

Post-mortem Examination

BY

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Post-mortem Examination

Post-mortem examination refers to inspection of carcass and organs by veterinary doctors after slaughtering and dressing. It should be carried out as soon as possible after dressing. The carcass is examined for evidence of bruises, injuries, or discoloration and diseased conditions. The veterinary doctor examines carcass and organs to ensure that carcass and organs are fit for human consumption. During inspection, care should be taken not to contaminate the carcass and organs from diseased animals.

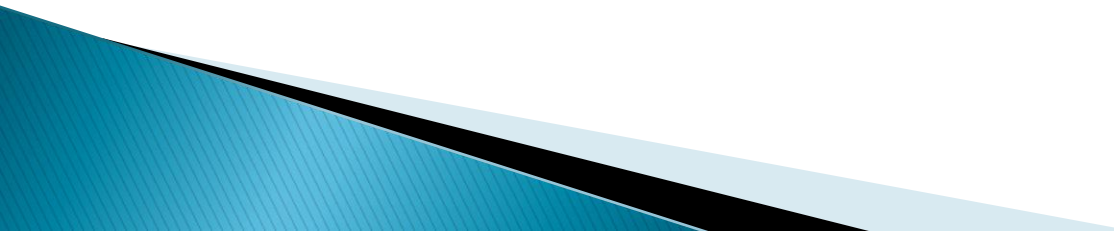
Need of Post mortem examination

- ▶ some of the diseases are not apparent and can be detected easily in ante-mortem examination. Thus one basis reason to conduct postmortem examination is detection and diagnosis of disease not only to ensure safe meat for consumer but also to adopt preventive measures to control disease right at farm level itself.

Essentials for Post mortem Inspection

- ▶ The area where the examination is being conducted should have sufficient and well distributed light. The natural light is considered better than artificial light. The intensity of light must be 540 lux or 50 ft candles. Besides this the person carrying inspection need clean, sharp, stainless knives. There must be provision for hot and cold water.
- ▶ There should be a sterilizer (operate of 82⁰c) sterilize the knives, saws and cleavers

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- ▣ Sterilization of knives used for post-mortem inspection:
 - ▣ In boiling water for 30 minutes
 - ▣ Heating the knife for 10-15 minutes in oil, liquid petroleum jelly or glycerin at a temperature of 248°F to 266°F.
 - ▣ (The sterilization of anthrax contaminated knives requires special consideration).
 - ▣ To put a mark as carcass and its viscera making dyes should also be provided which should be cheap, non-corrosive in nature.
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General Consideration

- ▣ Following points should be considered during post-mortem inspection:
- ▣ Carry out the examinations as soon as possible (Carcasses of beef and pork set rapidly and if the inspection is delayed especially in cold weather the examination of lymph nodes becomes difficult)
- ▣ Avoid as far as possible artificial light and carryout the inspection in day light.
- ▣ Carryout the examination methodically following a definite sequence
- ▣ Great care must be taken at the time of inspection particularly in cases suspected for zoonotic diseases
- ▣ The identity of carcass and its viscera should be maintained.

Postmortem Principle

- ▣ **Visual perception:** - First the carcass and visceral organs should be examined visually for any visible abnormalities. Examination is done for any colour change, atrophy, hypertrophy, neoplastic condition etc.
- ▣ **Palpation:** -The organs being examined are palpated for any change in consistency, sliminess or gelation, cyst etc.
- ▣ **Incisions:** - The organs are incised if needed. This is done to examine any parasites inside organ, structural deformity etc.
- ▣ **Laboratory tests:** - These are done for confirmation and support the observation made by macroscopic examination. While examining the organs of carcass lymph node of adjoining area must be examined.

Order of Post-mortem examination

- ▶ . **Cattle:** In case of cattle, sequence followed is :
- ▶ 1. Head:
 - Verify the number, age and sex of the animal.
 - Inspect gums, lips and tongue for FMD, necrotic and other forms of stomatitis, Actinomycosis and Actinobacillosis (Palpate the tongue for the latter).
 - Incise the internal and external masticatory muscles and tongue for cysticercus bovis.
 - Incise the following lymph nodes for T.B. lesions: Retropharyngeal, Submaxillary and Parotid.

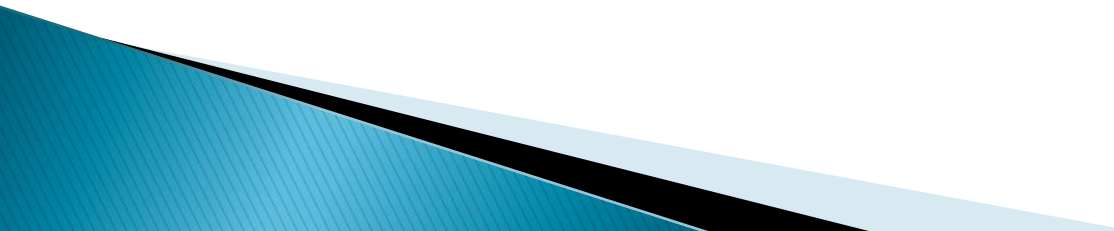
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▣ 2. Viseral organs

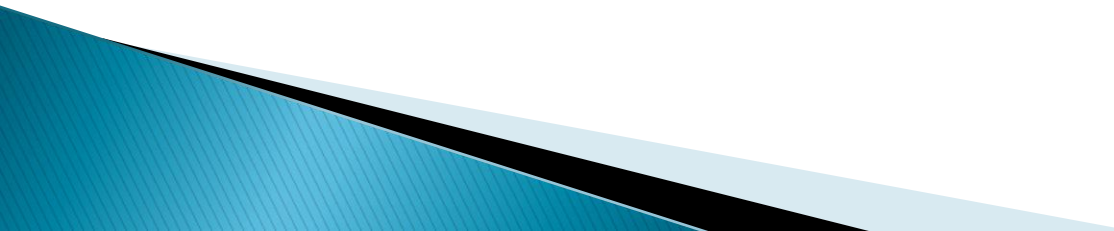
▣ 1. Lungs:

- Visual examination followed by palpation for the detection of pleurisy, Pneumonia, Tuberculosis, Fascioliasis and Hydatid cysts.
- Incise the bronchial and mediastinal lymph nodes and expose the lung by giving deep incision form the base to apex (for checking T.B. lesions)
- Check the tumors, abscesses etc by palpation

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- ▶ 2. Heart:
 - ▶ Examine the pericardium for traumatic or tubercular pericarditis
 - ▶ Incise the ventricles of the heart and pay attention to look for petechial hemorrhages on the epi-cardium and endo-cardium and cuts in the myocardium.
 - ▶ Flavy condition of the myocardium is indicative of septic conditions.
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- ▶ 3. Liver:
 - ▶ A visual examination should be made for fatty changes, abscesses,
 - ▶ Hydrated cysts, Actinobacillosis etc
 - ▶ For examination of Fascioliasis, incise/thin portion of left lobe of liver and examine the contents.
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- ▣ 4. Stomach and Intestines

- ▣ Check for the serous surface of the intestine for T.B. lesions.
- ▣ Palpate the mesenteric lymph node and if necessary incise and examine.

- ▣ 5. Spleen:

- ▣ Examine for T. B. lesions, Anthrax, haematoma and presence of infarcts.

- ▣ 6. Uterus:

- ▣ Check Septic conditions.

- ▣ 7. Udder:

- ▣ Check the supramammary lymph nodes by incising for the evidence of T. B. lesions.
- ▣ Check for abscesses if any.

. General Inspection of Carcass

- Look for the injuries and bruises.

▶ Bruises: 24 hrs - dark colour

▶ Duration 24-38 hrs - Watery condition

▶ 3 day + - Rusty orange colour and soapy to touch

- Look for inflammation, abscesses and T.B. lesions in the thoracic and abdominal cavities
- Examine the kidneys
- Incise and examine renal lymph nodes

POSTMORTEM JUDGEMENT

- ▣ Similar to ante mortem examination a competent veterinarian has to submit its judgment report regarding the fate of carcass & its offal. The decision is based on visual observation, palpation, smell, ante mortem signs the results of laboratory test if any. The statement of judgment may be either of the following
 - ▣ fit for human consumption
 - ▣ unfit for human consumption or total condemnation
 - ▣ The effected organs must condemned while rest can be passed for human consumption (partially condemned)
 - ▣ Approved for human consumption with conditions, distribution restricted to limited or small amount to a consumer with instruction. (free bank system)
 - ▣ The carcass / organs condemned should be disposed off following scientific procedure

Conditions in which the entire carcass is condemned:

- ▶ The entire carcass, organs, viscera should be rejected as unfit for human consumption if evidence of following disease conditions are seen:
- ▶ Actinobacillosis (generalised) , Actinomycosis (generalized) Anemia (advanced) Anthrax, Anaplasmosis Algal disease African swine fever Black leg, Bruising (extensive and severe) B.S.E., BVD Braxy, black leg Cysticercus bovis (Generalized) , Cysticercus cellulosae, cysticercus ovis, Emaciation (pathological)

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- ▶ Fever (High – Salmonellosis) FMD, Glanders, Hemorrhagic septicemia, Immaturity (still born, edematous), Jaundice, Malignant Tumours, Fever, Listeriosis Acute septic mastitis, Melanosis (Generalized) , Acute septic metritis, Abnormal odour associated with disease or other conditions prejudice to health. Edema (generalized), Pericarditis (acute and septic) Peritonitis (Acute, diffuse, septic) Pleurisy

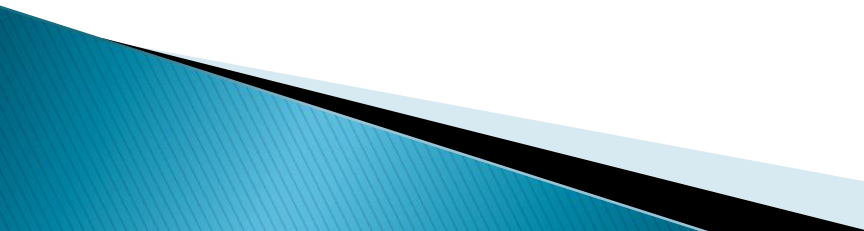
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- ▣ (Acute, diffuse, septic) Decomposition, Pneumonia (Acute septic) Pyaemia including Joint ill, Septicemia or pyaemia, Swine erysipelas (acute) Swine fever, scrapie Tetanus, Trichinosis, Tumours (Malignant & multiple) Uremia, Sarcocysts (Generalized)
- ▣ Besides these Jhone's Disease with emaciation, generalized tuberculosis, pig with brucellosis sheep with acute blue tongue, heavy infestation of taeniasis and poisoning cases must be totally condemned.

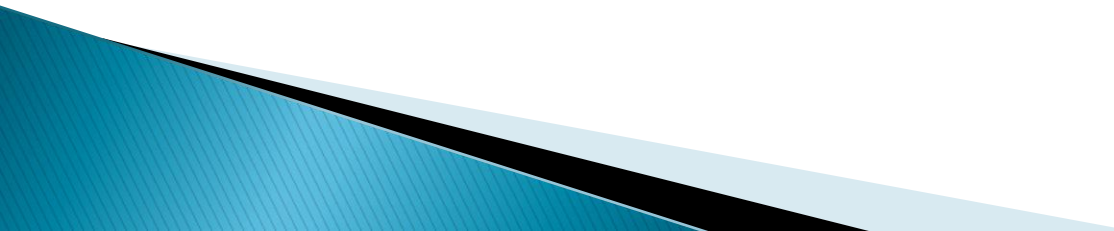
Examination of the Head of animals intended for human consumption

	Cattle	Pigs	Sheep/ goats	Horses	Deer	Poultry
External surfaces/oral cavity	V	V	V ^a	V	V	--
Submaxillary lymph nodes	V, I ^b	V, I	--	V, P	V, I	--
Parotid lymph nodes	V, I	--	--	V, P	V, I	--
Retropharyngeal lymph nodes	V, I	--	--	V, P	V, I	--
Tongue	V, P ^c	V	--	V, P	V, P	--
Muscle of mastication	V, P, I ^d	V, P, I	--	--	--	--
Other	--	--	--	-- ^e		

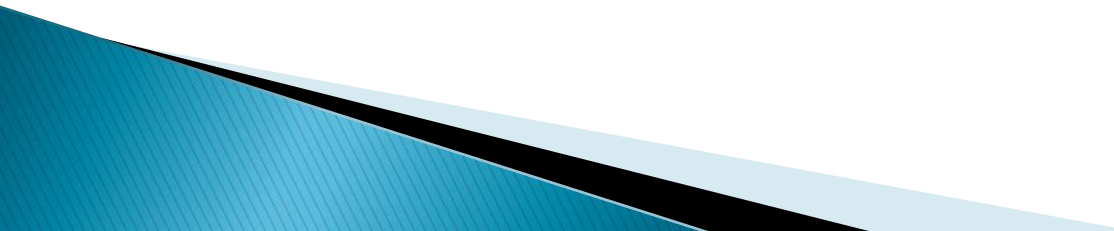
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- ▣ V is visual examination, P is examination by palpation, I is examination by incision.
 - ▣ ^a Notwithstanding post-mortem examination for animal health purposes, the head may be discarded if brains and tongues are not collected for human consumption
 - ▣ ^b Incision of lymph nodes of the head is not necessary in calves
 - ▣ ^c Palpation of the tongue is not necessary in calves
 - ▣ ^d The muscles of mastication should be incised according to the potential for infestation with cysts of *Taenia* pp.
 - ▣ ^e The nasal septum should be removed and examined if glanders is present in the slaughter population
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Guidelines for Development of a Risk- Based System for Post-Mortem Examination

- ▣ Post-mortem examination procedures and tests should be established by the competent authority according to a science- and risk-based system, procedures will have to be based on current scientific knowledge and practice.
 - ▣ Post-mortem examination procedures based on current knowledge and practice vary considerably in different countries.
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- ▣ In particular:
 - ▣ Routine procedures may be supplemented by additional procedures to assist judgment.
 - ▣ Young animals are likely to need less intensive examination than older animals, although some diseases are confined to young animals. In the case of farmed game and farmed game birds, post-mortem examination procedures should reflect the particular circumstances of harvesting and transport to the establishment.
 - ▣ In the case of killed wild game and wild game birds, post-mortem examination procedures should reflect the particular circumstances of harvesting and transport to the establishment.
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- ▣ Special post-mortem examination procedures may need to be applied to animals that have reacted to screening test, e.g., animals which have reacted positively to tuberculin test should be slaughtered under special hygiene conditions and be subject to more intensive examination procedures than non-reactor animals.
- ▣ Special post-mortem judgments may need to be applied to animals that have reacted to screening tests, e.g., irrespective of detection of lesions suggestive of infection, the udder, genital tract and blood of animals which have reacted positively to a brucellosis test should be judged as unfit for human consumption.

THANKS