



CD/K/690:2010
ICS 67.120

EAST AFRICAN STANDARD

Canned ham — Specification

EAST AFRICAN COMMUNITY

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

Foreword

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

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

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

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

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

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Introduction

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

IS 4951:1975(R2000), *Specification for Ham, Canned*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp

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

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

USDA Plant Inspectorate Service website: http://www.aphis.usda.gov/import_export/plants

European Union: http://ec.europa.eu/sanco_pesticides/public

Assistance derived from these sources is hereby acknowledged.

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Canned ham — Specification

1 Scope

This standard prescribes the requirements and methods of sampling and test for canned ham and shoulder.

2 Normative references

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

EAS 5, *Refined white sugar — Specification*

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

EAS 35, *Edible salt — Specification*

EAS 38, *Labelling of prepackaged foods — Specification*

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

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

EAS 103, *Schedule for permitted food additives*

EAS 123, *Distilled water — Specification*

- ISO 936, *Meat and meat products — Determination of total ash*
- ISO 937, *Meat and meat products — Determination of nitrogen content (Reference method)*
- ISO 1442, *Meat and meat products — Determination of moisture content (Reference method)*
- ISO 1443, *Meat and meat products — Determination of total fat content*
- ISO 1444, *Meat and meat products — Determination of free fat content*
- ISO 1737, *Evaporated milk and sweetened condensed milk — Determination of fat content — Gravimetric method (Reference method)*
- ISO 1841-1, *Meat and meat products — Determination of chloride content — Part 1: Volhard method*
- ISO 1841-2, *Meat and meat products — Determination of chloride content — Part 2: Potentiometric method*
- ISO 2294, *Meat and meat products — Determination of total phosphorus content (Reference method)*
- ISO 2917, *Meat and meat products — Measurement of pH — Reference method*
- ISO 2918, *Meat and meat products — Determination of nitrite content (Reference method)*
- ISO 3091, *Meat and meat products — Determination of nitrate content (Reference method)*
- ISO 3496, *Meat and meat products — Determination of hydroxyproline content*
- ISO 4134, *Meat and meat products — Determination of L-(+)- glutamic acid content — Reference method*
- ISO 4831, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number technique*
- ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*
- ISO 4833, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony-count technique at 30 degrees C*
- ISO 5537, *Dried milk — Determination of moisture content (Reference method)*
- ISO 5553, *Meat and meat products — Detection of polyphosphates*
- ISO 5554, *Meat products — Determination of starch content (Reference method)*
- ISO 5985, *Animal feeding stuffs — Determination of ash insoluble in hydrochloric acid*
- ISO 6491, *Animal feeding stuffs — Determination of phosphorus content — Spectrometric method*
- ISO 6579, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*
- ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique*
- ISO 8156, *Dried milk and dried milk products — Determination of insolubility index*
- ISO 9390, *Water quality — Determination of borate — Spectrometric method using azomethine-H*

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

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

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

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

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

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

3 Definitions and presentation

3.1 Definitions

For the purpose of this standard, the following definitions shall apply.

3.1.1

meat

the uncured, sound and wholesome flesh of the pig, namely, pork, used as food (see CD-K-673:2010)

3.1.2

Offal

This includes brain, fries (liver), gut, paunches, udders, sweetbreads (thymus, pancreas) tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, skin (rind), cartilage and bony tissue.

3.2 Description

Pork luncheon meat is a mixture of minced meat and cereal containing not less than 80 percent pork meat including fat (not exceeding 25 percent).

4 Requirements

4.1 Hygienic requirements

The material shall be prepared and handled under strict hygienic conditions by persons free from contagious and infectious diseases and only in premises maintained in a thoroughly clean and hygienic condition and having adequate and safe water supply (see EAS 39) and duly approved and licensed by the public health authorities concerned. All workers shall use clean, washed, white clothings. Necessary precautions shall be taken to prevent incidental contamination of the product from soiled equipment or from personnel suffering from injuries.

4.1.1 All equipment coming in contact with raw materials or products in the course of manufacture shall be kept clean. An ample supply of steam and water, hose, brushes and other equipment necessary for proper cleaning of machinery and equipment shall be available. The equipment may be sterilized by immersion in/or swabbing with hypochlorite or other suitable chlorine solution.

4.1.2 Quality of water used for processing shall conform to EAS 12.

4.2 Raw material

4.2.1 Hams for canning shall be derived and cured strictly in conformity with CD-K-677-2010.

4.2.2 The cured ham shall be in good condition at the time of use. The ham shall not have been frozen after curing.

4.2.3 The ham shall have a good proportion of lean to fat and shall be firm, have a fine texture and good colour.

4.2.4 The ham shall be boneless and shall have no excessive fat lining and loose skin flaps.

4.2.5 The ham selected for cooking shall be an individual piece or in blocks of gammon meat or meat from shoulder.

4.2.6 Salt

Salt used for curing shall conform to EAS 35.

4.3 Preparation

During preparation, the precautions given in 4.3.1 to 4.3.10 shall be exercised in the sequence mentioned below.

4.3.1 The ham shall be treated initially for 30 minutes at boiling point followed by a reduction in temperature ranging from 83 to 85 °C.

4.3.2 The cured ham shall be shaved and cleaned to remove all adhering foreign material and free from loosely attached meat and fat trimmings.

4.3.3 The ham shall be immersed in clean running water for a reasonable period to drain off excess salt and wash any other extraneous material.

4.3.4 The ham shall be taken out of water and allowed to drain off the water from the pockets of the femur bone cavity.

4.3.5 The ham shall be tightly packed in stainless steel or cast iron frames fully nickled on inside and lined with suitable material.

4.3.6 The ham shall be cooked in clean boiling water or steam under pressure for a reasonable time.

4.3.7 The ham frames shall be allowed to cool and set the meat block.

4.3.8 The cooled ham shall be cleaned off the adhering lining material and loosely attached trimmings, extra fat and skin.

4.3.9 The ham shall be cut into suitable blocks and filled into cans.

4.3.10 Gelatin, rendered fat, brine may be added, which in case of a contract shall be agreed to between the vendor and the purchaser.

4.4 Processing

The filled cans shall be processed at such temperature and pressure and for such length of time as will ensure thorough cooking and adequate sterilization of the finished product without burning, scorching or overcooking.

4.5 Finished product

4.5.1 The contents of the can on opening shall not display any excessive disintegration. Excessive separation of muscle resulting in a fluffy suspension shall be considered disintegration.

4.5.2 The product shall have a pleasant flavour, characteristic taste neither excessive salty nor sweetish. The product shall be free from any foreign odour or flavour, such as putrid, stale, fermented, rancid, musty and staggy pork odour.

4.5.3 The product shall be free from foreign material, such as dirt, insect parts, wood, glass and metal particles.

4.5.4 The lean meat or fat shall be free from foreign colour, such as intense dark red, green, black purple, or dark brown colour on either interior or outside area.

4.5.5 The material shall also conform to the requirements prescribed in Table 1.

Table 1 — Microbiological, heavy metal and chemical requirements for canned ham

Type of contaminant		Requirement	Method of test
(i)	Microbiological requirements	Shall be commercially sterile	Annex G of CD-K-692-2010
(ii)	Arsenic, mg/kg, max	1.0	EAS 41
(iii)	Copper, mg/kg, max	15.0	EAS 41
(iv)	Tin, mg/kg, max	140.0	EAS 41
(v)	Mercury, mg/kg, max	0.5	EAS 41
(vi)	Lead, mg/kg, max	5.0	EAS 41
(vii)	Cadmium, mg/kg, max	0.3	EAS 41
(viii)	Zinc, mg/kg, max	19.0	EAS 41
(ix)	Total fat, % by mass, Max	1.5	ISO 1443
(x)	Free fat, % by mass, Max	0.5	ISO 1444
(xi)	Sodium chloride, % by mass	1.5 to 3.5	Annex A
(xii)	Nitrate (as sodium nitrate) in the drained meat, % by mass, Max	0.05	ISO 3091
(xiii)	Nitrite (as sodium nitrite) in the drained meat, % by mass, Max	0.02	ISO 2918
(xiv)	Vacuum at 27 °C ± 2 °C at normal atmospheric pressure, Min	33.33 kN/m ²	Annex B

5 Packing and marking

5.1 Packing

5.1.1 Packing in cans

The material shall be packed in suitable open top sanitary cans. The cans shall be cleaned with hot water before filling. The cans shall be either plain or internally lacquered and hermetically sealed. When lacquered, the lacquer shall not be fat soluble and such that it will not be destroyed, altered or its components transferred in the material during processing or subsequent storage and transport.

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5.1.2 Packing in cases

Unless otherwise specified, cans shall be packed in cases sufficiently strong to withstand rough handling during transit. The number of cans in each case shall be subject to the agreement between the purchaser and the packer.

5.2 Marking

5.2.1 The cans may be labelled either by printing or stencilling on the cans themselves or by pasting printed labels as agreed to between the purchaser and the vendor. The label shall bear the following information:

- a) Name and type of the material along with brand, if any,
- b) Name and address of the manufacturer,
- c) Net weight of the contents of the can,
- d) Net mass of the meat in the can
- e) Batch number or code number — embossed indelibly on the container
- f) Declaration to the effect that no artificial colouring matter has been used
- g) Licence number given by the authorities.

5.2.2 Each container may also be marked with a Certification Mark.

6 Sampling

Sampling of bacon rashers, canned, shall be done according to the method prescribed in Annex C of CD/K/687:2010.

7 Tests

Tests shall be carried out as prescribed in the relevant appendices specified in Table 1.

Annex A (normative)

Determination of sodium chloride

A.1 Reagents

A.1.1 Sodium carbonate solution — 5 percent (w/v).

A.1.2 Dilute nitric acid — (1: 4), freed from lower oxides of nitrogen by boiling till it becomes colourless.

A.1.3 Standard silver nitrate — 0.1 N.

A.1.4 Nitrobenzene

A.1.5 Ferric alum indicator solution — A saturated solution of ferric alum $[\text{FeNH}_4(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}]$.

A.1.6 Standard potassium thiocyanate solution — 0.1 N.

A.2 Procedure

A.2.1 Preparation of sample — Pass the material through a mincing machine twice to ensure thorough mixing. Transfer the minced sample to a large porcelain mortar and grind with a pestle for 5 minutes to ensure homogeneity.

A.2.2 Weigh accurately about 5 g of the finely ground and thoroughly mixed sample in a platinum dish and add 20 ml of the sodium carbonate solution. Evaporate to dryness and ignite as thoroughly as possible at a temperature not exceeding dull redness. Extract with hot water, filter and wash. Return the residue to the platinum dish and ignite to ash. Dissolve the ash in the dilute nitric acid. Filter and wash the residue thoroughly. Collect the filtrate and washings and add to the water extract. To this solution, add a known volume of the standard silver nitrate solution in slight excess. Stir well, add 5 ml of nitrobenzene, shake and add 5 ml of the ferric alum indicator solution and a few millilitres of the dilute nitric acid. Titrate the excess silver nitrate with the standard potassium thiocyanate solution until permanent light brown colour appears.

A.3 Calculation

A.3.1 Sodium chloride, percent by weight = $\frac{5.85(V_1N_1 - V_2N_2)}{W} \times 100$

where

V_1 = volume in ml of the standard silver nitrate solution added,

N_1 = normality of the standard silver nitrate,

V_2 = volume in ml of the standard potassium thiocyanate solution used,

N_2 = normality of the standard potassium thiocyanate, and

W = weight in g of the material taken for the test.

Annex B
(normative)

Recording of vacuum of the cans

The vacuum in the can may be determined with an electric recording type machine or a vacuum gauge of the piercing type without opening the can.

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