

**ANTEMORTEM AND POSTMORTEM
INSPECTION OF FOOD ANIMALS**

The objectives of meat inspection programme are:

1. To ensure that only apparently **healthy, physiologically normal animals** are slaughtered for human consumption and that abnormal animals are separated and dealt with accordingly.
2. Safe from **harmful chemical and drug residues**, and capable of being converted into wholesome product for the consumer.
3. **Notifiable diseases may be detected at ante mortem inspection (e.g., Anthrax, FMD. TB, Brucellosis.... cet.)**

These objectives are achieved by:

1. Antemortem Inspection.
2. Postmortem inspection procedures.
3. Hygienic dressing with minimum contamination.
- 4- Whenever appropriate the Hazard Analysis Critical Control Point (HACCP) principles should be used.

Antemortem Inspection

The term ante-mortem means “before death.”

- Ante-mortem inspection is the inspection of live animals before they are slaughtered.

- In any abattoir, **all livestock** presented for slaughter must receive ante-mortem inspection.

Some of the *major objectives* of antemortem inspection are as follows:

- to screen all animals destined to slaughter.
- to ensure that animals are properly rested and that proper clinical information, which will assist in the disease diagnosis and judgement, is obtained.
- to reduce contamination on the killing floor by separating the dirty animals and condemning the diseased animals if required by regulation.
- to ensure that injured animals or those with pain and suffering receive emergency slaughter and that animals are treated humanely.
- to identify reportable animal diseases to prevent killing floor contamination.
- to identify sick animals and those treated with antibiotics, chemotherapeutic agents, insecticides and pesticides.
- to require and ensure the cleaning and disinfection of trucks used to transport livestock.
- Both sides of an animal should be examined at rest and in motion.
- Antemortem examination should be done within 24 hours of slaughter and repeated if slaughter has been delayed over a day.
- Animals affected with extensive bruising or fractures require emergency slaughter. Animals showing clinical signs of disease should be held for veterinary examination and judgement. They are treated as “suspects” and should be segregated from the healthy

animals. The disease and management history should be recorded and reported on an *A/M* inspection card. Other information should include:

- Owner's name.
- The number of animals in the lot and arrival time.
- Species and sex of the animal.
- The time and date of antemortem inspection.
- Clinical signs and body temperature if relevant.
- Reason why the animal was held.
- Signature of inspector.

Antemortem inspection should be carried out in adequate lighting where the animals can be observed both collectively and individually at rest and motion. The general behaviour of animals should be observed, as well as their nutritional status, cleanliness, signs of diseases and abnormalities. Some of the abnormalities which are checked on antemortem examination include:

- Abnormalities in respiration.
- Abnormalities in behavior.
- Abnormalities in gait.
- Abnormalities in posture.
- Abnormalities in structure and conformation.
- Abnormal discharges or protrusions from body openings.
- Abnormal colour.
- Abnormal odour.

Abnormalities in respiration commonly refer to frequency of respiration. If the breathing pattern is different from normal the animal should be segregated as a suspect.

Abnormalities in behaviour are manifested by one or more of the following signs:

The animal may be:

- walking in circles or show an abnormal gait or posture.
- pushing its head against a wall.
- charging at various objects and acting aggressively.
- showing a dull and anxious expression in the eyes.

An *abnormal gait* in an animal is associated with pain in the legs, chest or abdomen or is an indication of nervous disease.

Abnormal posture in an animal is observed as tucked up abdomen or the animal may stand with an extended head and stretched out feet. The animal may also be laying and have its head turned along its side. When it is unable to rise, it is often called a “downer”. Downer animals should be handled with caution in order to prevent further suffering.

Abnormalities in structure (conformation) are manifested by:

- swellings (abscesses) seen commonly in swine
- enlarged joints
- umbilical swelling (hernia or omphalophlebitis)
- enlarged sensitive udder indicative of mastitis
- enlarged jaw (“lumpy jaw”)
- bloated abdomen

Some examples of *abnormal discharges* or protrusions from the body are:

- discharges from the nose, excessive saliva from the mouth, afterbirth.

- protruding from the vulva, intestine.
- protruding from the rectum (prolapsed rectum) or uterus.
- protruding from the vagina (prolapsed uterus).
- growths on the eye and bloody diarrhoea.

Abnormal colour such as black areas on horses, red areas on light coloured skin (inflammation), dark blue areas on the skin or udder (gangrene).

An abnormal odour is difficult to detect on routine A/M examination. The odour of an abscess, a medicinal odour, or an acetone odour of ketosis may be observed.

Since many abattoirs in developing countries have not accommodation station or yards for animals, Inspector's antemortem judgement must be performed at the admission of slaughter animal

Postmortem inspection.

- Routine postmortem examination of a carcass should be carried out as soon as possible after the completion of dressing in order to detect any abnormalities so that products only conditionally fit for human consumption are not passed as food. All organs and carcass portions should be kept together and correlated for inspection before they are removed from the slaughter floor.
- Postmortem inspection should provide necessary information for the scientific evaluation of pathological lesions pertinent to the wholesomeness of meat. Professional and technical knowledge must be fully utilized by:
 - *viewing, incision, palpation and olfaction techniques.*

- *classifying the lesions* into one of two major categories - *acute or chronic*.
- establishing whether the *condition is localized or generalized*, and the extent of systemic changes in other organs or tissues.
- *determining the significance of primary and systemic pathological lesions* and their relevance to major organs and systems, particularly the liver, kidneys, heart, spleen and lymphatic system.
- *coordinating all the components of antemortem and postmortem findings* to make a final diagnosis.
- *submitting the samples to the laboratory for diagnostic support*, if abattoir has holding and refrigeration facilities for carcasses under detention.

Carcass judgement

Trimming or condemnation may involve:

- Any portion of a carcass or a carcass that is *abnormal or diseased*.
- Any portion of a carcass or a carcass affected with a condition that may present a *hazard to human health*.
- Any portion of a carcass or a carcass that may be *repulsive to the consumer*.

Localized versus generalized conditions

It is important to differentiate between a localized or a generalized condition in the judgement of an animal carcass.

- **In a *localized condition***, a lesion is restricted by the animal defense mechanisms to a certain area or organ. Systemic changes associated with a localized condition may also occur. Example: jaundice caused by liver infection or toxemia following pyometra (abscess in the uterus).

- **In a *generalized condition***, the animal's defense mechanisms are unable to stop the spread of the disease process by way of the circulatory or lymphatic systems. The lymph nodes of the carcass should be examined if pathological lesions are generalized. Some of the signs of a generalized disease are:
 - Generalized inflammation of lymph nodes including the lymph nodes of the head, viscera and/or the lymph nodes of the carcass.
 - Inflammation of joints.
 - Lesions in different organs including liver, spleen kidneys and heart.
 - The presence of multiple abscesses in different portions of the carcass.
 - Generalized lesions usually require more severe judgement than localized lesions.

Acute versus chronic conditions

Acute conditions

- **An acute condition** implies that a lesion has developed over a period of some days, whereas a chronic condition implies the development of lesions over a period of some weeks, months or years. A subacute condition refers to a time period between an acute and chronic condition.
- The acute stage is manifested by inflammation of different organs or tissues, enlarged haemorrhagic lymph nodes and often by petechial haemorrhage of the mucosal and serous membranes and different organs such as heart, kidney and liver. An acute stage parallels with the generalized disease complex, when an acute infection tends to overcome the animal's immune system and becomes generalized.

- Each case showing systemic lesions should be assessed individually taking into account the significance that these lesions have towards major organ systems, especially the liver, kidneys, heart, spleen and lymphatic system as well as the general condition of the carcass.

Chronic conditions

- In a chronic condition, inflammation associated with congestion is replaced by adhesions, necrotic and fibrotic tissue or abscesses. The judgement in the chronic stage is less severe and frequently the removal of affected portions is required without the condemnation of the carcass. However, judgement on the animal or carcass judgement tends to be more complicated in subchronic and sometimes in peracute stages. If generalized necrotic tissue is associated with previous infection, carcass must be condemned.

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