatment. Stress immediately prior to slaughter (fighting or rough handling in the lairage) causes stored glycogen (sugar) to be released into the blood stream. After slaughter this is broken down in the muscles producing lactic acid. This high level of acidity causes a partial breakdown of the muscle structure causing meat to be pale. Long term stress before slaughter such as a prolonged period of fighting during transport and or lairage leads to exhaustion. The sugars are used up so that less is available to be broken down and less lactic acid is produced. The reduced acidity leads to an abnormal muscle condition known as dark cutting in beef. Such meat has a high pH and spoils quickly.

During transport and lairage, an electric goad should be used to encourage movement rather than a stick or tail twisting, not only to avoid stress but also to prevent carcass bruising. To avoid fighting animals not reared together must not be mixed during transport and lairage. Load and unload using shallow stepped ramps to avoid stumbles. Trucks should neither be over nor under loaded. Overloading causes stress and bruising due to crushing. Under loading results in animals being thrown around and falling more than necessary. Drivers should not approach corners at excessive speed. Plenty of water should be available.

Fasting before slaughter reduces the volume of gut content and hence bacteria and therefore reduces the risk of contamination of carcass during dressing. It is usually sufficient for animals to receive their last feed on the day before slaughter.

Steps Involved in beef slaughtering in Nigeria

Lairage= resting of animals before slaughtering

Ante- mortem inspection= inspecting the animals for any disease

Reject diseased animal for destruction

Stunning

Hoisting= holding the animal upside down for easy drain of blood

Sticking= killing the animal by cutting the jugular vein

Bleeding= Allowing the blood to drain and collection of blood

Flaying= Removal of skin

Opening= Partial skinning of the abdomen

Evisceration= Removal of all the thoracic and abdominal visceral organ

Splitting= Cutting the animal into two longitudinally

Post mortem inspection

Washing

Chilling