CODE OF PRACTICE
No. (12)/2011

Hygiene Practices in Slaughterhouses

Endorsed by BOD
30 October 2011
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I. Introduction

Meat has traditionally been viewed as a vehicle for a significant proportion of human food-borne disease. Although the spectrum of meat-borne diseases of public health importance has changed with changing production and processing systems, continuation of the problem has been well illustrated in recent years by human surveillance studies of specific meat-borne pathogens such as Escherichia coli O157:H7, Salmonella spp., Campylobacter spp. and Yersinia enterocolitica, etc. Salmonella is a pathogen of concern in raw meat products, and E. coli O157:H7 represents a potential health hazard in beef products. Salmonella and Campylobacter are the primary pathogens of concern in poultry products.

Meat hygiene is by nature a complex activity. Hygienic slaughter and dressing operations, in conjunction with veterinary ante-mortem and post-mortem inspection, are essential in minimising the risk of contaminating meat with pathogenic organisms. Irrespective of the scale and complexity of the business, there is an absolute duty on the management and staff to ensure that they produce safe food, which is suitable in every way for its intended end use.

This Code of Practice is intended as a reference source for the red meat and poultry slaughterhouses management, inspection personnel and slaughterhouse operators and is drafted to provide further detailed information encompassing the clauses stated within Regulation (6) pertaining to food hygiene throughout the food chain.

The purpose of a meat inspection program is to provide consumers with safe and wholesome meat products. To achieve this, plant management and inspection personnel have responsibilities to assume and roles to play in day-to-day operation of establishments.

The regulation articles stated below are those food hygiene requirements stated within Regulation No. 6 “Food hygiene throughout the food chain” which encompass the key food hygiene practices that would be in place in any food business.

II. Related Documents

The following legislation issued by ADFCA are relevant to this Code of Practice and recommended to be read in conjunction with:
- ADFCA Regulation No (6) pertaining to Food Hygiene throughout the food chain 2010.
- ADFCA Regulation No (4) pertaining to Animal Registration and Identification 2010.
- ADFCA regulation no. (3) for the year 2008 “Recall and Traceability of feed & food”.

III. Scope and Objectives

The scope of this code includes individuals and organizations to any special hygienic measures required by the ADFCA. Slaughter plants operating in the primary red meat and poultry processing sector and may also be applied to other types of animal slaughterhouse from which meat is derived, Subject to any special hygienic measures required by ADFCA.

The scope of this code covers hygiene provisions for raw and, from the time of live animal production up to the point of shipping.

NOTE: exporter slaughterhouse may need additional demands to be placed on operations for the purpose of export.

This Code of Practice deals with various parameters that can ensure meat is produced according to Islamic rules, from healthy animals and in a hygienic manner. This includes:
- The establishment design, construction, and its environment (i.e. licensing Location, design, air quality, water supply, drainage, waste disposal, maintenance, etc.) and equipment.
- Personnel work practices and Operations (i.e. Receiving of Livestock, Slaughter and Dressing Operation guidelines) inspection guidelines, management, Personal hygiene and sanitation procedures.

This CoP is intended for slaughterhouses operating in the primary red meat and poultry sector. It describes the necessary steps to ensure that contamination in the slaughterhouse is controlled and kept to the minimum to enable the business to consistently produce meat that is safe for human consumption.

Regulation 6 requires business operators to implement a food safety management system based on HACCP principles. Further guidance from ADFCA will be issued to assist in this process.

IV. Definitions

In addition to the definitions stated in the Food Law no. (2) for the year 2008 and its regulations, the terms and expressions indicated below shall apply unless the text indicates otherwise.

Animal

Animals of the following types:
- Domestic ungulates (i.e. bovine, sheep, goats, etc).
- Domestic solipeds (i.e. firm-hoofed animals).
- Domestic birds i.e. poultry.
- Lagomorphs such as rabbits.
- Farmed game.
- Farmed game birds including ratites.
- Animals as otherwise specified by the Authority.
| **Ruminants** | A ruminant is any hooved, four chambered stomach animal that digests its food in two steps, first by eating the raw material and regurgitating a semi-digested form known as cud, then eating the cud. Ruminants include cows, goats, sheep, camels, and antelopes. |
| **Meat Producing Animal** | Animals raised for the purpose of providing meat for humans. Most commonly this refers to cattle, sheep, goat, camels and buffaloes, but does not exclude other domestically managed animals. |
| **Carcass** | The body of the slaughtered meat producing animal after bleeding evisceration, removal of extremities of the limbs at the carpus and tarsus, removal of the head and tail and udder in cow and with exception of poultry, removal of skin. |
| **Competent person** | A person who has the training, knowledge, qualifications, skills and ability to perform an assigned task, and who is subject to requirements specified by the Authority. |
| **Condemned** | Inspected and judged by a competent person, or otherwise determined by the authority, as being unsafe or unfit/unsuitable for human consumption and requiring appropriate disposal. |
| **Disease or Defect** | Any abnormality affecting safety and/or fitness and suitability. |
| **Dressing** | The progressive separation of the body of an animal into a carcass and other edible and inedible parts (i.e. the removal of the hide or skin, viscera (including or not including heart, liver or kidneys), genital organs, urinary bladder, feet up to the carpal and tarsal joints, and udders of lactating animals, or animals that have given birth or that are in an advanced state of pregnancy. Dressing may or may not include removal of the head and splitting the carcass in the midline). |
| **Equivalence** | The capability of different meat hygiene systems to meet the same food safety and/or suitability objectives. |
| **Good Hygienic Practice** | All practices regarding the conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain. |
| **Meat** | All parts of the animal that are intended for, or have been judged as safe and suitable for, human consumption. |
| **Poultry** | Any domesticated bird including chickens, turkeys, ducks, geese, pigeons, quails, and guinea fowls. |
| **Meat hygiene** | All conditions and measures necessary to ensure the safety and suitability of meat at all stages of the food chain. |
| **Meat preparation** | Raw meat which has had food, seasonings or additives added to it. |
| **Organoleptic inspection** | Using the senses of sight, touch, taste and smell for identification of diseases, abnormalities and defects. |
| **Custom slaughterhouse** | Premises, approved and registered by the controlling authority, where private individuals can have their own animals slaughtered and dressed, after inspection, for consumption by themselves or their families. |
| **Ant mortem inspection** | Any procedure or test conducted by competent person on live animals prior to slaughter to ensure adherence to animal health and welfare rules to determine the fitness of animals intended for slaughter and avoidance of admission of sick or harassed animals into abattoirs building and slaughter chain. |
| **Post-mortem inspection** | Any procedure or test conducted by a competent person on all relevant parts of slaughtered/killed animals for the purpose of judgement of safety, fitness/suitability and disposition including laboratory-based testing. |
| **Slaughterhouse** | Any licensed establishment used for the slaughter of animals in accordance with appropriate hygienic practices for the purposes of producing animal products. |
| **Potable water** | Drinking water that is pure and healthy at the point of usage. |
| **Manufactured Meat** | Products resulting from the processing of raw meat or from the further processing of such processed products, so that when cut, the cut surface shows that the product no longer has the characteristics of fresh meat. |
| **Edible** | Fit for human consumption. |
| **Lux** | The unit of illumination that can be interpreted as the illumination on a surface at a specified point of one metre distance from light source. |
| **Veterinary Inspector** | An official inspector who is professionally qualified as a veterinarian and carries out or supervises official meat hygiene activities as specified by the Authority. |
| **Slaughter (Dhabh)** | Involves severing of the animal’s trachea, esophagus, common carotid arteries and jugular veins. This method is mostly used in case of sheep, cattle and birds. |
| **Slaying (nahr)** | Carried out by stabbing the animal in the lower part of the neck, then severing, with a knife, down through the upper part of the chest. This method is mostly used in case of camels. |
| **Offals** | The fresh meat other than that of carcass (muscles) even if it is naturally attached to the carcass (kidneys), viscera is the offal found in the thoracic, abdominal and pelvic cavities including trachea and oesophagus. |
| **Carrion** | The animal which dies a natural death and is not slaughtered in due form, the term also applies to any part cut from the body of an animal before it is slaughtered. |
| **Strangled animal** | The animal which dies from asphyxia. |
| **Fatally beaten animal** | The animal which has died as a result of severe beating by a stick, or any other object, (exception to these are birds or game animals shot dead by arrows or bullets with the intention of hunting). |
| **Horn-butted animal** | The animal which has died as a result of butting by horns of another animal. |
| **Animal which has been dedicated to any, other than God** | The animal upon which at the time of slaughter, a name other than that of God was invoked, such as the name of an idol or false deity. |
V. Hygiene Requirements for Slaughterhouses

1. Plant Construction and Equipment

1.1 Layout and Design

1.1.1 Site (Outside property) & Buildings

[Article 12]
"The food establishment shall be located in suitable location, kept clean and maintained in good condition.
(a) The establishment shall not be located anywhere where, after considering such protective measures, it is clear that there will remain a risk to food safety or suitability. In particular, establishments should normally be located away from:
   i. Environmentally polluted areas and industrial activities.
   ii. Areas prone to infestations of pests.
   iii. Areas where wastes, either solid or liquid, cannot be removed effectively"

Guide to Compliance:
As the establishment design location, and structure is one of the main factors influencing food contamination, Plants should be located at a site which is free from conditions that might interfere with the sanitary operations essential requirements (e.g., set reasonably apart from proximity to identified sources of contamination. Roadways/Surroundings are maintained in manner that minimizes any potential environmental hazards.
1. Access for animals - either by road, rail and/or stock route - would be assured.
2. The land acquired for the proposed slaughterhouse should be sufficient to permit future expansion as overcrowding of facilities may give sanitation problems

NOTE: Since there are specific technical considerations with respect to site selection, design, construction, equipment, and operation of slaughter plants, it is recommended that operators proposing new plants or major revisions to existing plants retain the services of consultants knowledgeable in the relevant industries

1.1.2 Licensing

[Article 3]:
"The food business operator within the Emirate shall abide by the licensing requirements issued by the Authority"

Guide to Compliance:
As part of the licensing process, prior approval by the Authority is required on matters relating to food safety and hygiene. The Authority (ADFCA) will issue a Food Inspection Certificate when it is satisfied that the food premise is in compliance with food safety and food hygiene requirements and adequate standards are reached to protect the consumer. The issued food inspection certificate shall be displayed in a prominent place in the food premises.

Food business operators in Abu Dhabi are required to abide by ADFCA’s requirements for licensing food premises according to Food Law No (02) of 2008. Therefore, meat slaughtering businesses shall comply with all requirements issued by the Authority including those pertaining to food hygiene.

When planning a slaughterhouse the following shall be considered:

(a) A plot plan showing the boundaries of the plant property (belongings); location of the plant in respect to other buildings or structures; streets; driveways and parking sites including drainage systems and surfaced materials (e.g. gravel, pavement, etc.); sewer lines; gas and water mains; and power lines. The scale and the north point should be shown;
(b) A floor plan of each level of the plant, showing the purpose for which each room is to be used, location of walls, partitions, windows, doors, conveyor rails and all equipment (including draw-off fans, refrigeration units, hose bibs, sanitizers, and hand-wash stations);
(c) A floor plan showing location and size of floor drains, location and size of direct drains for pieces of equipment using large amounts of water; curbing, gutters and slope of floor towards drains, and the hot and cold water outlets;
(d) The exterior elevations of the building, showing doors, windows, and platforms;
(e) A cross section of the plant showing ceiling and rail heights;
(f) A roof plan showing skylights, vents, drainage and other pertinent information;
(g) A schedule of room “finishes” would be on or attached to the plans, including a schedule of door sizes, construction and type of door frame; lighting intensity for each room;
(h) An equipment layout with accompanying “flow charts” of operations. The design and construction of the equipment would be shown and, where necessary, cross-sections provided to show method of construction and operation; and
(i) Where the plans refer to significant alterations or changes within an existing plant, the existing layout and construction should be attached to explain the nature, extent, and effect of proposed changes.
(j) The plans may also include the following information:
   i. The sewage disposal system to be used (e.g., municipal or private).
   ii. The ventilation system.
   iii. The procedures for blood collection or disposal.
iv. Complete details of the water supply. The water treatment facility if present, would be described.

v. The method of handling and disposal of inedible and condemned products is to be identified.

vi. The ambient temperature of reduced temperature rooms.

1.1.3 Layout and Design

[Article 13]:

“The layout, design, construction and size of food establishment shall:

a. Permit adequate maintenance, cleaning and/or disinfection.

b. Minimize air-borne contamination and provide adequate working space, freedom of movement and prevention of stacking, while considering an appropriate workflow of operations to allow for the hygienic performance.

c. Allow for protection against the accumulation of dirt, condensation, contact with toxic materials, the shedding of particles into food and the formation of undesirable mould on surfaces with risk of direct contamination with food.

d. Ensure that structures within the food establishment are built of durable materials that are easy to maintain, clean and, where necessary, disinfect.

e. Permit good food hygiene practices, including protection against cross-contamination, pest access and infestation.

f. Provide separation by partition, distance, location or other effective means, between those operations which may cause cross contamination.

g. Where necessary, provide suitable temperature and humidity controlled handling conditions of sufficient capacity.”

Guide to Compliance:

A slaughterhouse should be designed to ensure the flow of operations from the live animal holding area through to shipping areas. Meat products should, therefore, proceed progressively through cleaner areas of the operation, without backtracking, crosses and intersections with dirty areas or areas where the product was previously handled. Clean and dirty areas would be physically and operationally adequately separate.

1.1.4 Size and Construction

1.1.4.1 The facility's design and construction should be in accordance with Regulations No (6) for the year 2010 related to Food hygiene throughout the Food Chain. Buildings and facilities shall be sound, adequately ventilated, provided with good lighting and can be easily cleaned.

1.1.4.2 There should be a reasonable relationship between the size of slaughter facilities and their maximum daily production capacities.

1.1.4.3 Buildings should be sealed to prevent rodent entry. Doors in particular, should be tight fitting and all drains leading to the exterior should be fitted with rodent traps. Security, accessibility and visits to the premises should be controlled.

1.1.4.4 Slaughterhouses would have adequate and hygienic lairage facilities or, climate permitting, waiting pens that are easy to clean and disinfect. These facilities should be equipped for watering the animals and, if necessary, feeding them. The drainage of the wastewater should not compromise food safety.

1.1.4.5 They should also have separate lockable facilities or, climate permitting, pens for sick or suspect animals with separate draining and sited in such a way as to avoid contamination of other animals, unless the ADICCA considers that such facilities are unnecessary.

1.1.4.6 Animals is respected. Their layout should facilitate ante-mortem inspections, including the identification The size of the lairage facilities should ensure that the welfare of the of the animals or groups of animals.

1.1.4.7 have a sufficient number of rooms, appropriate to the operations being carried out

1.1.4.8 have a separate room for the emptying and cleaning of stomachs and intestines, unless the competent authority authorises the separation in time of these operations within a specific slaughterhouse on a case-by-case basis;

1.1.4.9 ensure separation in space or time of the following operations:

a) sticking and bleeding.

b) in the case poultry; scalding & defeathering.

c) evisceration and further dressing.

d) handling clean guts and tripe.

e) preparation and cleaning of other offal, particularly the handling of skinned heads if it does not take place at the slaughter line.

f) packaging offal.

g) dispatching meat.

1.1.4.10 have installations that sufficiently elevated & spaced so as to prevent contact between the meat and the floors, walls and fixtures.

1.1.4.11 have slaughter lines (where operated) that are designed to allow constant progress of
the slaughter process and to avoid cross-contamination between the different parts of the slaughter line. Where more than one slaughter line is operated in the same premises, there should be adequate separation of the lines to prevent cross-contamination.

1.1.4.12 There should be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption.

1.1.4.13 There should be a separate place with appropriate facilities for the cleaning, washing and disinfection of means of transport for livestock. However, slaughterhouses need not have these places and facilities if the competent authority so permits, and official authorised places and facilities exist nearby.

1.1.4.14 They should have lockable facilities reserved for the slaughter of sick and suspect animals. This is not essential if this slaughter takes place in other establishments authorised by the competent authority for this purpose, or at the end of the normal slaughter period. However, where present these facilities should be:
   a. easily accessible from pens containing “suspect” or injured animals;
   b. constructed with suitable facilities for hygienic storage of parts derived from “suspect” or injured animals; and

1.1.4.15 If manure or digestive tract content is stored in the slaughterhouse, there should be a special area or place for that purpose and storage would be performed according to the appropriate hygienic measures.

1.1.4.16 They should have an adequately equipped lockable facility or, where needed, room for the exclusive use of the veterinary service.

1.1.4.17 The slaughter area shall be physically separated from the customer waiting area by a solid wall not less than 1 metre high customers should be able to view their animals in public slaughter houses.

1.1.4.18 Appropriate separation of areas as following:
   a) Sticking and Bleeding areas should be separated from dressing areas (either physically or by distance), so that cross-contamination of animals is minimised.
   b) Areas for skin and hides removal, or similar operation in poultry plants e.g. (scalding, defeathering), should also be appropriately separated from dressing areas.
   c) Evisceration and further dressing.
   d) Where necessary, there are separate rooms for each of the following activities:
      i. Preparation and cleaning of other offal, particularly the handling of skinned heads if it does not take place at the slaughter line.
      ii. Handling, emptying and cleaning of alimentary tracts and further preparation of clean guts and tripes.

   iii. Handling and dispatching of meat and edible parts of animals after they have been designated as such.
   iv. Storage and packaging of inedible animal parts as hides, horns, hooves, feathers and inedible fats

1.1.4.19 Have adequate space to hold livestock before slaughtering

1.1.4.20 The risk of infestation with vermin must be prevented & controlled.

1.1.4.21 The structure and space provided is adequate for the throughput.

1.1.4.22 Special facilities may be required for conditional slaughter and dress of “suspect” or injured animals. These facilities should be:
   a. easily accessible from pens containing “suspect” or injured animals;
   b. constructed with suitable facilities for hygienic storage of parts derived from “suspect” or injured animals; and

1.1.4.23 Constructed and equipped in a manner that facilitate effective cleaning and sanitising.
   Lighting, temperature, humidity and ventilation are at appropriate levels for each process, inspection or storage area, to ensure that safety and quality of the product are protected.

1.1.4.24 Roofing is recommended to be made of material that:
   a) protect and allow the slaughter process to be independent of the weather;
   b) provide shade;
   c) keep down the internal temperature; and
   d) Enable the collection of rainwater in water tanks.

1.1.4.25 Adequate facilities should be provided to securely store chemicals, such as cleaning materials, lubricants, branding inks, and other hazardous substances so as to prevent accidental contamination of meat.

1.1.4.26 All external windows, doorways and other openings that would admit insects should be equipped with insect control devices, screens, seals, etc. Screens should have a 1.5mm mesh.

1.1.4.27 Catch trays should be emptied and cleaned frequently. A record of the number of flies caught should be maintained as part of a pest control program. The ultraviolet lights should be replaced regularly, in accordance with the manufacturer’s instructions.

1.2 Suitability of General construction guidelines
1.2.1 Floors

[Article 44]:
“Floor surfaces shall be made of impervious, waterproof, non-absorbent, non-slip, washable and non-toxic materials, allowing adequate cleaning and surface drainage. Where appropriate, floors should slope sufficiently for liquids to drain to trapped outlets.”

**Guide to Compliance:**

Rooms or areas where fresh meat is produced, stored or transported through, the following prerequisites should apply:

- a) Have waterproof flooring, which is:
  - i. Made of non-slip material
  - ii. easy to wash, clean and disinfect
  - iii. sloped sufficiently to prevent water stagnation and drained off to trapped outlets protected by grilles
- b) Walls, if any, should be smooth, durable, made of impermeable material with a light-coloured, washable coating. Walls may be made of local construction materials, which can be cleaned by water, e.g. stone, lava blocks, bricks or concrete.
- c) Doors should be hard-wearing, non-corrodible and impermeable on all surfaces.
- d) Insulation materials which are rot-proof and odourless should be used.

1.2.2 Walls and Ceiling

Regulation 6-

[Article 48]:
“Angles between walls, walls and floors and between walls and ceilings should be sealed and covered to facilitate cleaning operations.”

**Guide to Compliance:**

- a. Wall / floor junctions should be suitably rounded.
- b. Ceilings should be constructed and finished as to prevent condensation, leakage, and formation of moulds and can be easily cleaned.

1.2.3 Doorways and Doors

[Article 49]:
“Doors shall be made of smooth and non-absorbent surfaces, self-closing, be easy to clean, and where necessary, disinfect.”

**Guide to Compliance:**

- a. Exterior doors do not open directly into the areas where bodies of animals are dressed or meat may be present.
- b. Access doors shall be where possible, self closing and provide an airlock to prevent ingress of dust, odours, vapour and other contaminants.
- c. Doors should be tight fitting.

1.2.4 Water supply:

[Article 65]:
“An adequate supply of potable water with appropriate facilities for its storage, distribution and temperature control, shall be available at all times to all areas and equipment including ice makers and drinking water taps.”

**Guide to Compliance:**

- a. There must be an adequate supply of potable water meeting the requirements of the of UAE standards
- b. Both hot and cold water should be supplied and the temperature of water for sterilising equipment must not be less than 82°C. The water must be changed regularly to ensure that it is kept clean. Water for hand washing should be at a temperature of 42°C ± 3°C.
- c. Storage tanks should have the following specification:
  - i. Must be covered.
  - ii. Constructed of only inert materials.
  - iii. Provided with lockable inspection hatch.
  - iv. Should have water inlet and outlet at the top and bottom of the tank, respectively.
  - v. Have screened vent pipes.
- d. All water used in a processing plant should be potable as outlined in the UAE relevant technical rules (i.e. mainly No. (1025) and (148)). In exceptional cases, the use of non-potable water has been authorised for steam production, for fire fighting or the cooling of refrigeration equipment. These exceptions can only be permitted, provided that the pipes installed for this purpose preclude the use of this water for other purposes and presents no risk of contamination of fresh meat. Non potable water pipes should be clearly distinguished from those used for potable water.
- e. To assess the quality of the water supply, microbiological analysis should be carried out on samples taken at various sites around the plant on a monthly basis. To ensure that the water sample gives a true picture of the water supply, it is essential that the correct sampling technique be used.
- f. Where the water supply has been chlorinated, the sample bottles should contain sodium thiosulphate to neutralise the chlorine.
g- The analysis should include TVCs at 22°C and 37°C, Total coliforms, E. coli and must comply with the following criteria:
   i. TVC @ 22°C < 100 per ml
   ii. TVC @ 37°C < 10 per ml
   iii. Total coliforms and E. coli of zero per 100 ml
   iv. Sulphite reducing Clostridia MPN ≤1 per 20 ml

h- If the sample has tested positive for faecal indicators, i.e. E.coli, the use of the sampled outlet or storage tank should be suspended and should not be resumed until sampling has demonstrated that the cause of the problem has been rectified. All other unsatisfactory results should be followed by an investigation to determine the cause. This will include physical examination of storage tanks, pipe-work and outlets and intensified sampling of the entire water supply system on the premises.

i- Chemical analysis should be carried out at least once a year.

j- Appropriate corrective action should be taken to rectify any defects noted. Records of all water sampling, investigations and corrective actions should be retained on file.

k- Organic matter may build up in the water distribution system which may interfere with water quality. Once per year the entire water supply system should be drained. All water storage tanks should be cleaned and sanitised. The system should be then flushed with clean water before it is used.

1.2.5 Electricity:

There should be adequate supply of electricity. Suitable arrangements, such as emergency generator, should be made for the possibility of power cuts or breakdowns.

1.2.6 Ventilation:

[Article 17]:
"Ventilation shall abide with the following conditions:
   a. Suitable and sufficient means of natural or mechanical ventilation shall be provided while avoiding any mechanical airflow from a contaminated area to a clean area.
   b. Ventilation opening should be provided with a screen or protecting enclosure of non-corrodible material with an easy access to filters and other parts that require cleaning.
   c. The ventilation shall be adequate to minimize air-borne contamination of food and to control ambient temperature, odors and humidity."

Guide to Compliance:

There should be adequate ventilation and good steam extraction; Ventilation systems shall be adequate to control temperature within acceptable limits. The air circulated shall be free from dust, odours and vapour. Windows cannot be possibly opened in any building used for the processing or storage of meat. Also there shall be no permanent openings directly to the outside of the building. The path of air flow shall be from edible to inedible areas.

1.2.7 Toilets and hand washing facilities:

[Article 16]:
"Adequate and conveniently located facilities for hand washing and drying shall be provided, and, where necessary, for disinfection purposes that are designated for cleaning hands with the following conditions:
   a. Facilities are provided with suitably temperature controlled, running, potable water.
   b. Facilities for washing food are separate from the hand-washing facilities.
   c. It is preferred that hand washing sinks are of the non-hand operable type."

[Article 44]:
"Adequate, suitable and conveniently located toilets shall be provided, that are adequately ventilated and connected to an effective drainage system and do not open directly into the food handling areas. Where necessary, adequate changing facilities should be provided."

Guide to Compliance:

• Establishments should have the minimum following requirements:
• Sufficient number of facilities for cleaning and disinfecting hands and for cleaning tools located as close as possible to workstations.
• Taps must not be hand operable and water should be pre-mixed to a suitable temperature (42°C ± 3°C) for cleaning and disinfecting products.
• Every wash basin shall have knee-or foot- operated taps with pre-mixed warm water at a suitable temperature and approved soap. Hand towels shall be disposable and used once only.
• Workers on slaughter lines should be able to wash their hands and disinfect their equipment without leaving their workstations. Shared facilities for other workers should be installed as near as possible to their workstations. Aprons should be washed in a cabinet to contain splash.
• Adequate supply of toilets, changing rooms and other ancillary sanitary services to be maintained at all times in a condition appropriate for a food factory.
• Showers and flush lavatories shall be provided. The lavatories shall not open directly onto work rooms or storage areas.
• Hand washing and sanitising facilities adjacent to the toilet facilities and at strategic locations throughout the plant.
• Hand washing and boot washing facilities at the entrance to the production areas/rooms.
1.2.8 Lightening

[Article 18]:
“Lighting shall conform to the following conditions:

a. Adequate natural or artificial lighting shall be provided to enable operating in a hygienic manner. The lighting intensity should be adequate to the nature of the operation.
b. Lighting fixtures and electrical wires shall be protected to allow for easy cleaning and prevention of cross contamination.”

guide to Compliance:

a. Rooms & or areas should have adequate natural or artificial lighting which should not affect colour distinction and be properly directed to the product.
b. Light bulbs should have suitable protective covers.
c. The following are the minimum light intensities, which should be ensured except for red meat slaughtering:
   i. 540 lux at Inspection points of surfaces where employees are working with food or with utensils or equipment, such as knives, sliders, grinders, or saws and their safety is a factor
   ii. 220 lux for work rooms and sick and suspect pens
   iii. 110 lux in other areas (i.e. pens).
d. For poultry the light intensities
   i. In the processing lines should not be less than 400 lux.
   ii. In inspection areas it shall not be less than (600) lux.

1.2.9 Drainage

[Article 19]:
“Drainage facilities shall conform to the following conditions:

a. Shall be of adequate size and design and appropriately installed and maintained for the intended purposes to avoid the risk of contamination and foul odours.
b. Drainage channels, including any removable perforated baskets and anti-slip grating, shall be so constructed from suitable materials and be kept in such good order, repair and condition as to minimise any risk of contamination.
c. Where drainage channels are fully or partially open, they shall be designed so as to ensure that waste does not flow from a contaminated area towards or into a clean area, in particular an area where high risk food is handled.”

guide to Compliance:

a. Suitable floor drainage appropriate to the operations carried out should be provided throughout the premises.
b. In rooms with wet operations, water should be directed to grated drains that are trapped inside and outside the building and should be equipped with effective rodent screens.
c. separate systems should be provided for the drainage of:
   i. processing rooms (effluent water)
   ii. buildings, surrounds, and roof gutters (storm water)
   iii. sanitary facilities (foul sewer)
All these drainage lines should leave the site separately.
d. Drainage lines should be positively ducted.
e. All drains should have effluent flow in the reverse direction to product flow.
f. Drainage lines from toilets should be completely separate from other drainage lines. It should be located so that if leakage develops there will be no possibility of product or equipment contamination.
g. Vents from drains, sewers and rainwater down pipes should not be located within the plant.
h. In general, manholes within the premises should be avoided. If present they should be doubly sealed and secured to prevent overflow.
i. In the case of chillers and stores, water drains may be located just outside the room.

1.2.10 Waste disposal

[Article 97]:
“Waste disposal shall conform to the following conditions:

a. Adequate standard operating procedures for storage and disposal of food waste, non-edible by-products and other refuse shall be developed and implemented.
b. Design and management of refuse stores shall ensure that premises remain clean and free of animals and pests.
c. Refuse areas shall be, where necessary refrigerated, and include suitable wash out capability.”

[Article 44]:
“All waste shall be eliminated in a hygienic and environmentally friendly way”

guide to Compliance:

1) Waste water:

a. Waste water should be ducted, piped or channelled into drains so that it does not run across the floor or contaminate fresh meat or surfaces which fresh meat may contact.
b. Where an effluent treatment plant exists on-site, it should be placed as far as possible down wind and away from the plant intake points.
c. It should be of adequate size to handle the maximum anticipated loading both in terms of volume and Biological Oxygen Demand (BOD) loading and must meet with necessary regulatory requirements set by the concerned governmental authority.
HYGIENE PRACTICES IN SLAUGHTERHOUSES

2) Animal waste material:
a- Adequate facilities for handling waste material should be provided. In particular, it should not be possible for this material to come in contact with fresh meat or carcases that have been passed fit for human consumption.
b- No store room or amenities shall be used for processing meat.
c- Eating facilities or amenities shall be independently separated from processing and storage areas.
d- Containers used for condemned material should be clearly marked and reserved for these purposes.
e- Conduits and chutes for removal of condemned or inedible material should be constructed and installed in such a way as to avoid any risk of leakage and contamination of fresh meat or dressed poultry. They should be easily cleaned.
f- Suitable watertight, covered, identifiable, pest-proof containers should be provided for the storage of inedible product pending dispatch for rendering.
g- All external skips should be sited in designated areas, away from fresh meat, which are suitably paved, drained and covered. This area should be included in the plant cleaning program and be maintained in a hygienic condition.

3) Other waste material:
Discarded wrapping, packaging and other refuse should be placed in designated bins or skips so that it does not compromise the hygiene of the premises and does not provide a habitat for pests and vermin.

1.3 Equipment and vehicles:

1.3.1 Construction and Design

[Article 22]:
“All equipment and containers other than one-only use (disposable) containers and packaging material, which comes into direct contact with food shall:
a- Be made of material which does not transmit toxic substances, odours or taste to the food, be non-absorbent, resistant corrosion and be durable to allow frequent cleaning and disinfection.
b- Be effectively cleaned and, where necessary after cleaning be disinfected, with the exception of non-returnable containers and packaging. Cleaning and disinfection shall take place at a frequency sufficient to avoid any risk of contamination.
c- Be maintained in good condition and easily repaired to minimise any risk of contamination.
d- Be installed in such a manner as to allow adequate cleaning of the equipment and the surrounding area.
e- Equipment shall be durable and movable or capable of being disassembled to allow for proper maintenance, cleaning, disinfection, and monitoring for pests. Where necessary, cleaning of large-sized equipment shall be in separate washing facilities.
f- Equipment used to cook, heat treat, cool, store or freeze food shall be designed to achieve the required temperature as rapidly as necessary and maintain it effectively.”

[Article 23]:
“Equipment referred to in article (22) above must be fitted with appropriate temperature control devices which aim to record the air temperature in the coldest part of the equipment and, where necessary, control and monitor humidity, air-flow or any other parameter that is likely to have a detrimental effect on safety and suitability of food. Temperature indicators must be clearly visible, calibrated and monitored.”

[Article 24]:
“Where chemical additives are used to prevent corrosion of equipment and containers, they shall be used in accordance with the manufacturer’s instructions for its intended use. They must not contaminate the food or affect its stability to make it unfit for human consumption.”

Guide to Compliance:
Equipment should be designed, installed and maintained in a condition where it is:
a. Suitable for its intended use
b. Easily cleaned and disinfected, where necessary, continuously during production, e.g. easy to dismantle and remove for cleaning.
c. Do not pose a contamination risk to the food e.g. lubricating oil.
d. Only food grade lubricants should be used for machines/equipment. Materials that are used in the construction of utensils, equipment and any food-contact surfaces should not allow the migration of deleterious substances or impart colors, odors, or tastes to food and under normal use conditions should be:
e. Safe and non-toxic;
f. Durable, corrosion-resistant, and non-absorbent;
g. Sufficient in weight and thickness to withstand repeated washing;
h. Finished to have a smooth, light-colored, easily cleanable surface; and resistant to pitting, chipping, cracking, scratching, scoring, distortion, and decomposition
i. Rails, racks and hooks should be of non corrosive material and arranged so as to prevent contact of meat with the wall or floor.
j. Wood is difficult to clean because of splits, which are nearly impossible to clean totally. Chlorine is therefore recommended for disinfection because it has a good germicidal effect and also decompenses different types of organic matter.
k. Tables, benches, blocks and containers should be of suitable construction and free of any crack or crevice.
l. Every refrigerated room or cooler should be equipped with a thermometer of known accuracy and have a maximum capacity as determined on the license
m. New materials containing plastics, resins, fiber glass and latex - Equipment should be designed for ease of cleaning and inspection.

n. To facilitate dismantling, quick opening devices that require simple or no tools should be provided.

o. All welded equipment, including tables and bins, should have continuous smooth and even welded joints. Junctions and corners should be coved with a minimum radius of 0.6 cm to facilitate cleaning.

p. Contamination by drippings from bearings, lubricants, gears, and motors should be prevented. Drip pans, if used, should be easily accessible for inspection and removable for cleaning.

q. When using suffers and grinders, metal detectors should be provided to reduce the number of foreign particles in meat products and to protect the equipment.

r. Pumps, piping and other conduits should be easily demountable and easily cleaned by means of dairy or sanitary-type fittings.

s. Rust-resistant metal chutes should be accessible for thorough and regular cleaning. Long chutes are discouraged, but if used, should be demountable for cleaning. Chutes leading from edible to inedible products departments should be hooded and vented.

t. Stationary or permanently sited equipment should be installed away from walls and ceilings to provide sufficient access for cleaning. Permanently mounted equipment should either be installed a sufficient distance away from the walls and floor to permit cleaning and inspection or be completely sealed to the floor.

u. Portable equipment used for collecting, holding and transferring condemned and other inedible material should be of industrial grade, non toxic plastic or rust-resistant metal, water-tight, covered, and distinctly and uniformly marked for identification.

Notes to consider:

1. Copper is not acceptable for equipment which contacts edible meat products. Copper piping should not be used when ammonia refrigeration is utilized;

2. cadmium is not acceptable in the construction of equipment used for handling edible meat products;

3. lead shall not be used in the construction of equipment contacting edible meat products;

4. equipment with painted surfaces contacting meat products is not acceptable; and

5. the use of containers or equipment made of enamel ware or porcelain is not acceptable for any purpose in connection with the handling and processing of meat products.

1.3.2 Vehicles

[Article 76]:
“a- Transport of food shall be carried out in such a way to prevent any contamination of the food, to maintain its integrity and at the appropriate temperatures.

b- Food transport vehicles, including reusable containers, shall be kept clean and maintained in good repair and conditions to protect food from contamination. The interior of food transport vehicle shall be adequately insulated with a lined interior that provides a smooth, continuous, easily cleanable waterproof surface.”

[Article 77]:
“a- Food items shall be physically separated from non-food items during transport.
b- Ready-to-eat and raw foods transported in the same vehicle shall be adequately separated to avoid cross contamination.”

[Article 78]:
“Food transport vehicles shall be capable of maintaining proper food temperatures, in accordance with the provisions applicable to temperature control stated within this regulation, and allow those temperatures to be monitored and recorded throughout the period of transport and records maintained for one year.”

Guide to Compliance:

All vehicles used to transport meat from a slaughter house should be:

a. Covered in, closed or fastened so the meat contained therein is protected from the rays of the sun and from dust, dirt, flies and other contamination.

b. Vehicles should also have joint and door seals that prevent entry of contamination

c. All such vehicles should be cleaned after each use and maintained in a sanitary manner at all times

b. Where a mark or stamp is applied directly to meat, such mark or stamp should be made from a non-toxic substance.

1.3.3 Calibration

[Article 35]:
“Temperature recording devices shall be checked at regular intervals, test their accuracy and the tolerable limits for time and temperature variations”

[Article 40]:
“All refrigeration spaces shall be equipped with temperature measurement devices with an accuracy of (+/- 1o) C.”

[Article 41]:
“Food business operators shall maintain and hold records of food temperatures and maintenance and calibration records of temperature recording devices for a period of three years.”
Guide to Compliance:

All measuring and monitoring devices used shall be:

a. Calibrated at predetermined intervals and before equipment is commissioned.
b. Identified with a suitable indicator or approved identification record to show calibration status.
c. Safeguarded from adjustments that would invalidate the calibration.
d. Used and calibrated under suitable environmental conditions.
e. Used, handled and/or stored in a manner that protect against deterioration of sufficient accuracy.
f. All refrigeration spaces shall be equipped with temperature measurement devices with an accuracy of +/- 1°C.
g. Those engaged to carry out the calibration on behalf of the company should be in possession of a certificate attesting to their competence to carry out such tasks.
h. Where analytical or microbiological tests are employed the test methods used shall be of sufficient accuracy and of known reproducibility and repeatability. Systems shall be in place to ensure accuracy of the results. Test methods should comply with statutory requirements or approved standards.
i. Where it is found that a measuring or monitoring device is outside calibration or that the accuracy of the test result is in question, appropriate corrective action shall be taken.
j. Records of the results of calibration shall be kept for a period of three years.

1.3.4 Refrigeration

[Article 29]:
“Food likely to support the reproduction of pathogenic microorganisms or the formation of toxins, should be maintained in an uninterrupted cold chain and be kept at temperatures that will prevent any risk to health.”

Guide to Compliance:

There should be an adequate supply of refrigeration to ensure that all production, storage and product areas are maintained within parameters which comply with legislative requirement. In addition, the equipment should include a system for draining off water or condensation without any possibility of contamination of the meat. Temperatures, humidity, air flow and other environmental factors should be monitored to assure process control regimes are achieved.

<table>
<thead>
<tr>
<th>TABLE-1: REFRIGERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factors to consider in chilling/freezing facilities</strong></td>
</tr>
<tr>
<td>Air must circulate efficiently around the heat source.</td>
</tr>
<tr>
<td>- Cold air must be distributed evenly through the room following a circular pattern.</td>
</tr>
<tr>
<td>- The fan should not blow air directly onto the carcasses, as the deflection from the carcasses will affect cooling of other parts of the room.</td>
</tr>
<tr>
<td>- The more the air is forced to move around the products instead of through open spaces, the better; it is preferable to have the air blown at right angles to the rails instead of along their lengths.</td>
</tr>
<tr>
<td>- Carcasses should be evenly spaced out and the room should not be overloaded. The recommended rail spaces for the different species are 660–750 cm per beef carcass, or two calf carcasses, or six sheep carcasses, with a minimum of 5 cm between carcasses.</td>
</tr>
<tr>
<td>- It is not advisable to hang different kinds of carcasses or carcasses of very different sizes in the same room because their rates of cooling will differ.</td>
</tr>
<tr>
<td>Ice on the evaporation unit insulates the refrigeration mechanism.</td>
</tr>
<tr>
<td>- Ice should be thawed and removed from the evaporation coil at regular intervals.</td>
</tr>
<tr>
<td>- Excessive ice formation, which necessitates more frequent defrosting, can be avoided by:</td>
</tr>
<tr>
<td>– not overloading the chiller;</td>
</tr>
<tr>
<td>– closing the door;</td>
</tr>
<tr>
<td>– repairing damaged insulation;</td>
</tr>
<tr>
<td>– mopping up all water during the cleaning process.</td>
</tr>
</tbody>
</table>
1.3.5 Sterilizers:

a. Should be maintained at a minimum temperature of 82°C.
b. Avoid temperatures in excess of 90°C as this causes unnecessary steam formation leading to possible condensation.
c. Should be located in all areas where knives or other similar instruments are used and should be accessible to staff. Temperature indicators are advised.
d. Should be constructed in such a manner as to provide:
   a) Complete immersion of the knife including the blade/handle junction
   b) Continuous water flow
   c) Method of emptying
   d) Independent drainage directly to a floor drain.
e. If trays are used in a plant, then proper facilities with adequate ventilation should be provided for their washing and sanitising. At a minimum, there should be three separate areas to ensure that cross contamination is not possible between clean and dirty trays.
f. There should be one area for storage of dirty trays, one area for washing and sanitising of trays and a third separate area for the storage of clean trays. In all cases cross contamination between clean and dirty trays should not be possible.
g. In the case of cutting rooms, the installation of batch sterilisers in the hygiene room is recommended. Batch sterilisation of utensils and equipment should be carried out at all breaks during the working day, in addition to the use of sterilisers by operatives during production.
h. Mobile sterilisers should have a thermometer and the water should be changed regularly to ensure that it is kept clean.

1.4 Sections, Rooms and Pens

1.4.1 Holding Rails

a. Rails in the establishment should be properly designed and constructed. Slaughter and dressing rooms, refrigerated rooms and transfer corridors shall have carcass holding rails of sufficient height and positioned away from walls to prevent any part of carcasses from touching floors or walls.
b. The rails system shall be so designed that carcasses or parts thereof cannot come into contact with each other prior to post-mortem inspection.
table 1 outlines minimum rail heights and configurations depending on species in the various sections of an establishment.
c. Minimum rail heights (3.7 - 4m for large animals and 1.9 - 2.7m for small ones)

### Table 2 – Recommended Rail Heights

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>BLEEDING</th>
<th>DRESSING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum distance from top of rail to floor</td>
<td>Minimum distance from top of rail to floor</td>
</tr>
<tr>
<td>Cattle</td>
<td>3.7 m</td>
<td>3.1 m</td>
</tr>
<tr>
<td>Calves</td>
<td>3.7 m</td>
<td>2.4m (or above level of inspection platform)</td>
</tr>
<tr>
<td>Sheep and Goats</td>
<td>2.4 m</td>
<td>2.0m (or above level of inspection platform)</td>
</tr>
</tbody>
</table>

*Note: Slight deviations from the above may be acceptable.
(3.7 - 4m for large animals and 1.9 - 2.7m for small ones)

1.4.2 Animal receiving area

The Specific Requirements applicable to slaughterhouses - animal receiving area are:

a. The receiving and lairage system shall ensure that live animals are subject to a minimum of stress, kept clean, inspected by a veterinarian and their source identity maintained.
b. Ramps or offloading docks shall be provided for the unloading of animals from transports vehicles. The ramps shall be adjustable to a maximum of 30° from the horizontal, there also shall be flooring and guide rails that present no hazards to the animals.
c. A separate area for cleaning of livestock or poultry transport vehicles and crates.
d. Adequate sheltered holding facilities shall be also provided for live birds awaiting slaughter in poultry plants. The live poultry unloading area shall be so constructed that waste and dirty water are effectively drained into manure sump to provide proper cleaning, and well ventilated no pollution shall occur to the neighbouring unit or other parts of the building.

1.4.3 Livestock Pens

a. Livestock pens, chutes and/or squeezes should be provided at all slaughtering establishments. All floors, passages and chutes should be paved, properly drained and scored to prevent slipping.
b. Acceptable feed and water facilities should be provided where necessary in all holding pens and ample hose and water outlets for cleaning of all pens and runways should be provided.
c. Chutes, ramps and inclines should be cleated or “stepped” and have a reasonable incline to prevent slipping, falling or injury.
d. As ante mortem inspection requires observation of animals in motion, space should be provided in the form of an alleyway, which can regulate their movement.
e. The following outlines the minimum requirements in livestock yards:
i. adequate drainage for each pen by individual inlets or valley-type drains along the alleyway or equivalent;
ii. water supply for watering animals and clean-up as required.
iii. Separate, covered suspect and reactor pens should be provided. Adequate covering and protection should be provided in order to facilitate ante mortem inspection under extreme weather conditions.
iv. covered pens should be provided to ensure adequate protection of livestock received for slaughter;
v. received animals should not exceed the twice the working capacity of the plant .uncovered pens may be used to hold the overflow. The welfare of animals and the possibility of environment mental pollution should be given careful consideration;
vi. adequate lighting should be provided with sufficient intensity in accordance with section 5.1.9 that the ante mortem inspection and suspect pens can be effectively conducted.
vii. rust resistant metal pipe partitions and gates are preferred; dressed lumber is the minimum acceptable;
viii. sufficient ventilation is necessary to prevent accumulation of odours and condensation;
ix. a small, rust resistant, locked metal cabinet for supplies such as ear tags, pliers and ante mortem inspection cards should be provided for the exclusive use of the ante mortem inspectors;
x. all livestock truck unloading and loading areas should drain to promote proper sanitary maintenance;
xi. properly drained and protected concrete or metal bins should be provided to hold manure unless removed immediately;

f. To meet the requirements for the humane slaughter of food animals, it is essential that:
i. all ramps and inclines used for moving animals provide safe ascent, descent and good footing;
ii. holding pens for animals awaiting slaughter have adequate lighting, ventilation and space; feeding & drinking water.
iii. suitable facilities be provided for the unloading and conveyance of crippled animals directly to the bleeding rail without dragging or undue manipulation (i.e. loader or trolley).
iv. Dragging animals is not an accepted practice for this purpose.

1.4.4 Facilities for Emergency slaughter

Special facilities may be required to slaughter and dress “injured animals that are physically incapable of passing through the normal slaughter system, provided that the ante-mortem inspection has found no signs of any disease that would prevent the use of the meat for human consumption. It could be used also for suspect animals exclusively for humane reasons, when it should proceed for immediate slaughter without delay.

a. Easily accessible from pens containing injured animals;
b. Constructed with suitable facilities for hygienic storage of parts derived from or injured animals; and
c. Constructed and equipped in a manner that facilitates effective cleaning and sanitising.

1.5 Consideration to custom slaughterhouses:

1.5.1 Entry to slaughter

Guidance to compliance:
At the entry point to the slaughterhouse there shall be a designated ante-mortem inspection room, clearly separated from the slaughter area and other facilities. All floors shall be non-slip and washable.

1.5.2 Slaughter area layout

Guidance to compliance:

a. The slaughter area shall be physically separated from the customer waiting area by a solid wall not less than 1 metre high.
b. Facilities shall be so designed as to minimize animal stress.
c. Provision shall be made for the collection and removal of blood.
d. There should be a sufficient separation between slaughter stations to allow the entry of slaughter animals and the removal of waste material without contamination of exposed meat surfaces.
e. There shall be a lockable, temperature-controlled facility to hold those carcasses that have been detained during post-mortem inspection, where further examination is required before final judgement can be made.

1.5.3 Carcass dressing

Guidance to compliance:

a. Suitable equipment shall be provided to enable the entire dressing procedure to be completed with the carcass in the hanging position without contact with floor, ceiling or walls.
b. Inedible material shall be removed from the dressing area and stored in a separate clearly isolated room or in closed containers.
1.5.4 Carcass cutting area for retail

Guidance to compliance:

a. Cutting area and its equipment shall enable the carcass to be broken down in a hygienic manner into the cuts required by the consumer.
b. Cutting boards and chopping blocks shall be of materials that can be easily cleaned with smooth surfaces. The use of wood for this purpose is prohibited.

1.5.5 Packaging area

Guidance to compliance:

a. Meat packaging materials shall be stored in a suitable hygienic, and unharmful method.
b. Packaging shall be carried out in a room separate from the slaughter and dressing areas.
c. The system shall minimize the risk of contaminating the meat by packaging materials.

1.5.6 Consumer access in retail area

Guidance to compliance:

a. There shall be a physical barrier separating consumers from areas where raw meat is prepared and packaged and also from raw unwrapped meat on display.
b. Consumer self-service cabinets should only hold wrapped meat products.

1.6 Consideration to Poultry slaughterhouse

1.6.1 General

In addition to the standard design and operational guidelines for red meat slaughterhouse, additional consideration should be given in a poultry plant's layout to ensure that products progress to cleaner and cleaner areas

a. Special rooms or facilities separate from slaughtering and eviscerating areas should be provided for collecting and holding feathers and inedible offal.
b. “Above or below the floor” channels ducts, or chuting pipes beginning directly at the point of evisceration or via the flow away trough to the inedible separating and disposal room, may be used for “fluming” the viscera and other inedible material.
c. Regular removal of inedible materials from the establishment is important.
d. In the layout of a poultry slaughter and processing establishment, the sequence of rooms and operations are generally: live receiving, shackling & hanging, bleeding, scalding, defeathering or picking, plucking, , washing, evisceration, inspection, trimming, washing, chilling, further processing (if not sold in carcass form), packaging, freezing (if not sold fresh) and shipping. Operations, such as boning, basting, cutting or packaging should be physically separated from the eviscerating operation to reduce contamination.
e. The movement of air should be up and out and restricted so as not to move with the flow of operations. A mechanical air flow system should be in place to facilitate air movement from clean towards dirty area in order to minimize the spread of contamination. It is advisable to regularly sample and examine slaughter halls air for efficient control of air contamination.
f. The floor gradient and the number and size of drain inlets should be sufficient to prevent the accumulation of fluid. Channel drains with removable grated metal covers are acceptable. The establishment should have adequate refrigeration facilities for chilling and freezing poultry. When chilling, the use of stagnant non-circulating water in non-overflowing tanks is prohibited.

1.2.2 Slaughtering

Guidance to compliance:

a. The method of slaughter shall be as humane as possible and approved by the ADFCA. All poultry shall be bled for about 90 seconds after killing. Knife sterilizer(s) with hot water maintained at 82 °C shall be provided at the killing point, and the knife used for killing of poultry shall be sterilized regularly. Bleeding shall be completed to ensure the death of the bird and shall be carried out so properly that any blood flowing outside the slaughter area shall not cause contamination of carcasses.
b. Bleeding equipment e.g. (bleeding cones) characteristically in small establishments shall be constructed of non-corrodible metal which is easy to clean.
c. Slaughterhouses operators should ensure that the construction, layout and equipment of slaughterhouses in which poultry or lagomorphs are slaughtered meet the following requirements:
d. Slaughterhouses should have a room or covered space for the reception of the birds and for their inspection before slaughter.
e. Slaughterhouses should have suitable facilities for chilled or frozen storage and in accordance with requirements stated in Regulation No (6)
f. The areas for loading and unloading poultry meat shall be roofed to avoid contamination. Slaughterhouses should:

i. have a sufficient number of rooms, appropriate to the operations being carried out;
ii. have a separate room for evisceration and further dressing, including the addition of seasonings to whole poultry carcases, unless the competent authority authorises separation in time of these operations within a specific slaughterhouse on a case-by-case basis;
iii. ensure separation in space or time of the operations.
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9. Stunning is not permitted for Birds
h. When dispatching meat, the following considerations shall apply;
I. Have installations that prevent contact between the meat and the floors, walls and fixtures
II. Have slaughter lines (where operated) that are designed to allow a constant progress of the slaughter process and to avoid cross-contamination between the different parts of the slaughter line. Where more than one slaughter line is operated in the same premises, there should be adequate separation of the lines to prevent cross-contamination.
III. Provide facilities for disinfecting tools with hot water supplied at not less than 82 °C, or an alternative system having an equivalent effect.
IV. Equipment used for chilling poultry meat, e.g. screw chillers and other edible materials shall be constructed of stainless steel or any other suitable material and shall be operated and maintained in a way as to decrease growth and multiplication of micro-organisms.
V. The equipment for washing hands used by the staff engaged in handling exposed meat should be non-hand contact, designed to prevent the spread of contamination supplied with hot & cold running water, detergent & single-use hand drying facilities.
VI. There should be lockable facilities for the refrigerated storage of detained meat and separate lockable facilities for the storage of meat declared unfit for human consumption.
VII. There should be a separate place with appropriate facilities for the cleaning, washing and disinfection of transport equipment such as crates; and means of transport. These places and facilities are not compulsory for if officially authorised places and facilities exist nearby.
VIII. Provide an adequately equipped lockable facility or, where needed, room for the exclusive use of the veterinary service.
IX. Veterinarian should supervise preoperative sanitation conditions monitoring plans, and may conduct routine program for microbiological monitoring of product contact surfaces.
X. There should be a system of referring to flock records including mortality medication and feed delivery records,
XI. Premises management should also keep kill data and location records in order to couple them with existing flock pharmaceutical records when necessary.

1.2.3 Inspection Stations

At inspection stations, a 2.4-meter hinged, warm-water flushed, stainless steel overlay should be provided for each inspector on the eviscerating line.

1.2.4 Ice Bins

Ice bins should be constructed of smooth, hard and impervious rust-resistant material such as smooth-hardened concrete, stainless steel, industrial grade non-toxic plastic or tile.

1.2.5 Goosenecks

The evisceration line should be equipped with enough warm water goosenecks to provide hand-washing facilities to all employees working along the line. The premise’s manger should ensure proper feed and water withdrawal prior to transport of birds to slaughterhouse to minimize ingesta-induced contamination during processing. Proper adjustment of the mechanical eviscerators and equipments are necessary for product quality, and processing line efficiency.

1.2.6 Removal of Feet Prior to Inspection

When poultry feet are removed prior to inspection, two initial carcass washers are required. One carcass washer is needed immediately following the defeathering process and the second, following the hock-cutting operation and transfer belt. Sprays preferably using chlorinated water at 20-30 PPM from both washers should be directed on carcass exteriors to wash below the hock and the hock surface. Water collected in the vent cavity should be removed prior to the vent being opened.

1.2.7 Scalding

a. When scalding tanks are used, particular care should be taken to ensure they are conforming to hygienic standards. The rate of flow of water into these tanks shall provide for continuous replacement of water so as to minimize the possibility of build-up of contamination.
b. The temperature of water inside the scalding tanks be 55 ± 1°C. Overscalding should be avoided as it negatively affects the acceptable production quality.
c. Tanks shall be emptied regularly at least once every working day and cleaned well and disinfected.
d. Scalding tanks filled with melted wax can be used to pluck the fluff after plucking of feathers.
e. The flow rate of water into the tank shall be in the opposite direction to that in which the poultry is travelling i.e. counter flow scalding system, so that the scalded poultry is pulled out on that side of the scalding tanks at which the clean hot water enters the tank.
f. Proper post-scald bird wash should be provided at the scalding exist and before the picker.
1.2.8 Plucking (de-feathering process)

a. Plucking machines shall be designed so as to control the scatter of feathers and prevent feather buildup in pickers and to rinse the birds and the machine concurrently as much as possible, with the continuous removal of feathers from the plucking site. In addition, proper maintenance and adjustment are essential to the efficient and effective operation of mechanical pickers.

b. Feathers shall be collected in suitable, clean, covered containers to be disposed of at least once daily.

c. Following de-feathering of slaughtered poultry:

1.2.9 Transfer Facilities

Poultry transfer facilities should be designed to maintain contact surfaces visibly clean from traces of fat, blood, feathers, and fecal material. As a general principle carcasses should not be allowed to accumulate at any point. Under certain circumstances, such as pinning waterfowl, some accumulation may be unavoidable.

1.2.10 Flow Meter on Continuous Chilling Tanks

In continuous chilling systems, the volume of the initial water and ice in the tank and subsequent amounts added should be no less than 2.00 litres per carcass weighing 2.5 kg or less; 2.75 litres per carcass weighing 2.5 kg - 6.5 kg; and 3.50 litres per carcass weighing more than 6.5 kg.

1.2.11 Final Inside-Outside Washer

In addition to the final outside washer, an inside carcass washer is required to remove blood and loose organic material within the cavity and promote drainage at the neck prior to chilling.

1.2.12 Pre-Chiller

The pre-chillers should be drained and refilled at mid-shift. Feathers disposed of by water flushing shall be removed from the water which shall be run to waste.

1.3 Staff Rooms

[Article 20]:
“Adequate, suitable and conveniently located toilets shall be provided, that are adequately ventilated and connected to an effective drainage system and do not open directly into the food handling areas. Where necessary, adequate changing facilities should be provided”

Guide to Compliance:

Staff rooms should be located to meet the needs of the plant, employees and plant hygiene. Employee washrooms should only be accessible from plant production areas through a hallway or vestibule. No direct access is permitted.

1.4 Inspector’s Office

A private office should be provided for the use of the meat inspection staff in all slaughter establishments. In processing establishments, office facilities and facilities for the protection and storage of inspectors’ equipment and supplies should be provided if necessary.

2. Personnel hygiene and work practices

2.1 Personal hygiene & Training

2.1.1 Training:

[Article 5]:
“The food business operator shall ensure that food handlers are trained and demonstrate knowledge and skills in food safety & good hygienic practices, as applicable to their assigned tasks, and have further obtained the official food safety training programs certification”

Guide to Compliance:

• The premises should have a documented approved induction training program before being allowed to work on or handle exposed fresh meat.
• All staff should also undergo ADFCA EFST training program which emphasises on the importance of their own personal hygiene to the safety of the food.

2.1.2 Tasks & Functions:
Written task or job descriptions or procedures are necessary for all production personnel. A task description should incorporate the best practices for that operation and should contain sufficient information to allow operatives to carry out their tasks in accordance with company policy. The task description should incorporate Good Hygiene Practices which apply to that operation.

### 2.1.3 Good Hygiene Practices

- **[Article 26]:**
  "Food handlers shall maintain a high degree of personal cleanliness and shall wear suitable, clean and protective clothing while handling food such as hair nets, gloves, masks, beard covers."

- **[Article 27]:**
  "Food handlers shall always wash and, where necessary disinfect their hands, including the start of food handling activities, immediately after using the toilet and after handling raw food or any contaminated material."

- **[Article 28]:**
  "Food handlers shall refrain from behaviours that may result in contamination of food such as wearing of jewellery, smoking, spitting, chewing, eating, sneezing, coughing over uncovered food or any other related behaviour."

**Guide to Compliance:**

- a. Personal working in a ‘clean’ and ‘dirty’ areas should wear appropriately colour coded protective clothing to ensure that staff stay in their own area in order to minimise the risk of cross contamination. All personnel entering production areas should wear clean, protective clothing.
- b. Where necessary, separate amenities for staff handling live animals and condemned products should be provided.
- c. If protective clothing has become excessively soiled in the course of production, they should be replaced.
- d. All personnel entering production areas should wear clean, washable, protective footwear.
- e. All head hair should be covered by means of a mobcap and facial hair by means of a snood. Operatives lifting beef quarters or lamb carcasses should also wear a protective neck shield.
- f. When entering the production areas, all personnel should wash their protective footwear in the facilities provided.
- g. Protective clothing should not be stored in contact with outdoor clothing.
- h. After using the toilets, hands should be thoroughly washed (and preferably disinfected as well) before leaving the toilet area.
- i. No jewellery may be worn.
- j. Smoking is not allowed, except in designated areas.
- k. Eating and drinking is not allowed, except in the canteen.
- l. Spitting is prohibited in any area of the plant.
- m. Personnel entering the production areas should wash their hands thoroughly. Hands should then be dried using disposable towels.
- n. Scabbards are a potential source of contamination and should be restricted to instances where their use is essential to health and safety and should be made only of materials that ensure proper cleaning and disinfection.
- o. After removal from a scabbard or use of steel, a knife should be treated as potentially contaminated and placed in a steriliser before use.
- p. Personnel training and supervision should ensure that operatives with exposed cuts or boils or infected sores do not work on or handle exposed meat, and that such cuts are completely covered with waterproof, metal-detectable, coverings and gloves.

### 2.1.4 Fitness to work

- **[Article 25]:**
  a. Food handlers suffering from or being a carrier of a disease likely to be transmitted through food shall not be permitted to handle food or enter any food-handling area if there is any likelihood of direct or indirect contamination.
  b. Personnel with cuts and wounds, who are permitted to continue working, shall cover them by suitable waterproof dressings.

**Guide to Compliance:**

- a. Food handlers are medically fit to work and maintain records of absences for infected employees or carriers of any disease that may pose a risk to food safety.
- b. Directing food handlers suffering from or being a carrier of a disease to report immediately any symptoms that may pose a risk to food safety. Resumption of duties should not be allowed, unless they are medically examined prior to returning to work, for 48 hours after symptoms have ceased. For diseases & symptoms stated in article (6-c) stated in Regulation no. (6) for the year 2010.
- c. Staff suffering from or being a carrier of a disease likely to be transmitted through food shall not be permitted to handle food or enter any food handling areas.
- d. Any person employed as a meat worker shall report immediately any illness or symptoms that may pose a risk to food safety to the food business operator or person in charge.
- e. A medical questionnaire should be completed by all new staff, including temporary staff, prior to employment.
- f. Staff should be requested to report on return to work any illness (vomiting and diarrhoea) while on holidays.
2.2 Cleaning and Disinfection Programs

Guide to Compliance:

a. All floors in the slaughter house should be thoroughly washed each day as soon as slaughtering is completed.
b. All walls and other surfaces should be kept clean and scraped at all times.
c. All cutting and meat blocks should be washed and scrubbed with a stiff brush using a chemical disinfection solution immediately after each time they are used.
d. All chutes or conduits used to convey animal waste materials should be cleaned and sanitised at least daily.
e. Utensils and equipments used in the slaughtering and dressing of carcasses should be:
   i. immediately cleaned after completion of slaughtering;
   ii. washed and sanitized before each new period of work by immersion in hot water or alternative methods with appropriate frequency during and/or between periods of work;
   iii. immediately cleaned and sanitized when coming into contact with abnormal or diseased tissue that may harbour food-borne pathogens;
   iv. washed and sterilized as necessary and at a minimum between each carcass.
   v. stored in designated areas in a sanitary manner
f- Containers and equipments should not pass from a dirty inedible area to clean edible area.

h- For proper cleaning, the following techniques are required:
   i. dry cleaning (physically remove scrap, such as coarse solid particles, with a dry brush or broom);
   ii. wet cleaning (using brushes and water hoses);
   iii. high-pressure cleaning (pressurized water is applied with high-pressure units and special spraying lances);
   iv. use of chemical cleaning solutions (detergents).

j- Disinfection is achieved either by using hot water (or steam, preferably) or chemical disinfectants. Common chemical disinfectants include Chlorine-containing compounds and Aldehydes.

2.3 Pest Control Programs:

[Article 55]: "Adequate procedures must be in place to control pests and prevent domestic animals from having access to places where food is prepared, handled or stored."

Guide to Compliance:

a. If necessary, the external walls of the premises should be sprayed with an appropriate long acting insecticide.
b. Effective means should be provided to exclude rodents. This may require the services of outside professional pest control companies. Should outside companies be contracted, it is imperative that these companies are reputable and capable of providing the service required. A rodent control program should be agreed between the company and plant management, which gives the necessary guarantees to ensure product safety.
c. The following considerations shall be followed in implementing a Pest control program:
   i. Should be documented
   ii. Have a schematic floor plan with all the bait points marked and numbered which correspond with the bait points in and around the premises.
   iii. All bait points should be marked clearly on the wall surface above the bait point.
   iv. No bait points should be placed in any room where there is exposed fresh meat product.
   v. The perimeter of the premises should also be baited. The bait should be placed in secure weather proof containers approx. 6.096 meter apart along the entire perimeter of the premises. These bait points should be shown on the bait plan. Secure facilities should be provided if rodenticides are stored on site.

2.4 Specific considerations to Poultry Slaughter

Guide to compliance:

a. Slaughterhouse operators should ensure that ante-mortem inspection is carried out under suitable conditions.
b. Visitors and personnel working in areas for keeping live birds, feeding stuffs or other similar material shall not be permitted in other sections of the premises where poultry are being processed unless adequate measures are taken to prevent contamination.
c. Where establishments are approved for the slaughter of different animal species or for the handling of farmed ratites e.g.)ostriches( and small wild game, precautions should be taken to prevent cross contamination by separation either in time or in space of the operations carried out on the different species. Separate facilities for the reception and storage of carcases of farmed ratites slaughtered at the farm and for small wild game should be available.
d. It is permissible to add chlorine or any other suitable disinfectant (allowed to be used) to the water used in processing lines in accordance with the applicable standards. If chlorine will be used in water tanks, its portion shall not be more than 50 ppm.
e. Effective measures shall be taken to get rid of insects, vermins, rodents and fungi, with necessary precautions to avoid contamination of carcasses.
f. The temperature of hot water used for disinfection and washing purposes, while processing, shall not be less than 82°C.
g. Animals brought into the slaughter room should be slaughtered without undue delay.
h. Separation shall be made between production stages such that each processing line be separate from the succeeding ones, specially slaughtering, evisceration, cutting, packing and wrapping operations.
i. Birds and animals shall not be allowed to enter the cold stores.

j. Sticking, bleeding, skinning or plucking, evisceration and other dressing should be carried out without undue delay in such a way that contamination of the meat is avoided. In particular, measures i.e. oesophagus ligation, should be taken to prevent the spillage of digestive tract contents during evisceration.

k. Slaughterhouse operators should follow the instructions of the competent authority to ensure that the post-mortem inspection is carried out under suitable conditions, and in particular that slaughtered animals can be inspected properly.

l. While conducting the post-mortem inspection:
   i. parts unfit for human consumption should be removed as soon as possible from the clean sector of the establishment;
   ii. meat detained or declared unfit for human consumption and inedible by-products should not come into contact with meat declared fit for human consumption; and
   iii. Viscera or parts of viscera remaining in the carcase, except for the kidneys, should be removed entirely, as soon as possible, unless otherwise authorised by the competent authority.

m. After inspection and evisceration, slaughtered animals should be cleaned and chilled to not more than 4 °C as soon as possible, unless the meat is cut while warm.

n. When carcases are subjected to an immersion chilling process, account should be taken of the following:
   i. Every precaution should be taken to avoid contamination of carcasses, taking into account parameters such as carcass weight, water temperature, volume and direction of water flow and chilling time.
   ii. Equipment should be entirely emptied, cleaned and disinfected whenever this is necessary and at least once a day.

o. Sick or suspect animals, and animals slaughtered in application of disease eradication or control programs, should not be slaughtered in the establishment except when permitted by the competent authority. In that event, slaughter should be performed under official supervision and steps taken to prevent contamination; the premises should be cleaned and disinfected before being used again.

p. A comprehensive quality control laboratory shall be provided to carry out the necessary tests concerning the product, the slaughterhouse, equipment, and utensils to ensure that they are free from pathogenic micro-organisms.

q. Only approved cleansing materials and disinfectants shall be used in food plants.
3. Operations & Inspection guidelines from receiving to shipping point

3.1 Receiving of raw materials and Livestock

A register should be maintained of all incoming/outgoing raw materials. Raw materials include live animals, packaging and wrapping, food ingredients and chemicals. Incoming raw material should be labelled and accompanied by relevant documentation which should be retained for 1 year. All raw materials should be sourced from known, reliable suppliers only. There should be written specification for all raw materials and deliveries should be checked to ensure compliance with these specifications. Non-conformances should be dealt with in accordance with written procedures.

3.1.1 Raw materials

[Article 56]:
Raw materials or ingredients (other than live animals) or any other material used in processing products shall not be accepted if they are known, or reasonably expected, to contain parasites, undesirable microorganisms, pesticides, veterinary drugs or toxic, decomposed or foreign substances to the extent that it cannot be reduced to a level acceptable for human consumption, even after hygienically applying normal sorting and/or preparatory or processing procedures.

[Article 57]:
Raw material shall be inspected and washed or cleaned as necessary, to remove soil or other contamination. Potable water shall be used for washing, rinsing, or conveying food.

Regulation 3- Articles (8):
The food business operator shall maintain the records of information for the following periods:
a. For 6 months beyond the shelf-life in the case of a food having a shelf-life of more than 5 years,
b. For 6 months from the date of delivery in the case of highly-perishable food having no ‘use by’ date, or having a ‘use by’ date of less than 3 months, where such food is destined for distribution to the final consumer, or
c. For 5 years in all other cases.

Guide to compliance:
1. All raw materials should be sourced from known reliable suppliers only and should be inspected on delivery to ensure that they are in a condition appropriate for their intended use and accompanied by appropriate documentation.
2. All raw materials should be stored on-site in a manner which prevents chemical, physical or microbiological contamination.

3. Non-food chemicals (e.g. detergents, sanitizers and other non-food chemicals) should not be used in a food production plant. Technical data sheets should be retained on file for all non-food chemicals used in the plant.
4. All chemicals should be inspected on delivery to ensure that they are of food-grade category, properly packaged and labelled and comply with the agreed product specifications.
5. Chemicals should be stored in secure, separate, designated room (or rooms), which prevent the contamination of food, food contact surfaces or packaging materials.
6. Access to, and use of, chemicals should be restricted to authorised personnel who are trained in the handling and use of the chemicals.
7. A register should be maintained in which the receipt and usage of chemicals is recorded.

3.1.2 Livestock

Guide to compliance:
1. Only live animals intended for slaughter should be brought into a slaughterhouse, with the exception of animals that have undergone emergency slaughter outside the slaughterhouse and have appropriate veterinary documentation.
2. Animals presented for slaughter should be sufficiently clean so that they do not compromise hygienic slaughter and dressing.
3. The conditions of holding of animals presented for slaughter should minimise cross contamination with food-borne pathogens and facilitate efficient slaughter and dressing.
4. Animals intended for slaughter should be subjected to ante-mortem inspection, with the ADFCA determining the procedures and tests to be used, how inspection is to be implemented, and the necessary training, knowledge, skills and ability of personnel involved.
5. Livestock supplies should comply with the following criteria:
   a. In general terms the condition of the hide or fleece of the animal as a consequence of faecal soiling or the presence of adherent material should not be such as to increase the risk of cross contamination of the carcase during carcase dressing procedures.
   b. Where animals have been treated with authorised animal medication, the appropriate withdrawal period should be complied with according to accompanying leaflet instructions.
   c. The animals should not have been treated with prohibited animal medication, and should not contain residues of such substances;
   d. Suppliers should provide written declarations that the requirements of (b) and (c) above have been complied with.
6. Segregation of animals, (Animals of different species or of grossly unequal size shall be separated during transport).
7. Transportation of unfit animals, that are diseased, injured or in an advanced state of pregnancy, shall not be permitted.
8. Feeding during transportation, (during long journeys, adequate feed and water shall be offered
to the animals every 12 hours at least except when the transportation period is to be completed within 15 hours from the last feeding).

9- Space requirements, (overcrowding of animals which could result in injury or unnecessary suffering is forbidden. Animals shall stand close enough to support each other, but not so close that they squeeze each other. A floor space during road transport of 0.17 - 0.25 m² for each sheep or goat, depending on size, and 1.2 - 1.4 m² for cattle or camel is required).

10- Cleaning of vehicles, (animals shall only be transported in vehicles that have been cleaned and disinfected before loading and after unloading).

11- Animal handling, (to avoid bruising and stress, animals shall be treated with care during loading and unloading).

12- Animal identification, (a means for identifying animals at the point of loading into transport vehicles and during transportation, as to the source of supply or ownership and a record shall be consistent with regulation No. 4 requirements).

3.2 Slaughter and Dressing Operation guidelines

Guidance to compliance:

The following basic principles should be observed to facilitate proper sanitary slaughter and dressing operation.

a. Rooms should be of sufficient size and shape to provide ample space for all phases of slaughtering (sticking & bleeding), dressing and inspection operations. Equipment and layout for slaughtering room, inspection stations should facilitate accessibility by inspectors and be consolidated to reduce time loss and preclude inconvenience.

b. The slaughtering floor should be designed and equipped to provide for the sanitary separation and harvesting of edible offal i.e., slaughtering tables and killing boxes). Adequate facilities should be provided for cleaning, washing and processing stomachs from bovines, ovines, caprines and camels as well as intestines. It is important that the edible offal be removed to their respective chill rooms promptly.

c. All equipment should be rust-resistant metal or other accepted material. All equipment should have an acceptable design, sufficient capacity and have a satisfactory layout for all phases of the operation.

d. Suspended components of continuous conveyor systems which contact carcasses before inspection is completed, such as beef head hooks, should be thoroughly cleaned and sanitized prior to each use.

e. Stationary or elevating type platforms should be constructed and located away from the dressing rail to avoid common contact of skinned portions of carcasses. A rust-resistant protective guard should be provided to prevent carcass contact with footwear.

f. There should be sufficient, strategically located hot and cold water outlets for clean-up purposes, equipment disinfection units and hand washing facilities.

g. Adequate mechanical or operational measures should be incorporated to prevent the splashing and cross-contamination by carcass movement for both moving-type and gravity-flow dressing or bleeding rails.

h. Animal bodies and carcasses should not come into contact with surfaces or equipment unless practically unavoidable. Where use of equipment involves contact by design, e.g., in the case of automatic eviscerating machines, the hygiene of the equipment should be appropriately maintained and monitored.

i. Minimum rail heights and configuration depending on species as per Table 2

j- During pre-slaughter holding and marshalling for slaughter, animals should be treated quietly and gently to minimize stress and bruising. No animal should be subjected to any form of unnecessary pain or discomfort during offloading and subsequent handling. Any case of obvious cruelty to animals at ante mortem inspection should be reported to the manager. Animal accidentally injured during transport, offloading and handling should be slaughtered without delay. The use of electric prodders should be kept to a minimum (the voltage should not exceed 50 V).

k- Animals that are in an unreasonably dirty condition should be cleaned in a manner which will lessen the risk of contamination before they are allowed to enter the slaughtering room, especially the area where sticking knife is introduced.

l- An animal should only be slaughtered or dressed in a slaughterhouse if a competent person /personnel is available to undertake ante- and post-mortem inspection. (See Ante-Mortem procedure and Post Mortem procedures)

m- In cases of emergency slaughter where a competent person is not available, special provisions established by the ADFCA will apply to ensure that the meat is safe and fit suitable for human consumption.

n- When more than one species of animals is on the same floor, adequate segregation should be provided.

o- Dressing operations should be carried out as soon as possible after slaughter; evisceration particularly should be completed within 30 minutes after bleeding in a manner which ensures that carcasses are dressed in a hygienic manner, appropriate for food intended for human consumption.

p- Appropriate spacing of carcasses should be provided to facilitate sanitary dressing. Beef carcasses should be spaced using rail stops of at least 1.5 m on centre.

q- Dressing operations should be supervised by a veterinarian, and slaughter line speed adjusted where necessary, to ensure that the operatives are carrying out their tasks hygienically. Where a competent person undertaking post-mortem inspection, considers that the manner in which animals are being slaughtered or dressed, or meat is further handled, will adversely affect the safety and suitability of meat, that competent person should enforce a reduction in the rate of production or the suspension of operations or other appropriate measures, as deemed
HYGIENE PRACTICES IN SLAUGHTERHOUSES

HYGIENE PRACTICES IN SLAUGHTERHOUSES

Identification and registration; Animals should be identified on arrival at the slaughterhouse according AIRS requirements Animals of different identities should be kept separate from each other.

- The system of identification should permit the identity to be maintained after dressing.
- Different species of animals, e.g. cattle and sheep, should be kept in separate pens.

3.2.1 Slaughter hygiene for food producing animals:

a. Any animal brought into the room of slaughter should be slaughtered according to the Islamic law (appendix 3) without delay. The rate of slaughter should not exceed the level at which the carcases can be accepted for dressing.
b. The slaughter process should be made with the animal resting on a table or a low cradle, so that contaminants from the floor do not enter the wound.
c. Before carcases are hoisted into a hanging position, the rectum and the oesophagus should be sealed effectively to prevent spillage.
d. Knives and other similar equipment should be washed and sterilised as necessary and at a minimum between each carcase.
e. Bleeding should be as complete as possible;

4. Dressing hygiene for Red Meat & poultry

4.1 Dressing hygiene for red meat

Guide to compliance:

a. Written procedures or task descriptions should be prepared for each dressing operation, which allow the operatives to carry out their tasks hygienically. These procedures will incorporate the following basic principles
b. No part of carcass should be allowed to touch the floor or the walls. Carcasses and parts thereof should be prevented from touching each other once the slaughter has been made. The separation of carcases should be maintained until they have been examined by the inspector.
c. All members of the working staff including inspectors and butchers should wash their hands and arms, knives, aprons and other personal equipment frequently enough to ensure that they remain clean, and at a minimum between each carcase.
d. Each operative should ensure that any visible contamination is removed, by trimming with a sterile knife, before the carcase moves on to the next work station.
e. In addition to the presence of a system in poultry plants of referring to flock records and medication data, shackling, slaughtering and scalding operations that precede picking should be monitored. Proper and continuous scalding tank water replacement, counter flow system, scalding temperatures control, as well as post scald bird-wash should be in place.

necessary until rectification of the deviated situation has been done to his satisfaction.
r. Animals of different species or of grossly unequal size should be separated during transport.
s. Animals that are diseased, injured or in an advanced state of pregnancy, are not permitted to travel.
t. After arrival in the slaughterhouse, the slaughter of the animals should not be unduly delayed. However, where required for welfare reasons, animals should be given a resting period before slaughter.
u. During long journeys, adequate feed and water should be offered to the animals every 12 hours at least except when the transportation period is to be completed within 15 hours from the last feeding.
v. Restraining, sticking, bleeding, skinning, evisceration and other dressing should be carried out without undue delay and in a regulated manner that avoids contaminating the meat. In particular:
i. the trachea and oesophagus should remain intact during bleeding, except in the case of slaughter according to a religious custom;
ii. during the removal of hides and fleece:
- contact between the outside of the skin and the carcase should be prevented;
- operators and equipment coming into contact with the outer surface of hides and fleece should not touch the meat;
iii. Measures should be taken to prevent the spillage of digestive tract content during and after evisceration and to ensure that evisceration is completed as soon as possible after bleeding is completed;
iv. Removal of the udder should not result in contamination of the carcase with milk or colostrum.
v. Complete skinning of the carcase and other parts of the body intended for human consumption should be carried out, except for feet of ovine and caprine animals and calves. Heads and feet should be handled so as to avoid contamination of other meat.
vi. The carcases should not contain visible faecal contamination. Any visible contamination should be removed without delay by trimming or alternative means having an equivalent effect.
w. Carcases and offal should not come into contact with floors, walls or work stands.
x. Animals should only be transported in vehicles that have been cleaned and disinfected before loading and after unloading.
y. To avoid excessive bruising and stress, animals should be treated with care during loading and unloading.
• A means for identifying animals at the point of loading into transport vehicles and during transportation, as to the source of supply or ownership and a record should be kept to this effect. Animals from different sources of supply or ownership, transported in the same vehicle should be kept physically separated.
• Animal Identification should:
- Be in compliance with the requirements stated in related regulation pertaining to Animal
f. Washing of the animal bodies at multiple steps in the dressing process, and as soon as possible after each contaminating step, reduces the adherence of bacteria to the exterior surface of the dressed carcass which can minimise the overall contamination.

g. Slaughtered animals that are scalded, flamed or similarly treated should be scoured of all bristles, hair, scurf, feathers, cuticles and dirt.

**Dressing Procedures**

**Skinning/dehiding**

a- The skinning operation should only be carried out with animals in the hanging position.

b- The skinning procedure should prevent contamination being transferred from the hide or skin to the exposed surface of the meat.

c- Fisting For small ruminants, such as sheep, where skin is usually firmly attached to the carcass:

i. Some butchers punch their fist forcefully between the skin and the carcass surface to detach the skin ("fisting"). In this situation, butchers should take care to frequently wash their hands and arms and not touch the dirty outside of the animal's skin while removing the skin this way.

ii. Using a knife for skinning these animals is not allowed because of the risk of skin damage or damaging the superficial fascia (a fine membrane that improves carcass appearance and reduces surface shrinkage).

iii. A proposed solution to fisting is to introduce a compressed air pipe between the skin and carcass surface, where the air pressure gradually detaches the skin. Use of compressed gas is only permitted when air passes through a filter in order to reduce the micro-organisms present in the air, which otherwise can constitute a source of contamination.

d- Hide or fleece removal should minimise the transfer of contamination onto the carcass, and will include the following:

i. At least two knife technique should be used for all tasks which involve opening the hide or fleece, followed by cutting the hide or fleece away from the carcass meat: one knife for the external or 'dirty' cut through the skin, and the other for the internal or 'clean' cut under the skin.

ii. These knives should be colour coded for easy recognition e.g. black handled knives for the 'dirty' cut and yellow (or other light colour) handled knives for the 'clean' cut.

iii. As far as possible, all hide or fleece cuts should be 'in-out' or 'spear-cut’, which means that the cut is made with the blade of the knife cutting away from the carcass.

iv. Exceptions to this general principle are permitted for the initial opening e.g. at the hock, then a trim step with a sterile knife should be introduced to remove any contamination.

e- Hides/fleeces should not be washed, de-fleshed or left to accumulate in any part of a slaughterhouse or establishment that is used for slaughter or dressing.

f- The carcass should be completely skinned before evisceration commences. If the head is left attached to the carcass, or if any head meat, the tongue or the brain is recovered, the head should also be skinned.

g- All hides removed from the carcasses on the dressing floor should be removed from the floor to properly constructed and hooded chutes or bins. Trimming, fleshing and grading of hides should not be done on the killing floor but in separate rooms designated for this purpose or in the hide-curing room. Mechanical de-hiders are now widely used and their introduction & imposition as an essential equipment should be considered, as an effective mean of contamination reduction and minimization.

h- Once the removal of the hide/fleece has commenced carcasses should be separated from each other to avoid contact, and this should be maintained until each carcass has been inspected and judged by a competent person undertaking post-mortem inspection. (Note: While full separation of carcasses is more difficult in the case of poultry such contact should be minimised).

i- Lactating or obviously diseased udders should be removed at the earliest appropriate time during dressing. No secretion is to be allowed to contaminate the surface of the carcass. Organs should be carefully removed, avoiding contamination of the carcass with their secretions.

j- Do not hang both un-skinned and skinned carcasses too closely together in the slaughter line.

k- Skinning of the head may not be required for some classes of animals e.g. goats, calves, sheep, provided that heads are handled in such a way as to avoid undue contamination of meat.

l- The following good hygienic practice (GHP) principles should apply to all skinning methods and stages TABLE-3:

- Prevent contact (in-rolling) or dirt flicking from freed parts of the hide and the meat surface.
- Do not touch the meat surface or the knife with the hand that held the hide (i.e. do not alternate hide- and knife-holding hands) before effective hand-washing.
- Prevent contamination of the carcass with dirty hooks, rollers and protective clothing.
- After the initial cut through the skin, sterilize the knife in water at 82 °C, and then make all other cuts from the inside out ("spear-cuts").
- Do not create aerosols during mechanical hide-pulling.
- No hair or skin pieces should be left on the skinned carcass.
- No excess blood should appear on the skin of the carcass.
TABLE-3 SKINNING

<table>
<thead>
<tr>
<th>Main steps</th>
<th>Stages</th>
<th>Pay attention to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skinning and removal of head while the animal is hanging</td>
<td>Remove the horns. Skin the head. Detach the head through occipital joint. Tie the esophagus.</td>
<td>GHP Hook up the head.</td>
</tr>
<tr>
<td>Removal of hind legs</td>
<td>Skin and detach the hind legs through tarsal joint.</td>
<td>GHP</td>
</tr>
<tr>
<td>Lowering the carcass to horizontal position</td>
<td>Place the carcass on its back, on to cradle.</td>
<td>GHP</td>
</tr>
<tr>
<td>Removal of forelegs</td>
<td>Skin and detach forelegs through carpal joint.</td>
<td>GHP</td>
</tr>
<tr>
<td>Flaying on cradle</td>
<td>Cut the skin along the middle line from the sticking wound to the tail. Skin the brisket and flanks. Skin/remove the udder.</td>
<td>GHP Do not puncture the udder (mastitis pathogens!). Leave supermammary glands on carcass intact</td>
</tr>
<tr>
<td>Flaying in half-vertical position</td>
<td>Raise the carcass to half-hoist. Clear the skin around anus. Cut abdominal wall around rectum. Tie-off the rectum with twine / cover with plastic bag. Skin the tail.</td>
<td>GHP Do not puncture the anus/rec- tum (enteric pathogens!).</td>
</tr>
<tr>
<td>Flaying in vertical position</td>
<td>Raise the carcass free of Cradle / floor. Skin the back and complete flaying.</td>
<td>GHP</td>
</tr>
</tbody>
</table>

4.1.1 Evisceration

a- The mid-line opening in the abdomen should be made in a manner that minimises the possibility of cutting into the stomach and intestines. The blade of the knife should be directed away from the intestine when making this opening. In the event that there is some accidental spillage, the operative should follow a written procedure which addresses this mishap effectively. (See Evisceration Accident Procedure in Appendix 4).

b- Evisceration should be carried out in a manner that prevents contamination of the carcass with the content of abdominal organs. The anal sphincter should be circumcised and the rectum tied before it is dropped into the pelvic cavity and the digestive track removed without incising the stomach or intestine.

c- The oesophagus must be perfectly sealed to prevent spillage and draining of rumen contents.

d- All stomachs and intestines should be removed from the room as soon as possible, and should be identified with the carcass until the veterinary inspection has been passed in accordance with meat inspection procedures.

e- Where viscera inspection trucks are used, adequate washing and disinfection facilities should be provided. Viscera inspection trucks should be washed and sanitized as needed. Every establishment that uses a stationary inspection table instead of viscera inspection trucks should be equipped with adequate sanitation facilities. A pan-type stationary inspection table with a minimum of two pans and equipped with a water immersion type sanitizer is adequate.

f- Faecal or other objectionable matter that may contaminate carcasses or edible offal during processing should only be removed by careful trimming. If carcasses are to be washed for any reason, only running potable water (preferably chlorinated at 20-30 ppm) should be used. When washing is carried out prior to evisceration, water should not be allowed to enter the thoracic or abdominal cavities. No paper, cloth, wad, sponge or brush should be used in washing carcasses.

g- Removal of the udder should not result in contamination of the carcass with milk or colostrums.

h- Meat contamination during skinning and eviscerating of short-haired species usually can be kept minimal if simple equipment for carcass suspension is available, such as wall hooks or racks with hooks (in small operations) or hooks or gambrels attached to an overhead rail in larger operations.

i- Keep carcass suspension high enough to prevent forelegs and shoulders from touching the floor.

j- Before the removal from the head of any parts intended for human consumption, the head should be clean.

k- Handle evisceration carefully to prevent the intestines and its contents from touching the meat preferably by making double ties at the oesophagus-stomach and stomach duodenum boundaries provided that the oesophagus and rectum openings have been previously sealed during the skinning.

l- The following GHP principles should be applied in all evisceration methods and stages TABLE-4:

- Where bodies of animals are skinned, ensure that this process is completed before evisceration.
- Evisceration should be carried out without delay.
- Do not puncture the viscera.
- Prevent leakages from the viscera (alimentary tract), uterus, urinary bladder and gall bladder during separation cuts.
- Prevent contact of viscera with floors/walls.
- Regularly wash hands/aprons and sterilize knives.
- Identify/correlate viscera with the related carcasses.
### TABLE-4: EVISCERATION

<table>
<thead>
<tr>
<th>Main steps</th>
<th>Stages</th>
<th>Pay attention to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open the thorax</td>
<td>Saw the brisket down the middle while the carcass is on the cradle</td>
<td>GHP No sharp top end of the saw.</td>
</tr>
<tr>
<td>Open the abdomen</td>
<td>Raise the carcass to the half-hoist. Cut the abdominal wall along the middle line</td>
<td>GHP Use a knife with a rounded, blunt tip.</td>
</tr>
<tr>
<td>Free the viscera</td>
<td>Raise the carcass clear from the cradle/floor so that viscera fall out. Make double ties at the oesophagus–stomach and stomach–duodenum boundaries. (Note: oesophagus and rectum openings have been sealed during skinning.)</td>
<td>GHP Leave the thoracic and abdominal viscera intact.</td>
</tr>
<tr>
<td>Separate the viscera</td>
<td>Catch the edible (e.g. liver, heart, lungs) and inedible viscera in separate trays. (Note: the kidneys are removed later, after carcass splitting.)</td>
<td>GHP Wash the trays between animals</td>
</tr>
</tbody>
</table>

### 4.1.2 Beef Heads

- Suitable facilities and floor space should be provided for dehorning, removing and washing beef heads for inspection. When racks or conveyors are used for cattle head inspection, the heads should be identifiable, spaced at a distance sufficient to prevent contact of one head with another. Adequate space should be provided for the inspector to perform the examination.
- Skinning of the head may not be required for some classes of animals e.g. goats, calves, sheep, provided that heads are handled in such a way as to avoid undue contamination of meat; before the removal from the head of any parts intended for human consumption, the head should be clean and, except in the case of animal bodies that are scalded and skinned to an extent sufficient to facilitate inspection and the hygienic removal of specified parts
- Every establishment that uses a stationary inspection table for beef heads inspection should be equipped with adequate facilities for cleaning and disinfection the stationary inspection table.
- The identity of heads should be maintained until after inspection.
- There must be no drip contamination from one head to another. This is accomplished on the dressing floor and whole or unboned heads should not be transferred by chutes to other areas for boning. If transfer is necessary, properly constructed hanging racks, trucks or overhead rails should be provided to prevent contamination.
- Exposure of the tongue should be done in such a way that the tonsils are not cut
- Head meat and tongues are frequently exposed to contamination and every effort should be made to remove all such contamination and maintain all portions in a sanitary condition. Head meat and tongues should be chilled as quickly as possible.
- Adequate facilities should be provided for the inspection of beef heads and all measures necessary should be taken to prevent their contamination during transfer for boning.

### 4.1.3 Splitting Station

For beef and camel, the following are desirable:
- splitting station located after the evisceration stand
- The final veterinary post-mortem inspection station, including the held rail, should be located at a site immediately following the beef splitting station.
- Work facing the back of the carcass.
- Split the carcass vertically down the backbone with saw or cleaver. (Saws are preferred to cleavers.)

### 4.1.4 Check-trim station & washing station

- Prior to the final carcass washing station, a check-trim station, equipped with an adequate platform should be provided to facilitate the check trimming of the total carcass.
- Poultry, following de-feathering, can only be effectively cleaned of dust, feathers and other contaminants by the application of potable or chlorinated water.
- Washing of the animal bodies at multiple steps in the dressing process, and as soon as possible after each contaminating step, reduces the adherence of bacteria to the skin which can minimise overall carcass contamination.
- Pressure spray-washing equipment should be used to remove blood and bone dust from check-trimmed splitted carcasses (the pressure of water should not be such as to damage the meat and impair its market value), particular attention should be paid to the internal surfaces and pelvic region.
- Washing after evisceration and post-mortem is also necessary for technological reasons, as this is the only method available to routinely clean carcasses before entry to the chilling process. Washing may be carried out by several methods e.g., spraying, immersion washing.
- The following GHP principles should be applied in a washing station: TABLE-5
  - Use only potable water for carcass washing.
• Wash the carcasses as little as possible to prevent/reduce the spread of contamination from individual spots on to larger areas of the same carcass.
• Prevent/reduce airborne cross-contamination between carcasses by not creating aerosols during washing.
• Remove any surface contamination by trimming rather than by washing.
• Wiping cloths should not be used.

**TABLE-5 WASHING**

<table>
<thead>
<tr>
<th>Main steps</th>
<th>Stages</th>
<th>Pay attention to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash the carcass</td>
<td>Use water spraying without excessive pressure.</td>
<td>GHP</td>
</tr>
<tr>
<td>Wash the carcasses inside a</td>
<td>GHP</td>
<td>Do not wash carcasses by hosing.</td>
</tr>
<tr>
<td>Washing cabinet.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.1.5 Hygienic Dressing for Poultry

#### 4.1.5.1 Evisceration

a. Counter current flow scalders compliant with hygienic standards should be used where the main water flow runs in the opposite direction to that in which carcasses are travelling water replacement should be enough to prevent contamination build-up and should be commensurate with the rate of production flows.
b. An appropriate clean and hygienic system for removing feathers (picking) from the birds should be provided, together with providing of clean water for prevention of feather build up and washing of both the machine and the bird should be secured. Pickers should be properly adjusted with picking line washers perfectly oriented to appropriately rinse birds’ exterior. Nontoxic wax can be used in defeathering for certain poultry species.
c. Poultry, following de-feathering can only be effectively cleaned of dust, feathers and other contaminants by the application of chlorinated potable water (20-30 ppm).
d. Defeathered poultry should enter the evisceration room by railing system or a chute. Supply of both cold and hot water should be provided along both sides of the evisceration trough to ensure cleaning of carcasses from outside and inside, disinfection of knives, tools, and aprons when necessary.
e. Proper maintenance and adjustment of mechanical eviscerators and equipments are necessary for maintenance of the product quality and processing line efficacy.
f. Evisceration trough should be constructed of stainless steel or any other suitable material.
g. Evisceration vent machines should be flushed with water between venting operations.
h. Washing equipment should be designed to be commensurate with the rate of production flow. Trickle jets of water should be enough to ensure proper cleaning of the entire carcass from inside.

### 4.1.6 Inspection Procedure Monitoring and Control

#### Inspection Procedures and Standards

Since the production of clean and wholesome meat is the primary objective, there are particular areas and activities in the plant that are critical to ensuring this objective. These areas and activities are briefly outlined as follows:

#### 4.1.7 Pre-operational inspections

**General**

a) Daily preoperational inspections of every room and area in which animals are slaughtered, dressed, prepared for human consumption or animal food should be carried out. It is necessary to examine the production facilities, including all equipment, and to determine if cleanup and maintenance operations are satisfactory to allow the commencement of the routine operational activities.
b) Since plant management is responsible for all aspects of products safety and quality, it is responsible as well for preoperational inspections within the establishment. Plant management should assign the preoperational inspection duties to responsible plant employees. Inspectors should regularly monitor the effectiveness of preoperational inspections, especially complex equipment and other critical areas including meat contact surfaces. Any unsatisfactory clean up or lack of maintenance should be immediately reported to the plant manager to be corrected. Until sanitary conditions required under the inspection system are provided, the slaughter and dressing of food animals and the processing of meat products should not be commenced.

#### Guidelines for Preoperational Inspection

The production of wholesome meat products is contingent upon good housekeeping and high standards of sanitation. The cleanliness of product contact surfaces is critical. Clean work clothes and working equipment such as knives, scabbards, hooks, mesh gloves and aprons are also very important. Close attention should also be paid to temperatures of rooms, areas and sanitizers. The following steps may be used as a guide to perform a preoperational inspection:

i. Inspect all meat contact surfaces for cleanliness. Complex equipment should be inspected before it is assembled. Check that conveyer belts, meat conveyers and saws have been satisfactorily cleaned. Inspect small tools (e.g. knives and hooks) and protective equipment (e.g. gloves and aprons). Use a flashlight when inspecting grinders, emulsifiers, suffers and other complex equipment.

j. Since non-contact surfaces are also potential sources of contamination, equipment and facilities
that do not come into contact with meat products such as the undersides of equipment, ceilings, walls, floors, overhead rails, drain covers, hand wash facilities, sanitizers and equipment frames should be inspected. Ensure that hand wash facilities are functional and supplied with soap, towels and waste towel containers. Potential sources of contamination located above meat products are most critical because of the possibility of contaminants falling on products.

k. Inspect equipment and facilities for state of maintenance. Any cracks, peeling paint, rust development, loss of galvanization, open seams and any other wear and tear can best be observed during the preoperational inspection when meat products are not present and equipment is not in motion. Preoperational inspection can spot potential problems, which can be programmed for repair or replacement before the problem becomes critical.

l. Check temperatures of production areas and sanitizers. Ventilation and air flow in production areas should be observed to ensure that air is not flowing from contaminated areas to cleaner areas (e.g. livestock holding areas to kill floor).

m. There should be no condensation problems resulting from faulty ventilation, poor insulation or insufficient air movement. All mineral oil used to cover and protect equipment after clean up should be hosed off from all meat contact surfaces prior to the commencement of operations.

n. General state of housekeeping should be examined and action taken before a crisis situation develops.

Action to be taken when unsatisfactory conditions are found

a) Unsatisfactorily cleaned equipment and facilities should be re-cleaned or repaired before use. Depending on the extent of the clean up problem, one piece of equipment, one room or area, one department or the whole establishment may have to be withheld from operations. Corrective action may be delayed if clean up deficiencies and maintenance problems would not, in the opinion of the inspector, compromise the wholesomeness of meat products. In all cases of delay, corrective action should be programmed to prevent the development of a crisis situation.

b) Preoperational inspection of equipment and facilities should be carried out by plant management on a daily basis, with meat contact surfaces receiving special attention. Past compliance records of the plant will dictate the frequency of monitoring preoperational inspections. Plants with a less than satisfactory record should be monitored more frequently.

c) Frequent contact between the Inspector in Charge and representatives of plant management is needed. Findings of preoperational inspections should be recorded by plant management and made available for inspectors to review. A program of maintenance should also be regularly submitted to the competent authority and progress verified.

4.1.8 Ante-Mortem Inspection

4.1.8.1 General

a. The animals should be subjected to ante-mortem inspection by a veterinarian not more than 24 hours before slaughter.

b. When examining animals attention should be paid to the following:

i. Abnormalities in posture and gait.

ii. State of nutrition.

iii. Abnormalities in behaviour and reaction to environment.

iv. The digestive system (appetite, rumination, quality of faeces).

v. The respiratory system (condition of the muzzle, nasal mucosa, Abnormalities in breathing).

vi. Hide, skin and feathers; Abnormal colour and/or odour.

Udder and external genitalia

vii. Abnormal discharges or protrusions from body openings.

c. The post-mortem inspector should be notified of all suspected animals so that he can pay particular attention to their carcasses on inspecting them.

d. Animals suspected of being diseased should be identified accordingly and separated from healthy stock to be slaughtered at the end of the work period or in an area specially prepared for this purpose or in the emergency slaughter hall in case of presence of humane reasons.

e. Animals found to be suffering from a condition that would make the meat unfit for human consumption, should be disposed of humanely without entering the slaughter system, and identified as condemned.

f. All animals presented for slaughter should be subjected to ante-mortem inspection, supervised by a competent veterinarian whether on an individual or a lot basis.

g. Inspection should include confirmation that the animals are properly identified as per issued regulation, so that any special conditions pertaining to their place of primary production are considered in the ante-mortem inspection, including relevant public and animal health quarantine controls.

h. Ante-mortem inspection should support post-mortem inspection by application of a specific range of procedures and/or tests that consider the behaviour, demeanour and appearance, as well as signs of disease in the live animal.

i. Special controls, procedures or operations, such as denial of entry to the slaughterhouse, should be imposed by the competent authority when:

• animals are heavily soiled;

• animals have died in transit;

• a zoonotic and/or highly contagious disease posing an immediate threat to either animals or humans is present, or suspected;

• an animal health disease subject to quarantine restrictions is present, or suspected;

• animal identification requirements are not met; or

• declarations from the primary producer, if required by the competent authority (including compliance with good veterinary practice in the use of animal medicines), are absent or inadequate.

w. All crates carrying live poultry should carry labels/tags showing the name of farm, the brand name or any information required by the authority or the service establishment providing
HYGIENE PRACTICES IN SLAUGHTERHOUSES

HYGIENE PRACTICES IN SLAUGHTERHOUSES

4.1.8.2 Design of ante-mortem inspection systems

a. Ante-mortem inspection is a basic integral component of an overarching risk-based system for the production of meat, with systems for process control incorporating appropriate components. Relevant information on the slaughter population, e.g., animal class, health status, geographical region of origin, should be utilised in both the design and implementation of ante-mortem inspection systems.

b. Ante-mortem inspection, including procedures and tests, should be established by the competent authority according to a science and risk-based approach, and conducted according to documented protocol & procedure (See “Characteristics of a risk-based ante-mortem inspection below.”). In the absence of a risk-based system, procedures will have to be based on current scientific knowledge and practice.

c. Ante-mortem procedures and tests may be integrated and implemented together so as to achieve public health and animal health objectives. In such cases all aspects of ante-mortem inspection should be science-based and be tailored to the relevant risks.

d. Where indicated by public health concerns, measures additional to routine ante-mortem inspection may be required.

e. Suitable facilities of appropriate design and sound construction lockable lairage pens should be available. It should be properly lit (min240 lux) if sufficient natural light that facilitate inspection & easy monitoring of animals while resting is lacking.

f. It must be of sufficient capacity to accommodate double the S.H. production capacity.

g. System to ensure feed withdrawal and fasting of animals at least 12 hours before slaughter should be in place with availability of continuous supply of drinking water.

4.1.8.3 Characteristics of a risk-based ante-mortem inspection program

a. Procedures for confirmation of proper animal identification in accordance with regulation number 4;

b. Design and application of organoleptic procedures and tests that are relevant and proportional to meat-borne risks associated with clinical signs of illness and grossly-detectable abnormalities;

c. Use of laboratory tests for hazards that are unaddressed by organoleptic inspection when their presence is suspected, e.g., chemical residues and contaminants; and

d. Return of information to the primary producer so as to seek continuous improvement in the safety and suitability status of animals presented for slaughter.

e. Tailoring of procedures to the spectrum and prevalence of diseases and defects reasonably likely to be present in the slaughter population, taking into account the type of animal, geographical origin and primary production system;

f. Integration with HACCP-based process control to the extent practicable, e.g., application of objective criteria for ensuring appropriate cleanliness of animals presented for slaughter;

g. On-going tailoring of procedures to information received from the primary production unit, where practicable;

h. Poultry intended for slaughter should undergo ante-mortem health inspection by veterinarians within 24 hours prior to arrival at the slaughter house. Such inspection should be repeated before slaughter if this takes more than 24 hours after the ante mortem health inspection.

i. Poultry drug withdrawal period should be strictly monitored, and pre-slaughter chemical residues monitoring should be in place.

j. Slaughtered poultry should be free from symptoms indicative of diseases and should be free also from diseases communicable to humans or animals and also be free from any symptoms of disease or disorders affecting their health condition thus making their meat unfit for human consumption. Feed withdrawal for at least 8 hours before slaughter is recommended prior commencement of slaughter in order to prevent carcasses fecal pollution.

4.1.8.4 Implementation of ante-mortem inspection

a. The competent authority should determine how ante-mortem inspection is to be implemented, including identification of the components that may be applied at primary production rather than the slaughterhouse, e.g., in the case of intensively-raised poultry. The competent authority should establish the training, knowledge, skills and ability requirements of all personnel involved, and the roles of the official inspector, including the veterinary inspector. Verification of inspection activities and judgements should be undertaken as appropriate by the competent authority or competent body. The final responsibility for verifying that all regulatory requirements are met should lie with the competent authority.

b. The responsibilities of the establishment operator in respect of ante-mortem inspection include:

i. Providing verifiable information required by the competent authority with respect to ante-mortem

ii. Inspection carried out at primary production;

iii. Segregation of animals if, for example, they have recently given birth during transport or in lairages, or have recently aborted and/or show retained foetal membranes; or peculiar behaviour or symptoms e.g. nervous sings.

iv. Applying identification systems for individual animals or lots of animals until the time of slaughter that ensure products traceability and document the outcome of ante-mortem inspection, and after slaughter in the case of “suspect” animals; according to implemented regulations.

v. Presentation of animals those are sufficiently clean; and healthy.

vi. Prompt removal of animals that have died in the lairage, e.g., from metabolic disease, stress, suffocation or severe injury, with the permission of the competent person undertaking ante-mortem inspection.

c. Ante-mortem inspection at the slaughterhouse should occur as soon, as is practicable after
delivery of slaughter animals. Only animals that are judged to be sufficiently rested should proceed to slaughter, but should not be withheld from slaughter any longer than necessary. Minimum period of (12 hours) detention is essential before slaughter, during which animals should receive ample drinking water. If ante-mortem inspection has occurred and there is a delay of more than 24 hours before slaughter, ante-mortem inspection should be repeated. 

d. Ante-mortem inspection systems required by the competent authority should include the following:

i. all relevant information from the level of primary production should be taken into account on an on-going basis, e.g., declarations from the primary producers relating to the use of veterinary drugs, information from official hazard control programs;

ii. animals suspected as being unsafe or unsuitable for human consumption should be identified as such and handled separately from normal animals;

iii. Results of ante-mortem inspection are made available to the competent person undertaking post-mortem inspection before animals are inspected at the post-mortem stations so as to augment final judgement. This is particularly important when a competent person undertaking ante-mortem inspection, judges that a suspect animal can proceed to slaughter under special hygiene conditions;

iv. In some cases the competent authority may allow slaughter on the farm for particular classes of animal, e.g., farmed game, and in such cases the slaughter animals should be subject to ante-mortem inspection and other hygiene controls as determined by the competent authority.

v. in more equivocal situations, the competent person undertaking ante-mortem inspection may hold the animal (or lot) in special facilities for more detailed inspection, diagnostic tests, and/or treatment;

vi. animals condemned as unsafe or unfit for slaughter should be immediately identified as such and handled in a manner that does not result in cross-contamination of other animals with food-borne hazards; and

vii. The reason for condemnation should be recorded, with confirmatory laboratory tests being carried out if deemed necessary. Feed back of this information to the primary producer should take place.

viii. Slaughter of animals under an official or officially-recognised program for the eradication or control of a specific zoonotic disease, e.g., brucellosis, should only be carried out under the hygiene conditions specified by the competent authority.

4.1.8.5 Ante-mortem judgment categories

Ante-mortem judgement categories include:

a. Passed for slaughter; animal judged normal or approved should be passed for slaughter without unnecessary delay.

b. Passed for slaughter subject to a second ante-mortem inspection, after an additional holding period, e.g., when animals are insufficiently rested, or are temporarily affected by a physiological or metabolic condition; (tired, fatigued, agitated animals.

c. Passed for slaughter under special conditions i.e. deferred slaughter as “suspects”, where the competent person undertaking ante-mortem inspection suspects that post-mortem inspection findings could result in partial or total condemnation; Animals should be screened out subject to further exam and definite diagnosis. The nature and extent of the abnormality will determine the subsequent action;

d. condemned: this category include:

i. condemned for public health reasons i.e. due to: meat-borne hazards, occupational health hazards, or likelihood of unacceptable contamination of the slaughter and dressing environment following slaughter;

ii. condemned for meat suitability reasons;

iii. condemnation due to animal health reasons, where animals are treated as specified in relevant national legislation, and disposed of accordingly. This category also include mmoribund or Dead on arrival animals: (where the possibility of anthrax should be ruled-out)

e. Emergency slaughter, when an animal eligible for being passed under special conditions could deteriorate if there was a delay in slaughter i.e. animal suffering acute painful conditions which do not present any hazard to consumer.

4.1.9 Post-mortem Inspection

4.1.9.1 General

a. Post-mortem inspection should be carried out immediately after slaughter and if possible an inspector should be present during dressing of the carcass.

b. Prior to final inspection, all parts required for the examination of the animal should remain identifiable with the carcass. No parts of an animal should be removed from the slaughter rooms, before the final inspection, without the consent of the inspector.

c. The inspection point should be of adequate size and have adequate lighting (600-540 lux). It should be provided with adequate facilities for the meat inspection services.

d. Any incision made by the inspector should be made in such manner that it will not impair the market value of the carcass.

e. A local refrigerated room or refrigerator or freezer should be provided to hold carcasses for which final post-mortem judgement has to be deferred until the results of further veterinary tests become available.

f. All carcasses which have not yet passed post-mortem inspection should be regarded as potentially diseased. After handling any such carcasses, hands should be washed and equipment cleaned and then sanitized. This cleaning and sanitation procedure should not contaminate carcasses or meat.

g. Carcasses found to be free from disease and fit for human consumption should be stamped by the inspector. Carcasses and organs condemned should be market so and removed immediately.

(62)
to the condemned meat room.
h- All carcasses and other relevant parts should be subjected to post-mortem inspection, which preferably should be part of an overarching, risk-based system for the production of meat.
i- Post-mortem inspection of carcasses and other relevant parts should utilise information from primary production and ante-mortem inspection, together with the findings from organoleptic inspection of the head, carcass and viscera, to make a judgement on the safety and suitability of parts intended for human consumption. Where the results of organoleptic inspection are insufficient to accurately judge carcasses and other relevant parts as safe or suitable for human consumption, the parts should be set aside and followed up with confirmatory inspection procedures and/or tests.

4.1.9.2 Design of post-mortem inspection systems

a. Post-mortem inspection procedures and tests should be established by the competent authority according to a science- and risk-based approach. The competent authority has responsibility for establishing judgement criteria and verifying the post-mortem inspection system. In the absence of a risk-based system, procedures will have to be based on current scientific knowledge and practice.
b. Post-mortem procedures and tests may be integrated and implemented together so as to achieve public health and animal health objectives. In such cases, all aspects of post-mortem inspection should be science based and be tailored to the relevant risks.
c. Relevant information on the animal population, e.g., animal type, health status, geographical region of origin, should be utilised in both the design and implementation of post-mortem inspection systems.
d. Where indicated by public health concerns, routine screening of carcasses and other relevant parts by methods other than organoleptic inspection may be required for suspected hazards.

4.1.9.3 Characteristics of a risk-based post-mortem inspection program

a. design and application of organoleptic procedures and tests that are relevant and proportional to meat-borne risks associated with grossly-detectable abnormalities;
b. tailoring of procedures to the spectrum and prevalence of diseases and defects reasonably likely to be present in the particular slaughter population, taking into account the type (age), geographical origin and primary production system of the slaughter animals, e.g., multiple incisions of relevant muscles in all cattle from geographical regions where Taenia saginata is present;
c. procedures that minimise cross-contamination through handling to the greatest extent practicable, and may include procedures that are limited to visual observation of carcasses and other relevant parts in the first instance if justified by risk assessment;
d. inspection of non-edible parts of animals where they may play an indicator role in the judgement of edible parts;
e. modification of traditional procedures where scientific investigation has shown them to be ineffective, or, of themselves, hazardous to food, e.g., routine incision of lymph nodes of young animals to detect granulomatous abnormalities;
f. application of more intensive organoleptic procedures on a routine basis when a disease or condition capable of general distribution is found in a single part of a carcass and other relevant parts, e.g., cysts of Taenia saginata in cattle, xanthosis;
g. application of additional risk-based inspection procedures on a routine basis when live animals are positive to a diagnostic test, e.g., tuberculin test in cattle;
h. use of laboratory tests for hazards that are unaddressed by organoleptic inspection,, chemical residues and contaminants;
i. application of measurable outcomes of organoleptic inspection that reflect a risk-based approach;
j. integration with HACCP plans for other process control activities;
k. on-going tailoring of procedures to take into consideration information received from the primary producer on a lot-by-lot basis; and
l. return of information to the primary producer so as to seek continuous improvement in the safety and suitability status of animals presented for slaughter.

4.1.9.4 Implementation of post-mortem inspection

a. Post-mortem inspection should occur as soon as is practicable after slaughter of animals, or delivery of killed wild game animals. Inspection should take into account all relevant information from the level of primary production and ante-mortem inspection, e.g. information from official or officially-recognised hazard control programs, information on animals slaughtered as “suspects”.
b. The competent authority should determine: how post-mortem inspection is to be implemented, the training, knowledge, skills and ability required of personnel involved (including the role of the official inspector, the veterinary inspector, and any personnel not employed by the competent authority), and the frequency and intensity of verification activities. The final responsibility for verifying that all post-mortem inspection and judgement requirements are met should lie with the competent authority
c. Carcasses and other relevant parts condemned by the competent person undertaking post-mortem inspection, as unsafe or unsuitable for human consumption should be identified as appropriate and handled in a manner that does not result in cross-contamination of meat from other carcasses and relevant parts. The reason for condemnation should be recorded, and confirmatory laboratory tests may be taken if deemed necessary.

4.1.9.5 Considerations for Post-mortem Inspection of Poultry
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4.1.9.6 Responsibilities of the Business Operator

a. Maintenance of the identity of a carcass and other relevant parts (including blood as appropriate) until inspection is complete;
b. Skinning and dressing of heads to the extent necessary to facilitate inspection, e.g., partial skinning to allow access to sub-maxillary lymph nodes, detaching of the base of the tongue to allow access to the retropharyngeal lymph nodes;
c. Skinning of heads to the extent necessary to allow hygienic removal of edible parts, when this is a processing option;
d. Presentation of a carcass and other relevant parts for inspection according to the requirements of the competent authority;
e. Prohibition removing or modifying intentional removal or modification of any evidence of a disease or defect, or animal identification mark, prior to post-mortem inspection;
f. Prompt removal of foetuses from the evisceration area, for rendering or other processes as allowed by the competent authority, e.g., collection of foetal blood;
g. Retention in the inspection area of all carcasses and other relevant parts required for inspection, until inspection and judgement has been completed;
h. Provision of facilities for identifying and retaining all carcasses and other relevant parts that require more detailed inspection and/or diagnostic tests before a judgement on safety and suitability can be made, in a manner that prevents cross-contamination of meat from other carcasses and other relevant parts;
i. Condemnation of parts of the carcass trimmed from the region of the sticking wound or excessive bruising;
j. Routine condemnation of the liver and/or kidneys from older animals where the competent authority has determined that there may be accumulation of heavy metals to an unacceptable level;
k. Use of health marks (as specified by the competent authority) that communicate the outcome of post-mortem inspection; and
l. Co-operation with competent persons undertaking post-mortem inspection, in all other ways necessary to facilitate effective post-mortem inspection, e.g., access to processing records, and easy access to all carcasses and other relevant parts.

4.1.9.7 Post-mortem inspection systems

The post-mortem inspection should include:

a. Procedures and tests that are risk-based to the extent possible and practicable;
b. Confirmation of proper, sticking and bleeding;
c. Availability of inspection as soon as is practicable after completion of dressing;
d. Visual inspection of the carcass and other relevant parts, including inedible parts, as determined by the competent authority;
e. Palpation and/or incision of the carcass and other relevant parts, including inedible parts, as determined by the competent authority according to a risk-based approach;
f. Additional palpation and/or incisions, as necessary to reach a judgement for an individual carcass and other relevant parts, and under appropriate hygiene control;
g. More detailed inspection of edible parts intended for human consumption compared with inspection of those parts for indicator purposes alone, as appropriate to the circumstances;
h. Systematic, multiple incisions of lymph nodes if it is necessary;
i. Other organoleptic inspection procedures, e.g., smell, touch;
j. Where necessary, laboratory diagnostic and other tests carried out by the competent authority or by the establishment operator as required;
k. Performance objectives or performance criteria for the outcomes of organoleptic inspection, if available;
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1. regulatory authority to slow or halt processing so as to allow adequate post-mortem inspection at all times;

m. removal of specified parts if required by the competent authority, e.g., “specified risk materials” SRM, for BSE control requirements; and proper use and secure storage of equipment for health marking.

The competent authority and industry should record and disseminate the results of post-mortem inspection as appropriate. Notifiable human or animal health diseases and cases of non-complying residues or contaminants should be reported to national competent authorities as well as to the owner of the animal(s).

Analysis of the results of post-mortem inspection over time is the responsibility of the competent authority, and the results of such analyses should be made available to all interested parties.

4.1.9.8 Post-Mortem Judgment

a. Post-mortem judgement of edible parts as safe and suitable for human consumption should primarily be based on food-borne risks to human health. Other risks to human health, e.g., from occupational exposure or from handling of meat in the home, also are an important consideration. Judgements in relation to suitability characteristics of meat should reflect consumer acceptability requirements appropriate to intended end-use.

b. Post-mortem inspection programs may be utilised to identify and judge carcasses and other relevant parts according to risks to animal health, as specified in relevant national legislation.

c. Judgement of edible parts as safe and suitable should take into account information from the following sources:

- information from primary production: The competent authority may take into account varying needs of different consumer populations so that suitability judgements do not distort the economics of the food supply.
- observations made of animals in the lairage at ante-mortem inspection;
- ante-mortem inspection; and
- post-mortem inspection, including diagnostic tests, where required.

h. Judgements should be based on science and risks to human health to the greatest extent possible, according to procedures and guidelines provided or dictated by the competent authority. Judgements should only be made by competent persons.

i. Where the initial results of post-mortem inspection are insufficient to accurately judge edible parts as safe or suitable for human consumption, a provisional judgement should be followed up with more detailed inspection procedures and/or tests. Pending the outcome of more detailed inspection and/or diagnostic tests, all parts of the animal that are required for further investigation should be held under the control of the competent person undertaking these activities.

j. Judgement categories for edible parts include:

- safe and suitable for human consumption;
- safe and suitable for human consumption, subject to application of a prescribed process for treatments e.g., cooking, freezing;
- held on suspicion of being unsafe or unsuitable, pending the outcome of further procedures and/or tests.
- unsafe for human consumption but able to be used for some other purpose, e.g., pet-food, feed and feed ingredients, industrial non-food use, providing there are adequate hygiene controls to prevent any transmission of hazards, or illegal re-entry to the human food chain;
- unsafe for human consumption and requiring condemnation and destruction;
- unsafe for animal health reasons as specified in national legislation, and disposed of accordingly.

k. When edible parts are judged to be safe and suitable for human consumption subject to application of a prescribed process, the specifications for that process should be verified by the competent authority as sufficient to eliminate/reduce or adequately remove the hazard or condition of concern, e.g., specifications for retorting, high temperature rendering and freezing.

l. The competent person can instruct that following post-mortem inspection, edible parts held under suitable inventory control can be designated as safe and suitable when subjected to a particular process e.g., freezing, cooking, canning.

m. In some circumstances, edible parts may be judged as suitable for human consumption but subject to restricted distribution because the animals were sourced from geographical areas under quarantine for animal health reasons.

n. Re-inspection of carcasses and/or meat products before shipping. Re-inspection is an essential process. It is required to ensure that the integrity of meat products is maintained subsequent to ante and post-mortem inspection. Ongoing surveillance is primarily the plant management’s responsibility and should be an integral part of any establishment quality control system. It is the inspector’s responsibility to monitor the quality control system by making periodic re-inspections.

o. When carcases are subjected to an immersion chilling process particularly in poultry plants, account should be taken that Equipment should be entirely emptied, cleaned and disinfected whenever is necessary and at least once a day.

p. All blood, manure and offal should be disposed of in an acceptable manner so as not to create a nuisance. Blood should be drained away into a separate pit and should not be allowed to drain into the waste water. Presence of site waste management plan and water treatment facility is highly important.

q. All risk materials should not come into contact with or incorporated into or contaminate any meat intended for human consumption. It should be placed in one or more leak-proof containers (see animal waste).
4.1.10 Finished Products & Temperature Control

a) Immediately after slaughter and dressing, carcases should be refrigerated so that the surface temperature of the carcase is reduced as follows:
- +10°C or colder within 10 hours of slaughter
- +4°C or colder within 24 hours of slaughter

b) Edible offal should be chilled without delay after trimming so that their temperature is reduced to +3°C or colder, and better to be in hanging position to facilitate proper air circulation.

c) The internal temperature of bone-in beef and lamb should be reduced to +7°C or colder before cutting begins. As an exception to the general rule, meat may be cut while warm in the following circumstances only:
- When the meat is transferred directly from the slaughter premises to the cutting room (or boning hall);
- When the slaughter plant and the cutting room are located in the same group of buildings and are sufficiently near to each other for the meat to be transferred in a single operation;
- When cutting is carried out immediately after transfer.

d) All production rooms, subsequent to the slaughter line, where meat is handled should be maintained at an ambient temperature of +12°C or colder during production.

e) All rooms where meat is stored should be refrigerated to ensure the following product temperatures are maintained:
- Chilled bone-in storage +4°C or colder
- Chilled vac-pack meat 0°C +/- 1°C
- Edible offal +3°C or colder
- Frozen meat -18°C or colder.

f) The temperature of all refrigerated storage and production areas should be monitored to ensure that they remain within the limits listed above.

g) A permanent written record of these temperatures should be retained together with the corrective action taken when temperatures are recorded outside these limits.

h) Finished products should be suitable in every way for human consumption and should not cause adverse health effects to the final consumer when they are prepared and eaten in accordance with its intended use.

i) Finished product should be stored and handled under conditions which minimise contamination and deterioration of the product.

j) All products should be clearly labelled or marked in a manner which identifies the date of production and batch or lot details. Frozen product should bear a label detailing the year and month of freezing as well as production and expiry dates. Carcass or parts of the carcass which have been passed as fit for human consumption and which are intended for sale should be branded with an official mark, using either firebrand or an approved ink which is harmless and easily adheres to the surface. The stamps which should be kept clean should be held in the custody of and only used under the supervision of the inspector. The official mark should indicate the date, type of carcass, source of the meat and the slaughterhouse.

k) Meat passed as fit for human consumption should be removed without undue delay from the dressing area. It should be placed in a holding area under conditions where a combination of relative air humidity, airflow and temperature acts to restrict microbial growth on the meat. The entry of individuals to meat holding areas should be limited to those necessary for efficient operation.

l) It is particularly important that returned or rejected product is clearly identified and isolated in a designated area and is handled in accordance with its final disposition. Regarding condemned meat:-
- i. Strict measures should be taken to ensure that condemned meat does not enter the food supply system.
- ii. Meat that is condemned unfit for human consumption or otherwise rejected, should forthwith be placed in a clearly identified container or room and held under supervision of the inspector. Such meat should be identified as condemned and unfit for human consumption by the use of special brands or ink of a particular colour, e.g. green, or denaturing substances e.g. kerosene or a phenolic compound.
- iii. The inspector should ensure that condemned meat brand cannot be removed or that the meat cannot act as a source of contamination during transport to the place of final disposal.
- iv. Condemned and rejected meat and other waste materials should be removed at least once daily to the place of final disposal.
- v. No person should remove or cause to remove any carcass or part of a carcass which has been condemned or retained by the inspector, except under the inspector’s supervision.
- vi. It is the responsibility of the manager to ensure that meat found to be unfit for human consumption is removed to the place of final disposal in accordance with the rules of the concerned controlling authority.
- vii. Meat identified as being unfit for human consumption due to disease should be incinerated or rendered in accordance with the regulations of the controlling authority.

4.1.11 Carcass meat

In the slaughterhouse, carcases and sides should be free from any visible contamination before they are presented for the final inspection. Visible contamination with faecal material, hair and milk should not be tolerated.

4.1.12 Bone-in and Boneless meat

a) All bone-in and boneless meat should be examined on delivery to ensure that it complies with the written product specifications.

b) This inspection should ensure that the product is free from any visible contamination with gut...
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contents or foreign bodies. Any visible contamination or foreign bodies should be trimmed off or removed and recorded, collected and disposed of in a hygienic manner. Representative product temperatures should be measured to ensure that the product has been refrigerated in accordance with specifications e.g.

- Bone-in meat (Deep muscle) + 7ºC or colder
- Boneless vac-pack 0ºC +/- 1ºC
- Frozen meat - 12ºC or colder.

4.1.13 Red offal

Red offal i.e. (livers, hearts & kidneys) for human consumption should be free from visible contamination with gut contents or other material. Offal should not be contaminated by metal, plastic, bone pieces or extraneous contaminants. Checks should be carried out to ensure that these performance standards are met.

4.1.14 Head meat

Head meat for human consumption should be free from visible contamination with gut contents or other material. Head meat should not be contaminated by metal, plastic, bone pieces or extraneous contaminants. Head meat should be refrigerated without delay and if chilled, stored in the same manner as red offal.

4.1.15 Product Identification/Recall system

The Abu Dhabi Food Law No (02) of 2008 requires all food business operators to have traceability systems in place that will enable them to withdraw and, where necessary, recall unsafe food and feed from the market.

Regulation No. (3) of 2008 and Code of Practice No (1) of 2010 on Food Traceability and Recall outline the legal requirements for the traceability and recall of unsafe foods from the market.

Guidance to compliance:

a. Each product should bear product code identification which is hygienically attached even if it is not mandatory
b. Each food portion should have permanent, legible code marks or lot numbers
c. The code should identify the establishment, the day, month, and year, in which the food was produced
d. All edible parts of the slaughtered animal should be tagged to ensure traceability to the slaughtered animal

e. For Poultry meat product identification:
   I. All freshly slaughtered poultry carcasses should be individually tagged.
      - Chilled chicken meat requirement:
      For chilled chicken “The word “Chilled” shall be clearly written in green color on the whole width of package (case)”.
      - Frozen chicken:
      - Date of slaughtering or freezing and expiry date in a non-coded manner (day-month-year).
      - Frozen unit net weight and number of frozen units in the box or carton.
      - Statement “With Edible Offals” if present.
      - The tags should identify the establishment the day, month, and year, in which the food was produced. (Post-dated tagging is not permitted)
   II. Service slaughter house slaughtering on behalf of clients shall indicate both the client’s name and the slaughterhouse name on the tags.
   III. Use by or best before date

VI. References:

2. The implementation of Food Safety Management Systems in Beef and Lamb Slaughter Plants based on HACCP Principles Ireland Code of Practice No. 8
5. Slaughterhouses code of good practice - (BCCDC) centre for disease control November 2007 since it issued by British Columbia.
7. Technical Regulation of Frozen chickens UAE'S GSO 986:1998; which is concerned with edible chicken broilers (not layers) carcasses, parts and giblets fit for human consumption and preserved by freezing.
8. Technical Regulation of Chilled chicken UAE'S GSO 322:1994; which is concerned with chilled meat carcasses and its cuts preserved under set chilling conditions.

VII. Annexes

APPENDIX 1 – ANIMAL SLAUGHTERING REQUIREMENTS ACCORDING TO ISLAMIC LAW REQUIREMENTS

A. Slaughtered animals that are unlawful for Muslims to eat:
   - Carrion, strangled and fatally beaten animal, animal dead through falling from a height, horn-
butted animal, animal which has been partially devoured by predatory animals and animal which has been dedicated to any, other than God.
- Pigs, dogs, domestic donkeys, elephants, and mules.
- Predatory animals, such as lions, tigers, and bears.
- Predatory birds of prey, such as eagles and falcons.

B. Requirements of slaughterer:
- The slaughterer must be Muslim or Kitabi (Jewish or Christian), under certain circumstances.
- The slaughter shall be carried out under the supervision of a rational equitable Muslim who knows well the rules of “Dhaka”

C. Requirements of slaughtering tools:
- The slaughtering tool shall be made from any material except bones or nails.
- The slaughtering tool shall be clean and sharp that cuts by its sharp edge and not by its weight. The slaying (nahr) shall be carried out as completely as possible.
- The automatic slaughtering means in the slaughter houses using this system shall be adjusted so as to cut only the four jugular veins without the whole neck (See “Requirements of slaughtering method” below).
- Beating on head or similar action, such as using of bolt shot pistol or non-penetrative percussion or stunning by carbon dioxide is not permitted.
- Animals shall remain alive in case of using low voltage electrical stunning on head only, so as to be ritually killed. This can be indicated by animal movements after slaughtering under the Isthmus of Thyroid.

D. Requirements of slaughter method (Dakah):
- God’s name should be invoked on the animal to be slaughtered (In the Name of Allah).
- Ritual Islamic slaughter (Dakah) shall be carried out by one of the sanctioned methods mentioned in (2.1).
- Animals waiting to be slaughtered should not see the ones that are being slaughtered.
- Animals should not be pushed, beaten or mistreated while taken to be slaughtered.
- Animal slaughtering shall be carried out by cutting the animal’s trachea, esophagus and jugular veins and slaughtering shall be carried out from the front side “towards the chest” and not from behind “towards the back”.
- Animal’s neck shall not be cut of broken or any similar act be made until bleeding of blood is stopped.
- No part shall be cut from the animal’s body before the animal’s death.

E. Requirements of inspection, certification and stamps:
- Each lot of meat shall be accompanied with an attested certificate issued by any of the relevant consulates of a G.C.C. states or by their authorized representative or issued by an Islamic centre or organization (if any) acknowledged by the concerned bodies in each of the G.C.C. state countries to prove that slaughtering has been carried out according to the Islamic rules.
- The certificates shall be attested by the relevant GCC states consulate or by their authorized representative.
- • The stamp of the Islamic centre or organization shall be tamper proof and the branding ink shall be stable and unharmed to health.
- • Each carcass (chilled or frozen) or final containers of special meat cuts shall be branded with the Islamic centre or organization official stamp, and by the centre’s authorized person to indicate that slaughter has been carried out under the supervision of that centre or organization.

F. Prohibited Acts:
- The following acts are not allowed
  - Carrying out the slaughtering and storage in places and with tools used for animals which are unlawful for Muslims to eat.
  - Causing death of animal before slaughtering: Animals which die before slaughtering are considered to be carrion and are refused.
  - Electrical stunning in case of birds.
  - Beating or hitting the animals while taken for slaughtering.

APPENDIX 2 – EVISCERATION ACCIDENT PROCEDURE

1. STOP the line
2. REMOVE the stomach and intestines in the normal manner, taking care, as far as possible, to avoid contaminating the carcase.
3. WASH and SANITISE hands, arms, equipment and apron. (Change overalls if they have been soiled)
4. Wash the internal surface of the abdominal and chest cavities with low pressure cold water to remove gross visible gut contents.
5. TRIM all visible contamination from the surface of the carcase – continually cleaning and sanitising the knife.
6. Remove RED OFFAL in the normal manner. (If contaminated, discard, after official inspection is completed).
7. Apply plant HOLD LABELS – one to each side.
8. RE-START the line and record the incident.
9. Rinse down WORK STATION with low pressure water.
10. Before the final wash, CUT OUT the brisket bone and any other tissues which have been contaminated e.g. the shin, and DISCARD.
11. RERIGERTE rapidly
12. The following day, Quality Control personnel must RE-EXAMINE this carcase before deciding on the FINAL DISPOSITION, in conjunction with the plant veterinary inspector.
13. Peel-off and discard the pleura from the inside rib cage. Trim and discard any other contaminated tissues.
APPENDIX 3 – CLEANING PROGRAM

1. Standard Gross Clean

**Purpose:**
To remove thick deposits and pieces of product, packaging, waste, etc., which have accumulated during production. If such debris is not removed the effectiveness of the cleaning and sanitising stages will be greatly reduced, or, in some cases, made worthless.

**Method:**
- a) Handpick pieces of product, etc. from working surfaces, from conveyers outside and inside, from crevices in machinery etc.
- b) Dismantle machinery if necessary.
- c) Remove any large items stuck on shackles or splattered onto walls.
- d) Using a hand scraper, scrape off any thick scum or accumulation.
- e) Remove any packaging materials.
- f) Sweep up any debris on the floor, shovel carefully into bags or bins and remove from the area.
- g) Check the thoroughness of your gloss clean: Walk around and inspect the area and all surfaces and crevices. There should be no particles bigger than a little fingernail remaining and no loose, soft scum or thick layers of grease, fat, etc.
- h) The floor should be clear of all pieces of product, plastic bags, cardboard boxes etc. and all rubbish bins removed from the area.
- i) If necessary, arrange items of equipment so that the next cleaning stage can be carried out unhindered.

2. Standard Pre-Rinse

**Purpose:**
To remove gross debris, e.g. layers of dirt, grease etc. from areas manual picking and brushing will be too time-consuming, too difficult or ineffective; or as follow-up to a manual gross clean.

**Method:**
- a) After the standard gross clean (if applicable in that area) rinse the surfaces, using either warm, pressurised water or cold, low-pressure water (form cold hose), according to the schedule.
- b) Rinse the dirtiest area first.
- c) Try not to blast particles all over the place.
- d) Generally work from top downwards, from equipment to walls to floors.
- e) Remember the inside and underside surfaces.
- f) Direct rinsed debris toward the floor drain without blasting it. Use a squeegee to brush the loosened soil towards a drain if the particles are small. If possible, brush and shovel up any large accumulations of dirt.
- g) Check the thoroughness of your pre-rinse: Walk around and inspect the area and all surfaces and crevices. There should be no soft scum or particles larger than an apple pip remaining. All pools of liquid water etc. should have been washed away and squeezed to drain.

Note: Do not use the pressure rinse or cold hose on any non-water proofed equipment, especially if electrical.

8. Satisfy yourself that all is ready for the next cleaning stage.

3. Standard Foam Clean

**Purpose:**
To apply detergent foam to the surfaces so that the foam can stay on long enough to soften and loosen scum and grease so that they may be completely removed on rinsing. The advantages of applying detergent as foam are that it clings, it penetrates cracks and crevices, it is fast and easy to apply and it is easy to check for thoroughness.

**Method:**
1. After the standard Gross Clean and Pre-Rinse (if applicable) apply the foam using the foam lance.
2. Connect the injector to the high pressure rinse outlet and connect the hose to the foam lance.
3. Place a drum of the chosen foam detergent on the floor beneath the foam lance.
4. If the suction tube of the foam lance is full of detergent, which is either not known or is known to be different from the detergent now to be used, clean out the tube by first sucking up water before dropping the tube into the new chemical.
5. Fit the foam lance to the gun and adjust the chemical injector for the concentration required. Check with Supervisor/Manager if in doubt.
6. Point the lance to the ground and squeeze the trigger until foam appears out of the lance.
7. Apply foam as evenly as possible to all the surfaces generally, top to bottom; equipment first then walls, if included, then floors, if included.
8. On the vertical surfaces, especially smooth, metal surfaces take care not to apply too thick a foam layer as this will drag down the foam with its weight. (For stubborn scales on vertical surfaces apply the foam lightly two or three times at 5 minute intervals).
9. On the horizontal and intricate surfaces the foam will naturally cling more easily and may be applied more heavily in a one-coat application.
10. Check the thoroughness of your foaming: Walk around your area, look at the back, the underside, the hidden parts of the equipment. Re-foam where necessary.
11. Allow the foam to act for between 15 and 20 minutes. Rinsing off earlier than 15 minutes will not allow the foam to completely do its job. If the foam is left on too long in warm conditions it
may dry out. Very stubborn soils may be helped by physical agitation of the foam using brushes.

12. When finished with the foam lance, remove the suction tube from the chemical drum, suck up water for a few seconds then squeeze the gun trigger until the foam stops coming out of the lance.

13. Remove chemical injector and foam lance and prepare for rinsing.

APPENDIX 4 – SLAUGHTER HALL PRE PRODUCTION CHECK SHEET

Carried out by ____________________  Day __________  Time __________

Structural Hygiene Check

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Equipment Hygiene Check

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