CD/K/692:2010
ICS 67.120

EAST AFRICAN STANDARD

Mutton and goat meat canned in brine — Specification

EAST AFRICAN COMMUNITY

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Foreword

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

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

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

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

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

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Introduction

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

IS 1743:1973(R2000), *Specification for Mutton and Goat Meat Canned in Brine*

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.

Contents

Mutton and goat meat canned in brine — Specification

1 Scope

This East African Standard specifies the requirements and methods of sampling and test for mutton and goat meat canned in brine.

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 — Carcases and cuts*

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

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

CD-K-673:2010, *Porcine (pig) meat — Carcases 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 1736, *Dried milk and dried milk products — Determination of fat content — Gravimetric method (Reference method)*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3 Definitions and presentation

3.1 Definitions

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

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

3.1.1
meat
the uncured sound and wholesome flesh of the goat or sheep, used as food.

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, 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 General

The meat used for canning shall be of good quality, obtained from the carcasses of only healthy animals, slaughtered in licensed premises, and subjected to proper ante-mortem and post-mortem inspection as prescribed in CD/K/700:2010.

4.2 Material and workmanship

4.2.1 Head meat, scrap meat, meat shanks, flanks and skirts and navel end of plates shall not be canned.

4.2.2 The set meat shall be freed from bones, blood clots, bruised material, all skin, hair, stringy and fibrous tissue, tendons and excessive fat. Viscera shall not be canned. Fasciae and depot fat shall be separated, as far as possible.

4.2.3 After setting, the material shall be cut into chunks or cuboids of 2.5 to 4 cm dimensions. The chunks shall be dry-cured by sprinkling with a mixture of sodium nitrate and sodium nitrite or ascorbic acid of such concentration as to ensure a desirable colour to the meat. The chunks may also be cured by any other approved process for any length of time, subject to an agreement between the purchaser and the vendor.

4.3 Freedom from artificial colouring matter and firming agents

The material shall be free from artificial colouring matter and firming agents.

4.4 Preservatives

Preservatives, other than sodium chloride, nitrite or nitrate of sodium and potassium, shall not, be used.

4.5 Tenderizing material

Tenderizing material, either natural or artificial, to soften meat before processing, shall not be used.

4.6 Flavour/odour and colour

The material shall be of a good flavour and shall have the characteristic flavour, typical of good canned meat. It shall be free from any objectionable odour or colour.

4.7 Hygienic requirements

4.7.1 Equipment and containers cleanliness

4.7.1.1 All the processing systems shall be thoroughly cleaned with chlorinated water (at least 50 ppm available chlorine) after every processing run and followed by washing with potable water to remove the residual chlorine in the system.

4.7.1.2 All the containers and lids should be cleaned thoroughly with sodium carbonate or sodium bicarbonate or any suitable detergent solution and sanitized with at least 50 ppm chlorine solution prior to their use. The residual chlorine may be removed by flushing the equipment with potable water before use.

4.7.1.3 Tables and workbenches used for cutting and packing mutton and meat should have stainless steel or aluminium alloy or marble tops. The table and workbenches top shall always be maintained in good conditions and cleaned thoroughly before and after use.

4.7.1.4 The work tables and benches used for cutting of mutton and goat meat should have on one side at least hard wood thick plank about 25 cm wide so as to prevent damage to the knives and other cutting equipment.

4.7.2 Water supply

4.7.2.1 Water required for mutton and meat processing shall be potable conforming to EAS 12 and free from contamination. The water should not be alkaline or very hard and should be free from organic matter. Presence of iron and sulphur compounds in it render it unsuitable for making brine. The water should be clear and free from odour and colour.

4.7.2.2 There shall be an adequate supply of potable water free from contamination. Running water under pressure shall be available in plenty to all rooms and areas in which meat is handled and equipment are washed.

4.7.2.3 The equipment shall be so installed and used that back suction of effluent into the potable water lines is precluded.

4.7.2.4 Hot and cold water in ample supply shall be provided for plant clean-up needs, where necessary.

4.7.2.5 The storage tanks for water should, unless completely sealed, be kept covered with tight-fitting lids, examined regularly and cleaned out at least once every six months. The date of last cleaning and next cleaning shall be prominently displayed on the storage tanks.

4.7.2.6 The water shall be periodically examined as desired by the licensing authority, chemically and bacteriologically. A record of such examination shall be maintained.

4.7.3 Employee hygiene — The persons handling the material shall observe strict hygienic conditions as laid down in EAS 39.

4.8 Requirements for the finished product

4.8.1 The contents of the can on opening shall not display disintegration. Excessive separation of muscle fibres resulting in a fluffy suspension shall be considered as disintegration.

4.8.2 The canned meat shall have characteristic colour and flavour.

4.8.3 The material shall be free from pieces of bristle, hair, skin and particles of bone. It shall be free from dirt, insect or rodent contamination or any other extraneous matter.

4.8.4 Poisonous and deleterious substances of any type including those of microbiological origin shall not be present.

4.8.5 Vacuum requirements — The can shall give a negative pressure of not less than 150 mm Hg of vacuum at 27 °C ± 2 °C under normal atmospheric pressure.

4.8.6 The average proportion of meat to brine shall be in the ratio of 60: 40. A tolerance of ±5 percent shall be permitted.

4.8.7 The material shall conform to the requirements prescribed in Tables 1.

5 Packing and marking

5.1 Packing

5.1.1 Packing in cans — The material shall be packed in suitable, open-top cans.

5.1.2 Packing in cases — The cans shall be packed in suitable cases. The number of cans in each case shall be subject to agreement between the purchaser and the vendor.

5.2 Marking

5.2.1 The labelling of the cans may be done either by printing or lithographing on the cans, or by attaching labels printed on paper, subject to agreement between the purchaser and the vendor.

5.2.2 The labels shall give the following information:

a) Name of the material along with brand name, if any;

b) Name and address of the manufacturer;

c) Net mass of the contents of the can;

d) Drained mass of the contents of the can;

e) Date of manufacture (this shall be embossed indelibly on one end of the can only, and the embossing shall be raised);

f) Batch or code number embossed indelibly on the can;

g) Warranty given by the manufacturer to be not less than 12 calendar months;

h) The nature of the preservative and of the canning medium used and its ingredients;

j) Declaration to the effect that no artificial colouring matter has been used; and

k) Licence No. and category given by the Licensing Authority.

m) Ingredients used in the descending order.

5.3 Certification mark

Each container may also be marked with a Certification Mark.

Table 1 — Microbiological, heavy metal and chemical requirements for mutton and goat meat canned in brine

Type of contaminant		Requirement	Method of test
(i)	Microbiological requirements	Shall be commercially sterile	E.5 of CD/K/520-1:2010
(ii)	Arsenic, mg/kg, max	1.0	EAS 41
(iii)	Copper, mg/kg, max	10	EAS 41
(iv)	Tin, mg/kg, max	250.0	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	50.0	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		Annex A
	(a) In the drained meat	1.0 t0 2.5	
	(b) In the brine, Min	1.5	
(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
*The limit of the combined preservatives shall not exceed 0.05 percent by mass.			

6 Sampling

The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in Annex H.

7 Tests

7.1 Tests shall be carried out as prescribed in the relevant appendices specified in 4.8.7 and Table 1.

7.2 Quality of reagents — Unless specified otherwise, pure chemicals and distilled water (see EAS 123) shall be employed in tests.

NOTE 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

Annex A
(normative)

Determination of sodium chloride

A.1 Reagents

A.1.1 Standard silver nitrate solution — 0.1 N.

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

A.1.3 Ferric alum indicator solution — saturated solution of ferric alum [FeNH4 (S04)2.12H20] to which a little nitric acid (6 N) has been added.

A.1.4 Standard ammonium thiocyanate solution — 0.1 N.

A.2 Procedure

A.2.1 Weigh about 5 g of the meat sample (cut to small pieces) or about 5 to 10 ml of the brine into a 250-ml conical flask. Pipette 25 ml of silver nitrate solution into the flask. (Use suitable sized sample, depending on expected sodium chloride content.) Add measured volume of silver nitrate solution, more than sufficient to precipitate all the chloride as silver chloride. Add 15 ml of concentrated nitric acid and boil gently on sand-bath for about 10 minutes under exhaust hood. Cool to room temperature. Add 50 ml water, 5 ml of ferric alum indicator and about 2 ml of nitrobenzene. Titrate with standard ammonium thiocyanate solution until permanent light-brown colour appears. One millimetre of 0.1 N silver nitrate solution is equivalent to 5.85 mg of sodium chloride.

A.3 Calculations

A.3.1 Sodium chloride, percent by mass = $\frac{V_1 - V_2 \times 5.85 \times 100}{M \times 1000}$

where

V_1 =volume in ml of silver nitrate solution,

V_2 =volume in ml of standard ammonium thiocyanate solution, and

M =mass in g of the sample taken.

Annex B
(normative)

Determination of arsenic content — Silver diethyldithocarbamate spectrophotometric method

B.1 Scope and field of application

This Annex specifies a method for the determination of the arsenic content of foods and dried products.

B.2 Basis and alternative method

The method described in this annex is based on the following standard:

ISO 17239, *Fruits, vegetables and derived products — Determination of arsenic content — Method using hydride generation atomic absorption spectrometry*

Where conditions permit, the following method of test may be used:

ISO 6634:1982, *Fruits, vegetables and derived products — Determination of arsenic content — Silver diethyldithiocarbamate spectrophotometric method*

B.3 Principle

Decomposition of a test portion, reduction of arsenic (V) to arsenic (III) with tin (II) chloride and transformation of the arsenic into arsine by the action of nascent hydrogen. Formation of a red coloured complex by the action of the arsine on silver diethyldithiocarbamate and spectrophotometric measurement at a wavelength of 520 nm.

B.4 Reagents

All reagents shall be of recognized analytical purity and shall, in particular, be free from arsenic (with the exception of the standard arsenic solution (B.4.9). The water used shall be distilled water or water of at least equivalent quality.

B.4.1 Sulphuric acid, ρ_{20} = 1.84 g/ml.

B.4.2 Nitric acid, ρ_{20} = 1.38 g/ml.

B.4.3 Perchloric acid, ρ_{20} = 1.67 g/ml.

B.4.4 Platinized zinc, prepared as follows

Place a portion of granulated zinc in a capsule, and pour in a volume of 0.05 g/l platinum chloride solution sufficient to cover the zinc. Leave in contact for 30 min, pour of the liquid, wash with water, leave the platinized zinc to drain on a square of blotting paper folded into several layers, and allow to dry. Store in a dry bottle.

The platinized zinc thus prepared shall be submitted to the preliminary test (see B.6.1.1).

NOTE Non-platinized zinc granules may be used if the product is shown to be suitable by the preliminary test.

B.4.5 Potassium hydroxide, in pellets.

B.4.6 Tin (II) chloride solution, prepared as follows: