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ICS 67.120

## **EAST AFRICAN STANDARD**

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**Ante-mortem and post-mortem inspection of meat animals — Code of practice**

**EAST AFRICAN COMMUNITY**

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## Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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## Introduction

Proper ante-mortem inspection of all animals before slaughter is essential to ensure that they are not affected with any disease or other condition which may render the flesh unwholesome. There are some diseases which are communicable from animals to man by contact and, therefore, ante-mortem inspection is also necessary for safeguarding the health of the consumer as well as of the butcher. Post-mortem inspection is essential to detect carcasses, parts of carcasses and organs which may be diseased and, thereby, rendered unfit for human consumption. At present, there is no uniform procedure for ante-mortem and post-mortem inspection of meat animals on an all-India basis but the local bodies have framed their own by-laws. The formulation of this standard will, therefore, meet the need for a uniform procedure for the Community.

In the preparation of this East African Standard, the following sources were consulted extensively:

IS 1982:1971(R2000), *Code of Practice for Ante-mortem and Post-mortem Inspection of Meat Animals*

Codex Alimentarius website: [http://www.codexalimentarius.net/mrls/pestdes/jsp/pest\\_q-e.jsp](http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp)

USDA Foreign Agricultural Service website: <http://www.mrlatabase.com>

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSV1.0/Standards>

USDA Plant Inspectorate Service website: [http://www.aphis.usda.gov/import\\_export/plants](http://www.aphis.usda.gov/import_export/plants)

European Union: [http://ec.europa.eu/sanco\\_pesticides/public](http://ec.europa.eu/sanco_pesticides/public)

Assistance derived from these sources is hereby acknowledged.

**Contents**

1	Scope .....	1
2	Normative references .....	1
3	Definitions.....	3
4	Duties of butchers, slaughtermen and flayers.....	4
5	General duties of and instructions to meat inspectors .....	5
6	Ante-mortem inspection.....	6
7	Post-mortem inspection.....	7
7.1	General principles to be observed .....	7
7.2	Detailed instructions for routine inspection of carcasses of cattle and swine .....	8
7.4	Instructions regarding additional inspection where evidence of tuberculosis has been discovered in cattle and swine.....	9
7.5	Instructions regarding action to be taken in the event of evidence of tuberculosis in cattle and swine .....	9
7.6	Instructions regarding action to be taken in the event of evidence of other diseases found in carcasses of cattle, sheep, goats, or swine .....	11
	Annex A (normative) Procedure for the disinfection of abattoirs .....	15
	Annex B (normative) Procedure to be adopted in dealing with anthrax infected carcasses in abattoirs. ....	17

Draft for comments only — Not to be cited as East African Standard

## Ante-mortem and post-mortem inspection of meat animals — Code of practice

### 1 Scope

This East African Standard specifies the procedure for the ante-mortem and post-mortem inspection of meat producing animals.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AOAC Official Method 931.06:1931, *Phosphorus (Total) ( $P_2O_5$ ) in Eggs*

CAC/RCP 1, *Recommended international code of practice — General principles of food hygiene*

CD-K-670:2010, *Bovine (beef) meat — Carcasses and cuts*

CD-K-671:2010, *Caprine (goat) meat — Carcasses and cuts*

CD-K-672:2010, *Ovine (sheep) meat — Carcasses and cuts*

CD-K-673:2010, *Porcine (pig) meat — Carcasses and cuts*

CD-K-692:2010, *Mutton and goat meat canned in brine — Specification*

CD-K-675:2010, *Edible meat co-products*

CD-K-683:2010, *Smoked bacon — Specification*

CD-K-692:2010, *Mutton and goat meat canned in brine — Specification*

CD-K-693:2010, *Animal casings — Specification*

CD-K-697:2010, *Code of hygienic practice for meat*

CD-K-699:2010, *Veterinary drugs residues in foods — Maximum residue limits*

CD/K/700:2010, *Ante-mortem and post-mortem inspection of meat animals — Code of practice*

EAS 5, *Refined white sugar — Specification*

EAS 12, *Drinking (potable water) — Specification*

EAS 35, *Edible salt — Specification*

EAS 38, *Labelling of prepackaged foods — Specification*

EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

EAS 41, *Fruits, vegetables and derived products — Sampling and methods of test*

EAS 103, *Schedule for permitted food additives*

## CD/K/700:2010

EAS 123, *Distilled water — Specification*

ISO 936, *Meat and meat products — Determination of total ash*

ISO 937, *Meat and meat products — Determination of nitrogen content (Reference method)*

ISO 1442, *Meat and meat products — Determination of moisture content (Reference method)*

ISO 1443, *Meat and meat products — Determination of total fat content*

ISO 1444, *Meat and meat products — Determination of free fat content*

ISO 1736, *Dried milk and dried milk products — Determination of fat content — Gravimetric method (Reference method)*

ISO 1737, *Evaporated milk and sweetened condensed milk — Determination of fat content — Gravimetric method (Reference method)*

ISO 1841-1, *Meat and meat products — Determination of chloride content — Part 1: Volhard method*

ISO 1841-2, *Meat and meat products — Determination of chloride content — Part 2: Potentiometric method*

ISO 2294, *Meat and meat products — Determination of total phosphorus content (Reference method)*

ISO 2917, *Meat and meat products — Measurement of pH — Reference method*

ISO 2918, *Meat and meat products — Determination of nitrite content (Reference method)*

ISO 3091, *Meat and meat products — Determination of nitrate content (Reference method)*

ISO 3496, *Meat and meat products — Determination of hydroxyproline content*

ISO 4134, *Meat and meat products — Determination of L-(+)- glutamic acid content — Reference method*

ISO 4831, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

ISO 4833, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 degrees C*

ISO 5537, *Dried milk — Determination of moisture content (Reference method)*

ISO 5553, *Meat and meat products — Detection of polyphosphates*

ISO 5554, *Meat products — Determination of starch content (Reference method)*

ISO 5985, *Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid*

ISO 6491, *Animal feeding stuffs — Determination of phosphorus content — Spectrometric method*

ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*

ISO 8156, *Dried milk and dried milk products — Determination of insolubility index*

ISO 9390, *Water quality — Determination of borate — Spectrometric method using azomethine-H*

ISO 13493, *Meat and meat products — Determination of chloramphenicol content — Method using liquid chromatography*

ISO 13496, *Meat and meat products — Detection of colouring agents — Method using thin-layer chromatography*

ISO 13730, *Meat and meat products — Determination of total phosphorus content — Spectrometric method*

ISO 13965, *Meat and meat products — Determination of starch and glucose contents — Enzymatic method*

ISO 21527-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 1: Colony count technique in products with water activity greater than 0.95*

ISO 21527-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

### 3 Definitions

For the purpose of this standard the following definitions shall apply:

#### 3.1

##### **animal**

includes:

- a) sheep, lamb, ewe, wether and ram;
- b) wether, goat, she goat, buck and kid;
- c) pig, barrow, boar, hog, stag, pigling, gilt, rig and sow; and
- d) buffalo-bull, buff-cow, buff-calf, bull, cow, bullock, heifer, calf, steer and ox.

#### 3.2

##### **butcher**

the person producing or dealing with meat intended for human consumption

#### 3.3

##### **carcass**

the dead body or any part thereof including the viscera of any animal which has been slaughtered

#### 3.4

##### **cattle**

a bull, cow, ox, heifer, calf, steer, bullock and includes buffalo

#### 3.5

##### **condemned**

carcasses, parts or organs so marked unfit for human consumption meant to be destroyed or rendered unfit for food purposes

#### 3.6

##### **flayer**

the person who skins the animals and dresses the carcasses

**3.7**

**local authority**

a local area which is a municipality, the municipal board or municipal corporation; cantonment, the cantonment authority; a notified area, the notified area committee or any other local area, such as may be prescribed by the central or state governments

**3.8**

**meat**

flesh and other edible parts of a carcass

**3.9**

**Meat Inspector**

qualified veterinarian

**3.10**

**veterinarian**

any duly qualified veterinarian appointed or employed by a local authority or by the Central Government

**3.11**

**nuisance**

includes any act, omission, place or thing which causes or is likely to cause injury, danger, annoyance or offence to the sense of sight, smell or hearing, or which is or may be dangerous to life or injurious to health or property

**3.12**

**public street**

any street over which the public have a right of way; or heretofore levelled, paved, metalled, channelled, sewerred, or repaired out of municipal or other public funds

**3.13**

**slaughter-hall**

the actual place where the animals are slaughtered for food purposes

**3.14**

**abattoir**

any building, premises, or place licensed as an abattoir by the local authority for slaughter of animals intended for human consumption

**3.15**

**slaughterman**

the person who slaughters the animals

**4 Duties of butchers, slaughtermen and flayers**

**4.1** For effectively carrying out the provisions of this standard, it is necessary that butchers, slaughtermen and flayers should be trained personnel and shall be licensed. They shall be free from communicable diseases and shall undergo periodic medical check up.

**4.2** Butchers, slaughtermen and flayers shall be regularly protected against enteric group of diseases by suitable vaccination. They should undergo medical check up at least once in 6 months and certificate of health and fitness obtained from competent authority.

**4.3** The flayers shall not hold the dressing/flaying knives in their mouths or stick them into carcasses during operations. Suitable scabbards should be provided for keeping knives when not in use. Flaying of carcass shall not be done by inflation of air by mouth.

**4.4** The slaughtermen and the flayers should wear gum boots and protective dressing which are easily cleansible.

**4.5** Evidence of disease in a carcass shall not be modified or obliterated by washing, rubbing, stripping or in any other manner, except under the direct supervision of the Meat Inspector and in accordance with his instructions.

**4.6** In no case shall the serous membranes (pleura and peritoneum) be stripped except, by or under the direction of the Meat Inspector, and in any such case in which immediate stripping is necessary to preserve the marketability of the carcass, the membranes shall not be entirely detached from the carcass until the same have been examined by the Meat Inspector and he has authorized detachment.

**4.7** Notification to slaughter animals for emergency reasons shall be forwarded to the Meat Inspector. The carcass, with the whole of the viscera and all parts thereof attached thereto, shall be detained until examined by the Meat Inspector.

**4.8** Any instrument that has been used on a tuberculous carcass or parts thereof, or on a carcass presenting lesions of other disease or suspected of being diseased shall not be used again until it has been boiled for half an hour in water containing 3 percent, by weight, of sodium carbonate, or sterilized by any other suitable means accepted for bacteriological sterilization. No cloth shall be used for wiping the carcasses.

**4.9** Where the carcass has not been examined by the Meat Inspector at the time of slaughter, the whole of the viscera and parts and organs thereof shall be kept, pending inspection, in such a way as to enable them to be identified, by labelling or otherwise, with the carcass from which they have been removed.

**4.10** No carcass or part thereof shall be removed, or so placed as to prevent its ready identification, except with the authority of the Meat Inspector, or.

**4.11** The skins should be removed from slaughter room as early as possible and should not be allowed to be piled up.

## **5 General duties of and instructions to meat inspectors**

**5.1** The Meat Inspector shall enforce generally the regulations and provisions made in regard to the working of abattoirs which, inter-alia, shall include:

- a) attending the abattoir during the hours fixed;
- b) carrying out the ante-mortem inspection of animals according to the procedure laid down in Clause 6;
- c) carrying out the post-mortem inspection according to the procedure laid down in Clause 7;
- d) keeping a record of the number and kinds of animals slaughtered along with the number and kinds of carcass and parts and organs condemned on account of different diseases;
- e) at the close of each day's work, ensuring that the abattoirs under him are thoroughly cleaned and disinfected according to the procedure specified in Annex A and the condemned parts and organs duly destroyed and the offal removed to such places as may be appointed by the local authority; and
- f) supervising, handling and transportation of meat to reduce contamination. To periodically inspect the abattoirs for proper lighting, ventilation, drainage, water supply, fly-proofing, cleanliness of floors, walls and implements and lairage accommodation.

**5.2** The carcasses and viscera of all animals slaughtered should be inspected. This examination shall be methodical and as complete as possible in all cases. All carcasses inspected and passed as fit for human consumption shall be clearly stamped in several places.

### **5.3 Stamping ink**

A solution containing 1 to 2 percent of fuchsine in acetic acid may be used. The fuchsine is dissolved in just enough acetic acid to bring about the solution and then glycerine is added to make up the required quantity. Alternatively, a stamping ink prepare according to the following formula may be used:

Methyl violet	35 g
Cane sugar	450 g
Ethyl alcohol	1 363 ml
Water	1 636 ml

The sugar is dissolved in water, the alcohol, then-added and finally the methyl violet. The solution is stirred and allowed to stand for 12 hours before use. Stamps preferably bearing heads of different animals should be used.

**5.4** The Meat Inspector shall use knives, wipes and instruments kept specially for examining carcasses and parts thereof.

**5.4.1** Knives and other instruments that have been used for cutting or examining any diseased organ, gland or tissue, shall not be used again for any purpose until they have been disinfected in boiling water or other suitable disinfectant. They should also be cleaned and properly disinfected at the end of each working day.

**5.5** The carcass of an animal, that is, well nourished and free from disease, shall be passed as fit for human consumption.

**5.6** If abnormality is detected in any part of a carcass or in any organ, the whole carcass and all organs thereof shall be examined for evidence of any repetition of the local condition, or modification of the same in other parts, according to the procedure outlined in Clause 7.

## **6 Ante-mortem inspection**

**6.1** Animals brought for slaughter should be examined for symptoms of communicable diseases so that entry of such animals into the sheds is prevented.

**6.2** All animals meant for slaughter should be rested at least for 24 hours and should not be fed for at least twelve hours before slaughter but they should be provided with abundant water.

**6.3** Such ante-mortem examination shall be made on the premises (yards and lairages) attached to the abattoir in which the animals are about to be slaughtered.

**6.3.1** In order to obviate slaughtering of anthrax infected animals a blood smear shall be examined from every animal that dies while awaiting slaughter.

**6.4** In cases of emergency, when ante-mortem inspection of animals is not possible, the butcher shall notify the Meat Inspector after slaughtering and shall not remove the carcass with its viscera from the abattoir till the post-mortem examination is carried out.

**6.5** During the inspection, the following details should be noted:

- a) Evidence of cruelty to animals by over-trucking, over-driving or by other act;
- b) Disease symptoms which may affect the general health of the animal or depreciate the meat;
- c) Presence of scheduled infectious and contagious diseases or symptoms which may suggest that such disease is developing;
- d) Species, sex, colour, age; and

e) Body temperature, whenever necessary.

**6.6** In particular, attention shall be paid to the following:

- a) General condition, especially emaciation;
- b) Manner of standing and walking;
- c) Reaction to environment;
- d) Hide, skin and hair;
- e) Digestive system (lips, mouth, anus, rumination, quality of faeces and appetite);
- f) Vulva, vagina and mammary glands; and
- g) Respiratory system (nasal openings and respiration).

**6.7** All animals showing signs of pregnancy shall be rejected and removed from the slaughter-house after being marked with some distinguishing mark.

**6.8** No animals with young at foot shall be permitted to be slaughtered.

**6.9** Every animal suspected on ante-mortem inspection shall be segregated and tagged as a 'suspect' and slaughtered either in the emergency slaughter hall or when the slaughtering of the normal animals has been completed.

**6.9.1** The Inspecting Officer carrying out the ante-mortem inspection shall furnish in writing before post-mortem inspection to the Officer In-charge of the Officer(s) on the slaughtering floor, of the reasons for declaring the animals as suspect in case it is to be done by a separate office.

**6.10** Any animal showing, on ante-mortem inspection, a disease or condition that would necessitate condemnation of the carcass on post-mortem inspection shall be tagged as 'condemned'.

**6.11** Condemned animals shall, if not already dead, be slaughtered in emergency slaughter hall only and shall not be conveyed into any department of the establishment used for edible products.

## **7 Post-mortem inspection**

The following instructions indicate the order and method of inspection of all carcasses. As far as possible, the post-mortem examination shall be conducted under conditions simulating natural light.

### **7.1 General principles to be observed**

#### **7.1.1 Viscera**

- a) All viscera shall be inspected as they are removed from the carcass or in such circumstances as will ensure that they are viscera of a particular carcass.
- b) Every organ and the associated lymph-nodes shall be examined. When any abnormal condition is observed, the organ or gland shall be incised and the incision made in such a manner as to avoid soiling or contaminating or unnecessarily depreciating the value of any part of the carcass or other organs that may be passed as fit for human consumption.

#### **7.1.2 Carcass**

- a) The carcass shall be inspected for evidence of bruising haemorrhage or discolouration; local or general dropsy (oedema) swellings or deformities of bones or joints or swellings or other abnormality of bones or joints or musculature.

- b) The serous membranes (pleura and peritoneum) shall be inspected in every case, and in no case shall they be removed nor shall any evidence of disease be modified or obliterated by washing, rubbing, stripping, or in any other manner before examination.
- c) After the carcass is split, the sternum, ribs, vertebrae and spinal cord shall be examined.
- d) Incision shall be made on each quarter in the musculature near the shoulder joint and near the pubic bone, without mutilating the carcass, for detection of cysts (*Cysticercus bevis* and *Cysticercus cellulosae*).

## 7.2 Detailed instructions for routine inspection of carcasses of cattle and swine

**7.2.1 Head** — The head, including a (a) the surface of the tongue (which should be loosened but not detached before inspection), (b) the palate or roof of the mouth, and (c) the lymph-node of the throat (retropharyngeal, submaxillary and parotid), shall be inspected and the cheek muscles shall be inspected on both sides, if necessary by a linear incision parallel to the branches of the lower jaw.

NOTE 1 In cattle, the muscles of mastication shall be examined by 3 to 4 linear incisions of 15 cm length and 1.5 cm depth to find out the presence of cysts of *cysticercus bovis*.

NOTE 2 In the case of calves, lymph-node of the head shall only be cut in case of suspicion.

NOTE 3 In the case of pigs, the portions of muscles from tongue, diaphragm and cheek shall be inspected under the microscope or trichinascop for trichinollosis.

### 7.2.2 Abdominal cavity

**7.2.2.1 Stomach, intestines and spleen** — The outer, and when necessary the inner, surfaces of the stomach and intestines, and the surface and substance of the spleen shall be inspected, together with the lymph-nodes of the stomach and bowel (gastro-splenic and mesenteric) and web (omentum). The spleen shall be cut where necessary, for the inspection of the substance (pulp).

**7.2.2.2 Liver** — The surfaces and substance of the liver shall be inspected. The associated lymph-nodes (hepatic) shall also be inspected and the bile ducts incised where necessary.

**7.2.2.3 Kidneys** — The lymph-nodes of the kidneys (renal) and the adrenal glands shall be inspected before the removal of the kidneys. There-after the kidneys shall be exposed, and the surface inspected and, if necessary, the kidneys shall be split by incision and the substance inspected.

**7.2.2.4 Uterus and ovaries** — The inner and outer surfaces of the uterus, and the substance of the ovaries shall be inspected. Where necessary, the uterus shall be cut transversely through both horns, and also longitudinally.

**7.2.2.5 Urinary bladder** — The outer and inner surfaces of the urinary bladder shall he inspected by observation and by cutting only if it shows a diseased condition.

NOTE In reporting upon lesions included in 7.2.2.1, 7.2.2.2 and 7.2.2.4, special attention shall be paid as to whether the lesions affect the peritoneal surface or the organ itself. Unless care in this connection is exercised, statistical records become misleading.

**7.2.3 Thoracic cavity** — The contents of the thoracic cavity shall be inspected before the various organs are separated and the following inspection shall be made.

**7.2.3.1 Lungs** — The lungs shall be inspected and, if obviously diseased, they shall be incised at the base. The associated lymph-nodes (bronchial and mediastinal) shall also be inspected and, unless obviously diseased, shall be incised.

NOTE In reporting upon lesions in 7.2.3.1, distinction shall be made between lesions affecting the pleura and those affecting the lungs (parenchyma).

**7.2.3.2 Heart** — The heart sac (pericardium) shall be opened, and the heart inspected and, if necessary, incised.

NOTE In reporting upon lesions in 7.2.3.2, distinction shall be made between lesions of the pericardium, myocardium and endocardium.

**7.2.4 Udder** — The udder shall be inspected by observation and palpation. Incisions shall be made at the base of the teats, and also into any indurated region in the substance of the gland; the associated lymph-nodes (supramammary) shall also be incised.

**7.2.5 Testicles and penis** — The outer surface and, the substance of the testicles and penis and the superficial inguinal lymph-nodes shall be inspected.

**7.2.6 Serous membranes** — The lining (serous) membranes of the chest and abdomen (pleura and peritoneum) shall be inspected in every case.

NOTE 1 It will be observed that in all cases the following lymph-nodes shall be inspected as a matter of routine:

- a) Retropharyngeal (in bovines), submaxillary (in swine),
- b) Bronchial and mediastinal,
- e) Hepatic, and
- d) Mesenteric.

NOTE 2 In the case of a calf, special attention shall be paid to the navel and to the joints of the carcass.

### **7.3 Instructions for routine inspection of carcasses of sheep and goats**

The inspection shall be conducted on the same lines as for calves in 7.2. The cutting of the heart, head, pulmonary lymph-nodes and body lymph-nodes shall be undertaken only in cases of suspicion.

### **7.4 Instructions regarding additional inspection where evidence of tuberculosis has been discovered in cattle and swine**

**7.4.1** The viscera and the associated lymph-nodes shall be inspected for evidence of tuberculosis both in the substance and in the covering membranes (capsules). The existence of tuberculosis in the lymph-nodes of an organ shall be held to be evidence of the disease in the organ.

**7.4.2** All the usual lymph-nodes should be inspected in meat inspection work (other than those already enumerated), such as the lower cervical, pre-sternal, sub-dorsal, prescapular, supramammary (or superficial inguinal), iliac and sub-lumbar-nodes; and, if necessary, the precrucial and popliteal-nodes shall be exposed and inspected by incision in every case of tubercle. Those lymph-nodes which, having regard to visible evidence, are least likely to be infected shall be inspected first; for example, if evidence of tuberculosis is found on the pleura, the lymph-nodes of the hind quarter shall be inspected before those of the forequarter.

**7.4.3** The carcass of a pig in which lesions of tuberculosis are found in any situation or in any degree shall be split and the vertebrae inspected. The kidney in such a carcass shall be freed, but not necessarily detached from the enclosing fatty tissue, the surface shall be carefully inspected and, if lesions are obvious or suspected, incisions shall be made into the substance.

### **7.5 Instructions regarding action to be taken in the event of evidence of tuberculosis in cattle and swine**

**7.5.1** The carcasses of animals affected with tuberculosis shall be disposed of as given in 7.5.1.1 to 7.5.1.3.

**7.5.1.1** The entire carcass shall be condemned if any of the following conditions occur:

- a) When it was observed before the animal was killed that it was suffering from fever;
- b) When there is tuberculosis associated with cachexia;

- c) When the lesions of tuberculosis are generalized, as shown by their presence not only at the usual seats of primary infection but also in parts of the carcass or in the organs that may be reached by the tubercle bacilli only when they are carried in the systemic circulation. The tuberculous lesions in any two of the following organs are to be accepted as evidence of generalization when they occur in addition to local tuberculous lesions in the digestive or respiratory tracts, including the lymph-nodes connected therewith: spleen, kidney, uterus, udder, ovary, testicle, adrenal gland, and brain or spinal cord or their membranes. Numerous tubercles uniformly distributed throughout both lungs also afford evidence of generalization.
- d) When the lesions of tuberculosis are found in the muscles or intermuscular tissue or bones or joints, or in the body lymph-nodes as a result of draining the muscles, bones, or joints;
- e) When the lesions are extensive in one or both body cavities; and
- f) When the lesions are multiple, acute, and actively progressive. (Evidence of active progress consists of signs of acute inflammation about the lesions, or liquefaction necrosis, or the presence of young tubercles.)

**7.5.1.2** An organ or a part of a carcass shall be condemned under any of the following conditions:

- a) When it contains lesions of tuberculosis;
- b) When the lesion is localized but immediately adjacent to the flesh as in the case of tuberculosis of the parietal pleura or peritoneum. In this case not only the membrane or part affected but also the adjacent thoracic or abdominal wall is to be condemned;
- c) When it has been contaminated by tuberculous material through contact with the floor or a soiled knife or otherwise;
- d) Heads showing lesions of tuberculosis shall be condemned, except that when a head is from a carcass passed for food or for cooking and the lesions are slight, or calcified, or encapsulated, and are confined to lymph-nodes in which not more than two are involved, the head may be passed for cooking after the diseased tissues have been removed and condemned;
- e) An organ shall be condemned when the corresponding lymph-node is tuberculous; and
- f) Intestines and mesenteries showing lesions of tuberculosis shall be condemned.

**7.5.1.3** Carcasses showing lesions of tuberculosis may be passed for food when the lesions are slight, localized, and calcified or encapsulated, or are limited to a single or several parts of the organs of the body (except as noted in 6.5.1.1) and there is no evidence of recent invasion of tubercle bacilli into the systemic circulation. Carcasses showing such lesions as the following examples may be passed, after the parts containing the lesions are removed and condemned in accordance with 6.5.1.2:

- a) In the cervical lymph-nodes and two groups of visceral lymph-nodes in a single body cavity, such as the cervical, bronchial and glands; mediastinal glands, or the cervical, hepatic, and mesenteric
- b) In the cervical lymph-nodes and one group of visceral lymph-nodes and one organ in a single body cavity, such as the cervical and bronchial lymph-nodes and lungs, or the cervical and hepatic lymph-nodes and the liver;
- c) In two groups of visceral lymph-nodes and one organ in a single body cavity, such as the bronchial and mediastinal lymph-nodes and the lungs, or the hepatic and mesenteric lymph-nodes and the liver;
- d) In two groups of visceral lymph-nodes in the thoracic cavity and one group in the abdominal cavity, or in one group of visceral lymph-nodes in the thoracic cavity and two groups in the

abdominal cavity, such as the bronchial, mediastinal and hepatic lymph-nodes, or the bronchial, hepatic and mesenteric lymph-nodes;

- c) In the cervical lymph-nodes and one group of visceral lymph-nodes in each body cavity, such as the cervical, bronchial, and hepatic lymph-nodes; and
- f) in the cervical lymph-nodes and one group of visceral lymph-nodes in each body cavity, together with the liver when the latter contains but few localized foci. In this class of carcasses, which will be chiefly those of horses, the lesions of the liver are considered to be primary, as the disease is practically always of alimentary origin.

## **7.6 Instructions regarding action to be taken in the event of evidence of other diseases found in carcasses of cattle, sheep, goats, or swine**

**7.6.1** The entire carcass and all the parts and organs and also the blood thereof shall be condemned and seized if evidence of any of the conditions mentioned in 7.6.1.1 to 7.6.1.37 is found.

### **7.6.1.1 Actinomycosis and actinobacillosis (generalized)**

- a) The definition of generalization as outlined for tuberculosis (see 7.5) shall apply for actinomycosis and actinobacillosis.
- b) Carcasses of animals in a well-nourished condition showing uncomplicated localized lesions of actinomycosis and actinobacillosis be passed after the infected organs or parts, such as head have been removed and condemned.

**7.6.1.2 Anaemia** — with emaciation.

**7.6.1.3 Anthrax** — Detailed instructions to be followed in dealing with anthrax infected carcasses shall be as given in Annex B.

### **7.6.1.4 Blackleg**

**7.6.1.5 Bruising** — general, extensive and severe, with or without gangrene.

**7.6.1.6 Cysticercus bovis** (measly beef) — if generalized in the meat substance.

- a) **Head** — Prior to inspection the tongue shall be detached sufficiently from the head bones, by an employee of the establishment to allow a proper inspection to be made of the internal muscles of mastication. These muscles shall be inspected after incising them in such a manner as to split the muscles in a plane parallel with the lower jaw-bone. The masseter muscles also shall be incised, splitting the entire external layer between the outer and intermediate fasciae.
- b) **Heart** — The preparation and inspection of heart shall conform to one of the following methods:
  - 1) The surface of the heart shall be examined and a longitudinal incision made extending from base to apex through the wall of the left ventricle and the interventricular septum, after which the cut surfaces and the inner surfaces of the ventricles shall be inspected.
  - 2) After the external surface of the heart has been inspected, the organ shall be prepared for further inspection by an establishment employee severing its attachments and cutting through the interventricular septum and such other tissues as will permit him to evert the organ completely. The inspector shall then examine the interior surfaces and make not more than four deep, lengthwise incisions into the muscles of the septum and left ventricular wall, unless the presence of cists is suspected, when more incisions shall be made. Under this method, care shall be taken not to cut completely through the walls of hearts to be passed without restriction. If it is necessary to maintain the identity of hearts, the establishment shall provide consecutively numbered tags and appropriately mark the carcasses and hearts.

- c) **Final inspection of retained carcasses** — The external and internal muscles of mastication, the heart, and the muscular portion of the diaphragm including its pillars, should be carefully and thoroughly sliced to ensure the finding of all cysts. Prior to the inspection of the diaphragm its peritoneum shall be removed. The tongue shall be carefully inspected by palpation, and if the presence of cysts in the muscles of this organ is suspected, the tongue shall be thoroughly sliced and all parts closely examined for cysts. In addition, the muscles of the oesophagus, the exposed muscles and cut muscular surfaces of the split carcass shall be inspected. Incisions may be made to expose additional surfaces for inspection, but unnecessary mutilation of carcasses which may be passed shall be avoided.
- d) Carcasses of cattle (including the viscera) infested with tapeworm cyst; known as *Cysticercus bovis* shall be condemned if the meat is watery or discoloured. Carcasses shall be considered excessively infested if incisions in various parts of the musculature expose on most of the cut surfaces two or more cysts within an area or the size of the palm of the hand.
- e) A carcass in which infestation with *Cysticercus bovis* is limited to one dead and degenerated cyst may be passed for food after removal and condemnation of the cyst.
- f) The inspection for *Cysticercus bovis* may be omitted in the case of calves under 6 weeks in age. The routine inspection of calves over 6 weeks in age for *Cysticercus bovis* may be limited to a careful examination of the surface of the heart and such other surfaces as are rendered visible by the process of dressing.

**7.6.1.7 *Cysticercus cellulosae* (measly pork)** if generalized in the meat substance — Carcasses of hogs affected with tapeworm cysts (*Cysticercus cellulosae*) may be passed for cooking but if the infestation is excessive, the carcass shall be condemned.

**7.6.1.8 Dropsy (general)**

**7.6.1.9 Emaciation** — general, pathological (associated with disease).

**7.6.1.10 Erysipelas, acute, swine**

**7.6.1.11 Fever (acute)**

**7.6.1.12 Foot-and-mouth disease (acute)**

**7.6.1.13 Goat pox**

**7.6.1.14 Haemorrhagic septicaemia**

**7.6.1.15 Immaturity, stillborn or unborn carcasses** — A carcass shall be considered too immature to produce wholesome meat if:

- a) the meat has the appearance of being water-soaked, is loose and flabby, tears easily, or may be perforated with the fingers;
- b) its colour is greyish-red;
- c) good muscular development as a whole is lacking, especially noticeable on the upper shank of the leg where small amounts of serous infiltrates or small oedematous patches are sometimes present between the muscles; and
- d) the tissue which later develops as the fat capsule of the kidneys is oedematous, dirty yellow or greyish-red, tough and intermixed with islands of fat.

**7.6.1.16 Jaundice (pronounced)** — Carcasses showing any degree of icterus with a parenchymatous degeneration of organs, the result of infection or intoxication, and those which show an intense yellow or greenish-yellow discolouration without evidence of infection or intoxication, shall be condemned. Carcasses affected with icteric-like discolouration, the result of conditions other than

those stated before, but which lose such discolouration on chilling, may be passed as fit for human consumption.

**7.6.1.17 Johne's disease** — accompanied by emaciation or anaemia.

**7.6.1.18 Lymphadenitis, caseous**

**7.6.1.19 Malignant neoplasms** — unless localized in situation and effect to one organ.

**7.6.1.20 Mammitis** — acute and septic.

**7.6.1.21 Melanosis** — generalized or any generalized pigmentation.

**7.6.1.22 Metritis** — acute and septic.

**7.6.1.23 Peritonitis** — acute, diffuse-septic.

**7.6.1.24 Pericarditis** — septic.

**7.6.1.25 Pneumonia** — gangrenous.

**7.6.1.26 Pyaemia** — including joint-ill or umbilical pyaemia.

**7.6.1.27 Rabies**

**7.6.1.28 Rickets and malnutrition**

**7.6.1.29 Rinderpest**

**7.6.1.30 Sarcocysts** — if generalized in the musculature and visible to the naked eye.

**7.6.1.31 Septicaemia, or septic intoxication**

**7.6.1.32 Sheep pox**

**7.6.1.33 Swine fever**

**7.6.1.34 Surra**

**7.6.1.35 Tetanus**

**7.6.1.36 Trichinosis** — Inspect the principal locations of trichinae in the musculature, namely:

- a) the coastal muscles;
- b) pillars of the diaphragm; and
- c) the tongue, masticatory and neck (laryngeal muscles and muscles of the shoulders, loins, abdomen and groins. The macroscopical appearance of trichinae is that of numerous white specks in the meat, which is calcified making a grating or gritty sound on the knife when cut. Samples of small strips of muscles 6 or 8 in number for microscopical examination may be cut as follows:
  - 1) two from the pillars of diaphragm,
  - 2) two from the muscles (psoas) situated on either side of the kidneys, and
  - 3) two from the tongue or muscles of larynx.

**7.6.1.37 Tumours** — multiple in musculature

**7.6.2** In all cases in which evidence of disease not enumerated in 7.6.1 is found the organ or portion of the carcass affected by the disease, and the organs or portions contiguous thereto, shall be condemned.

**7.6.3** Flesh or organs or carcasses falling under one or more of the following conditions which render them unwholesome, unsound or otherwise unfit for human consumption, shall be condemned:

- a) Diseased conditions caused by bacteria which are pathogenic to the human being;
- b) Diseased conditions caused by animal parasites (resident in edible parts) that are pathogenic to the human being;
- c) The presence of poisonous substance in the flesh. Such poisons may be: (1) bacterial poisons or toxins generated in the living body by pathogenic bacteria, or produced post-mortem putrefactive bacteria, or (2) mineral or vegetable poisons introduced into the living animal or added to the flesh as a preservative after death;
- d) Structural alterations that render the flesh, organs or the carcass unsightly or otherwise repulsive in appearance; and
- e) Conditions that render the flesh innutritious.

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## Annex A (normative)

### Procedure for the disinfection of abattoirs

#### A.1 Chemical disinfection

The following chemicals are used as disinfectants.

**A.1.1 Quicklime** — freshly slaked.

**A.1.2 Lime-water** — in concentrations of 1: 3 or 1: 20.

**A.1.3 Chloride of lime (CaOCl<sub>2</sub>) (bleaching powder)** — to be used suspended in water in concentrations of 1: 3 or 1: 20.

**A.1.4 Concentrated chloride of lime** — soluble in water and containing 70 percent active chlorine; to be used in concentrations of 2.5 or 7 percent (w/v) in water.

**A.1.5 Chloramine-T (CH<sub>3</sub>.C<sub>6</sub>H<sub>4</sub>.SO<sub>2</sub>NCINa.3H<sub>2</sub>O) (Sodium p-toluene sulphonchloramide)** — containing 22 percent active chlorine; to be used in concentration of 2.5 or 7 percent.

**A.1.6 Solution of cresol (CH<sub>3</sub>.C<sub>6</sub>H<sub>4</sub>.OH)** — stabilized by soap and diluted with water to a concentration of 2.5 percent (w/v).

**A.1.7 Cresol-sulphuric acid mixture** — a mixture of two parts of crude cresol and one part of sulphuric acid diluted with water to a concentration of 3 percent.

**A.1.8 Phenol (C<sub>6</sub>H<sub>5</sub>OH)** — crude phenol diluted with water to a concentration of 3 percent.

**A.1.9 Corrosive sublimate (mercuric chloride) (HgCl<sub>2</sub>)** — one percent (w/v) aqueous solution. As this is poisonous, it should be neutralized after 24 h by a 0.5 percent (w/v) solution of potassium sulphide (K<sub>2</sub>S).

**A.1.10 Formalin** — one percent (w/v) aqueous solution.

**A.1.11 Quaternary ammonium compounds**

#### A.2 Efficacy of disinfectants

**A.2.1** The efficacy of a disinfectant depends upon the resistance of the contaminating agents which may be divided into the following two groups:

- a) Those which are easily destroyed together with those which do not leave the animal body. In these cases, a simple cleansing of walls, floors, doors and tools with limewater (1: 20) or with a suspension of bleaching powder (1: 20) suffices. For metal parts, an aqueous solution of cresol or phenol is preferable.
- b) Those which are not easily destroyed and which are communicable to other animals, for example:

anthrax	pox
blackleg	scabies
foot-and-mouth disease	septicaemia
fowl cholera	swine fever

In these cases, manure, straw, etc, should be burned, burned or disinfected by storage for a long period and in some cases, mixed with slaked lime. Liquids, such as blood and water, should be disinfected with a 30-percent suspension of chloride of lime. For walls, floors, instruments, etc, most of the disinfectants mentioned above may be used. Metal tools or instruments should be sterilized by heat if possible; otherwise, a solution of cresol or phenol is quite effective. This solution may also be used for wooden tools, rubber boots, etc.

**A.8 Other means of disinfection**

Steam, dry heat and burning are also very effective. Instruments, tools, etc, may be disinfected by immersion in boiling water for 15 min. A 3-percent solution of washing soda (sodium carbonate) or soap is useful for this purpose. Hooks, handles, covers, etc, should be scrubbed in boiling water or solution or washing soda.

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**Annex B**  
(normative)

**Procedure to be adopted in dealing with anthrax infected carcasses in abattoirs**

**B.1 Procedure**

**B.1.1** On opening a carcass, if lesions suspicious of anthrax are detected (that is, enlarged spleen, dark tarry coloured blood and in swine, oedema of the throat), further skinning and dressing of the carcass in question and those in close proximity shall be stopped immediately and work in that part of the abattoir suspended until diagnosis has been made microscopically.

**B.1.2** In case anthrax is diagnosed, action as given in B.1.2.1 to B.1.2.3.5 shall be taken.

**B.1.2.1 Administrative action**

**B.1.2.1.1** Slaughter of animals in the abattoir shall be suspended until further orders.

**B.1.2.1.2** The entry of all persons other than those actually required for work of disinfection, shall be prohibited.

**B.1.2.1.3** Local Authority shall be informed immediately either by telephone or by messenger.

**B.1.2.1.4** Medical inspection of all persons exposed to infection shall be arranged.

**B.1.2.2 Executive action**

**B.1.2.2.1** Affected carcasses shall be condemned together with its offals and hide and disposed of as laid down in B.1.4.

**B.1.2.2.2** All carcasses on the floor are liable to contamination with infected blood and other material and more especially those in close proximity to the affected one. Carcasses in which there is any suspicion of anthrax contamination shall be condemned and disposed of according to the details given in B.1.4.

**B.1.2.3 Disinfection**

**B.1.2.3.1** The hands, feet and arms of all workers in the abattoirs shall be washed in 2 percent cresol solution. If available, gloves and overalls shall be worn by personnel handling infected or suspected anthrax carcasses.

**B.1.2.3.2** instruments like knives, steel, clothing, aprons and ropes, if exposed to contamination shall be boiled for 30 minutes.

**B.1.2.3.3** Boots and belts of personnel likely to be contaminated shall be scrubbed with a hot solution of washing soda and soap and then soaked in 2 percent cresol for 30 minutes.

**B.1.2.3.4** That part of the floor of the slaughter house where the affected carcass lay, and any part of the floor, walls, or fittings that may have been contaminated by blood or discharges from the affected animals, should be thoroughly flamed with a blow lamp. Thereafter, the whole floor, walls and fittings shall be thoroughly disinfected with 5 percent cresol solution.

**B.1.2.3.5** Re-opening of the slaughter house shall be permitted when the meat inspector in-charge is satisfied that disinfection has been thoroughly carried out, preferably within 24 hours. The meat inspector in-charge shall personally supervise every stage of the outlined procedure.

**B.1.3** The procedure given in B.1.3.1 and B.1.3.2 shall be adopted in dealing with deaths from anthrax amongst animals awaiting slaughter in lairages and pens attached to slaughter houses.

**B.1.3.1** Blood smears shall be taken from all animals which die whilst awaiting slaughter and examined for anthrax.

**B.1.3.2** In case anthrax is diagnosed, the procedure given in B.1.3.2.1 to B.1.3.2.5 shall be adopted.

**B.1.3.2.1** 'In-contact' animals shall be isolated and those with temperature of 103°F and above shall be segregated in the same pen and blood films examined.

**B.1.3.2.2** Positive cases shall be destroyed and carcasses burnt or hurried.

**B.1.3.2.3** Animals with normal temperature may be slaughtered but blood films and spleen smears shall be examined for anthrax and the carcass passed for food only if these are negative.

**B.1.3.2.4** No other animals shall be slaughtered at the same time and the slaughter house shall be clear of all other animals and carcasses.

**B.1.3.2.5** Disinfection of pens shall be carried out.

**B.1.4** The anthrax carcass shall be destroyed effectively, that is, either by burning in a meat destructor or by proper burial. In the latter case, burial should be 2 metres deep with carcass surrounded on all sides by quicklime in a place remote from any house, water supply or animal pasture. When removing the carcass for disposal, all its orifices shall be plugged with tow soaked in 5 percent cresol and the body should be wrapped in sacking which has been similarly soaked. The byre, stable, sty or sheep-fold shall be disinfected with 5 percent cresol, using long handled brushes, and then washed over with freshly chlorinated limewash.

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