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**Handling, processing and storage of  
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## **Foreword**

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 289 was prepared by Technical Committee RSB/TC 5 on *Meat and meat products*.

### **Committee membership**

The following organizations were represented on the Technical Committee on *Meat and meat products* (RSB/TC 5) in the preparation of this standard.

Kime Supermarket Ltd

Yak Fair Trade Ltd

Rugali Meat Processing Company Ltd

Gasabo District

National Industrial Research and Development Agency (NIRDA)

Nyabihu TVET School

Nyarutarama Business Incubation Centre (NBIC)

Rwanda Food and Drug Authority (RFDA)

Rwanda Inspectorate, Competition and Consumer Protection Authority (RICA)

Rwanda Standards Board (RSB) – Secretariat

# Handling, processing and storage of poultry — Code of practice

## 1 Scope

This Committee Draft Standard lays down guidelines for efficient handling, processing, cold storage and transportation of poultry.

## 2 Normative references

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

RS 47, *Dressed poultry (Chicken) — Specification*

RS EAS 12, *Potable water — Specification*

RS CAC/RCP 1, *Code of practice — General principle for food hygiene*

RS 185, *Code of Hygienic practice for meat.*

## 3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply.

### 3.1

#### **broiler or fryer**

young chicken of either sex, that is, tender-meated with soft pliable, smooth-textured skin and flexible breastbone cartilage

### 3.2

#### **hen or stewing chicken or fowl**

Mature female chicken with meat less tender than that of a roaster, and nonflexible breastbone tip

### 3.3

#### **culled poultry**

Unproductive poultry which are sent for slaughter

### 3.4

#### Accessories

rooms of the slaughterhouse other than slaughter hall reserved to accommodate other related poultry slaughtering activities such as washing, evisceration, packaging, chilling, storage and dispatch.

## 4 Hygiene and health condition for slaughtering poultry

In addition to the principles of meat hygiene at primary production stipulated in RS 185, poultry intended for the production of meat shall at all times be raised in accordance to good animal husbandry practices or any relevant codes of agricultural practices. The place of production shall establish and maintain the following programs and measures:

- a) to maintain good and sound health condition of population; to prevent the entry and spread of poultry diseases including exotic diseases of public health or animal health importance; and apply control and/or eradication measures as appropriate;
- b) to control the use of chemical substances such as veterinary drugs, growth promotants, pesticides, insecticides and other agricultural chemicals or contaminants as part of the health program, pest control, treatment of farm facilities and surroundings, etc., that may give rise to harmful levels of residues or contaminants in meat;
- c) to control feedstuff that may recycle animal products and waste with pathogens unless precautions and treatment were undertaken to minimize this risk; or to control feedstuff containing chemical substances such as veterinary drugs, growth promotants, pesticides, insecticides and other agricultural chemicals or contaminants that can result in residues in meat exceeding the maximum levels adopted by the Codex Alimentarius; and
- d) method of disposal or harvest of population shall not constitute and pose hazard to public or animal health and shall be environmentally sound.

## 5 Transport of poultry

**5.1** The transport of slaughter poultry should be carried out in a manner that does not have an adverse impact on the safety and suitability of poultry meat.

**5.1.1** Slaughter poultry shall require transport facilities to the poultry dressing establishment that ensure that:

- a) soiling and cross contamination with faecal material is minimized;
- b) new hazards are not introduced during transport;
- c) animal identification as to the place of origin is maintained; and

- d) avoiding undue stress that may adversely impact on the safety of meat (such as stress-induced shedding of pathogens, overcrowding and suffocation, exposure to extreme temperature and transport over long distances without feed and water).

**5.1.2** The transport vehicles should be designed and maintained so that:

- a) poultry are loaded, unloaded and transported easily and with minimal risk of injury;
- b) ventilation is adequate;
- c) cleaning and sanitizing is readily achieved; and
- d) use of floor gratings, crates or similar devices limit soiling and cross contamination with faecal material;

**5.1.3** Where the vehicle has more than one deck, poultry should be protected from cross contamination as appropriate.

**5.1.4** The transport vehicles, and crates where used shall be cleaned and sanitized as soon as practicable after poultry have been unloaded at the poultry dressing establishment.

## **6 Slaughtering plant and facilities**

**6.1** The following principles should be taken into consideration when designing poultry slaughterhouse:

- a) building design and layout shall be planned to meet the basic requirements of divisions into clean and unclean working operations;
- b) design and construction of the building shall suit the purpose of the building and should be easy to maintain, clean and sanitize as follows:
  - 1) the roof of the slaughter hall and all buildings with direct relation to the service of the slaughter hall shall be such that they do not transmit any undesirable substances to the slaughter bird;
  - 2) the roof cover of the slaughter hall and its accessories shall be at least iron sheet;
  - 3) the floor shall meet the following conditions:
    - i) waterproof,
    - ii) not slippery,
    - iii) flat, no holes,
    - iv) no crack,

- v) strong to bear the burden, and
  - vi) slope slightly into waste disposal as well as easy to clean and disinfect;
- 
- c) the wall of the slaughter hall shall be finished with washable, non-absorbent and easy to clean material;
  - d) the windows of the slaughter hall and accessories shall be at least 2 m high from the floor, glazed with glass and the ledge should be sloped at a 45° angle to the outside;
  - e) to avoid insects, rodents and vermin, windows and openings made for sufficient ventilation shall be covered with screens;
  - f) door shall be made from non-corrosive, waterproof and non toxic material, and able to prevent entrance of pest; and
  - g) all corners and edges of the slaughter hall and accessories shall have curved finishing.
  - h) size of the building shall suit the capacity of production so that tools arrangement cannot disturb production process, and the building is able to accommodate workers' movement.
  - i) have good ventilation and air circulation, and the air flows should be arranged to come from the clean area.

**6.2** Separate rooms shall be provided for the following operations:

- a) live poultry receiving and holding and shall:
  - 1) be provided for washing and disinfection of coops;
  - 2) be adequately spaced;
  - 3) be properly ventilated;
  - 4) avoid development of odour and harbourage of pest;
  - 5) provide sufficient for waste and condemnation receptacles;
  - 6) provide adequate space for the conduct of ante-mortem inspection activity;
  - 7) be clean and easily maintained and sanitized; and
  - 8) be located where birds shall not be disrupted during their resting period.

- b) slaughter, scalding and defeathering;
- c) evisceration, washing and giblet processing;
- d) chilling;
- e) cutting and packaging;
- f) storage;
- g) the storage for inedible part such as feathers, viscera and concerned poultry carcass, prior to transport to rendering plant for the preparation of inedible fats and animal feed; and
- h) there shall be dispatch area within the slaughter premises

**6.4** Facilities such as toilets, showers, changing rooms and equipment and material store shall be available and in appropriate conditions.

**6.4** Particular attention should be paid to water supply to the poultry dressing plant. The quality of water used shall satisfy the requirements for potable water RS EAS 12.

**6.5** The source of power shall be considered when establishing the poultry slaughter house.

**6.5** Particular attention shall be given to ventilation and illumination. The ventilation shall be sufficiently strong, properly situated and should not cause glare.

## **7 Poultry processing requirements**

### **7.1 General requirements**

In all stages of poultry processing the requirements in RS 185 and RS CAC/RCP 1 shall be considered.

### **7.2 Requirements and presentation for slaughter of poultry**

**7.2.1** Only healthy, clean and appropriately identified poultry shall be presented and accepted for slaughter.

**7.2.2** All poultry birds shall be screened upon arrival at the poultry slaughter establishment accompanied with veterinary health certificate and transport permit.

**7.2.3** Slaughter poultry shall be adequately rested at a minimum of two (2) hours prior to slaughter. Diseased or defective Poultry shall be separated from others, to enable them to receive any special attention and to prevent cross contamination to normal animals, facilities, equipment and personnel.

**7.2.6** The conditions of holding of poultry birds shall minimize cross contamination with food-borne pathogens and facilitate efficient slaughter.

### **7.3 Ante mortem inspection requirements**

**7.3.1** All poultry presented for slaughter shall be subjected to ante -mortem inspection and may be carried out upon arrival at the poultry slaughter establishment by a competent meat inspector.

**7.3.2** Poultry shall be accompanied with proper documents such as veterinary health certificate and transport permit, and shall be properly identified and capable of being traced back to the farm source. Veterinary health certificate and transport permit shall comply with national legislation.

**7.3.3** Ante-mortem inspection shall be carried out in a systematic manner and shall ensure that poultry found to be affected by a disease or defect that would render their meat unfit for human consumption are so identified and removed from the food chain.

**7.3.4** Ante-mortem inspection shall ensure that poultry whose meat may be fit for human consumption but that require special handling during slaughter and post -mortem inspection, are segregated, subjected to thorough inspection and shall be the last poultry bird to be slaughtered.

**7.3.5** No poultry shall proceed for slaughter until an inspector has carried out ante-mortem inspection and has passed it as suitable for slaughter. Exceptions may be under emergency slaughter procedures where a delay in carrying out ante-mortem inspection would result in undue suffering of poultry.

**7.3.6** Ante-mortem inspection shall detect deviations from normality, whether demeanour, behaviour, appearance or other clinical signs that might indicate a disease or defect requiring special handling or closer examination.

**7.3.8** Special measures, operations or procedures shall be instituted by the poultry slaughter establishment operator when:

- a) poultry are not sufficiently clean;
- b) poultry that have died in transit or have died after arrival;
- c) a zoonotic disease posing an immediate threat to either animal or humans is present, or suspected;
- d) a poultry health disease subject to quarantine restrictions is present, or suspected;
- e) a poultry identification requirement from farm source are not met; and
- f) declaration from the farm source of any relevant information are absent or inadequate.

### **7.4 Post-mortem inspection and examination requirements**

**7.4.1** Post-mortem inspection shall be done after evisceration and before carcass washing.

**7.4.2** Poultry carcasses and their relevant parts and by-products shall be subjected to post-mortem inspection and shall be carried out as soon as practicable.

**7.4.3** Post-mortem inspection of poultry carcasses and parts thereof shall be carried in accordance RS

**7.4.4** Poultry carcasses and parts thereof shall be condemned for human consumption when post-mortem examinations have revealed that:

- a) they are hazardous to poultry slaughterers and handlers, consumers and other animals;
- b) when there are severe organoleptic deviations from normal meat;
- c) when laboratory tests indicate that they contain contaminants or residues which exceed the established limits; and
- d) when the poultry meat has been conditionally approved for human food but it has not been treated as stipulated within the indicated period of time.

**7.4.5** The condemned poultry meat shall remain under the custody of the inspector until the required treatment or method of disposal has been applied in a safe manner.

## **7.5 Handling and processing**

### **7.5.1 General requirements**

7.5.1.1 The slaughtering, evisceration and packaging of poultry shall be conducted in such a manner, as result in hygienic processing, proper inspection and preservation.

7.5.1.2 The poultry meat from the slaughtering process shall comply with the requirements in RS 47.

### **7.5.2 Stunning**

The poultry should be stunned. In that case the poultry may be hung on shackles attached to chains running on an overhead track and made unconscious with one blow on the head. In large establishments poultry may be stunned by efficient electrical stunners.

### **7.5.3 Bleeding**

Poultry should be bled by giving a cut on the jugular vein below the earlobe and slid along the line while being bled out, towards the scald bath. In small processing plants, the operation may be done manually. The bleeding time should preferably be not less than 90 sec to ensure proper bleeding.

### **7.5.4 Scalding**

7.5.4.1 Scalding shall be done after all movements/reflexes have ceased. The temperature of the scalding water should be maintained from 55 °C to 57 °C, and the poultry should be kept in it for about 2 min.

7.5.4.2 Where a wetting agent is added to scalding water it shall be an approved chemical and used according to the manufacturer's instructions.

7.5.4.2 Care should be taken to maintain a bacterial count less than 10 000 per mL in this water, unless the scald vessel is supplied with a suitable overflow.

7.5.4.3 The scalding container shall be thoroughly cleaned daily.

7.5.4.4 The scalding water shall be changed regularly during slaughtering.

## **7.5.5 Plucking (defeathering)**

**7.5.5.1** Immediately after scalding, the plucking of poultry shall be done.

**7.5.5.2** Defeathering shall be carried out in a manner which minimizes contamination of the carcass. Plucking, may be done by a machine or hands. If Mechanical pluckers are used, the following shall be considered:

- a) they shall be installed as to be accessible for thorough and regular cleaning and for the removal of any accumulated feathers and microorganisms;
- b) they shall be constructed so as to prevent the scattering of feathers; and
- c) plucking should be followed by a brief manual fine-plucking.

**7.5.5.3** Continuous collection and removal of feather from the defeathering and scalding areas shall be carried out without contamination of the product or processing area.

## **7.5.6 Removal of feet**

From hygiene point of view, removal of the feet at the tarsometatarsal joint shall be done before washing as this would make it possible to avoid dirt and dirty water from the feet and legs running down the body, after opening the abdominal cavity.

## **7.5.7 Washing**

All bird shall be washed after defeathering and before any further incision is made in the carcass. The washing should be done by a spray or constant flow of potable water, chlorine solution or a solution of another approved chemical.

## **7.5.8 Evisceration**

**7.5.8.1** Poultry shall be eviscerated immediately after being slaughtered.

**7.5.8.2** Poultry killed by decapitation shall be trimmed to remove the neck tissue that could have been contaminated during scalding and defeathering.

**7.5.8.3** The alimentary tract shall be removed intact. First the oil gland should be removed. The abdominal cavity should then be opened by means of a transverse cut. A circular cut should be made around the vent so that the intestines shall be removed.

**7.5.8.4** All utensils, hands, and food contact surfaces shall be disinfected and rinsed in potable water before and after evisceration process

**7.5.8.5** During a manual evisceration process, all utensils, hands, and food contact surfaces shall be disinfected and rinsed in potable water when they get in contact with faeces,

### **7.5.9 Carcass washing**

After the post-mortem inspection has been carried out, the poultry shall be given a washing with potable water and the following should be respected:

- a) after a preliminary spray, the poultry shall be once more sprayed with water after which the lungs and the kidneys shall be removed by vacuum or by means of a suitably constructed fork; and
- b) the poultry should be given a further spray with water after the removal of lungs and kidneys to ensure that the bird entering the chiller is as clean as possible.

### **7.5.10 Chilling**

**7.5.10.1** Every part of any poultry carcass shall be chilled to an internal temperature of 4 °C or cooler as soon as practicable after slaughtering and taking account of the nature and intended use of the final product. The temperature of 4 °C should be reached within 24 h of slaughter at 1 °C.

**7.5.10.2** If immersion chilling is adopted, it shall be subject to the following conditions:

- a) all water and ice shall be potable on entry to the tank;
- b) microbiological and chemical hazards shall be avoided; and
- c) water flow should be adequate to achieve the desired chilling.

### **7.5.11 Grading**

The poultry shall be graded in accordance with RS 47.

### **7.5.12 Packaging**

**7.5.12.1** Before packaging, the gizzard rid of the internal contents, the heart after removal of pericardium, the liver and the neck should be placed into the abdominal cavity of the carcass enclosed in authorized food grade packaging material. The carcass should be dressed by folding back the wings and introducing the legs through the abdominal opening out through the vent opening.

**7.5.12.2** The drained and dressed poultry shall be packed into suitable sized authorized food grade packaging material or other suitable food grade packaging materials. Before final sealing, the packages shall be immersed into vats containing water to expel the content of air between the carcass and the bag, taking care that no water is introduced in the pack. Alternatively, vacuum wrapping or shrunk wrapping of the packages may be adopted. After the air inside is expelled, the bag shall be sealed in a sealer or shall be knotted using rubber bands.

### **7.5.13 Storage**

**7.5.13.1** The bulk quantities of processed poultry may be stored either under refrigeration or frozen.

**7.5.13.2** The period of storage under refrigeration shall not exceed 7 days when the poultry is stored under refrigeration at 1 °C to 4°C

**7.5.13.3** The period of storage under freezing shall not exceed 9 months when the poultry is stored at -23 °C to -18 °C

## **8 Transportation**

**8.1** The guidelines presented in this clause are supplemental to the objectives and guidelines in Section VIII of RS CAC/RCP 1.

**8.2** Due to the potential for growth of pathogenic and spoilage micro-organisms under conditions of inadequate temperature control, poultry shall be transported at temperatures that achieve safety and suitability objectives.

**8.3** Equipment for continuous monitoring and recording of temperatures shall accompany transport vehicles and bulk containers wherever appropriate.

**8.4** Additionally, the conditions of transport shall provide adequate protection from exogenous contamination and damage, and shall minimise growth of pathogenic and spoilage micro-organisms.

**8.5** If poultry is inadvertently exposed to adverse temperature conditions or sources of contamination that may affect safety and suitability, an inspection shall be carried out by a competent authority before further transport or distribution is allowed.

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