



CD/K/622:2010
ICS 67.120.20

EAST AFRICAN STANDARD

Chicken canned in brine — Specification



EAST AFRICAN COMMUNITY

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

Among the various ways of preserving meat and meat products, canning in brine is also one of the processes. Considerable amount of chicken is being preserved by this process. It is expected that this standard will ensure quality product to the consumers.

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

IS 10697:1983(R2000), *Specification for Chicken Canned in Brine*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_q-e.jsp

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

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSv1.0/Standards>

European Union: http://ec.europa.eu/enterprise/sectors/pharmaceuticals/veterinary-use/maximum-residue-limits/index_en.htm

Assistance derived from these sources is hereby acknowledged.

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Chicken canned in brine — Specification

1 Scope

This East African Standard specifies the requirements and methods of sampling and test for chicken 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.

CD-K-617:2010, *Chicken essence — Specification*

CD-K-618:2010, *Ante-mortem and post-mortem inspection of poultry — Code of practice*

CD-K-619:2010, *Handling, processing, quality evaluation and storage of poultry — Code of practice*

CD-K-620:2010, *Poultry — Glossary of terms*

CD-K-622:2010, *Chicken canned in brine — Specification*

CD-K-623:2010, *Poultry — Canned chicken curry — Specification*

CD-K-629:2010, *Transport of small and medium sized seed-eating birds — Code of practice*

CD-K-630:2010, *Transport of poultry — Code of practice*

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

EAS 35, *Edible salt — Specification*

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

EAS 38, *Labelling of prepackaged foods — Specification*

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

EAS 103, *Schedule for permitted food additives*

EAS 123, *Distilled water — Specification*

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

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 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 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 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 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique*

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

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

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

3 Definitions

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

3.1

Broiler or Fryer

A broiler or fryer is a young meat-type chicken (usually 6 to 8 weeks of age), of either sex, that is, tender-meated with soft, pliable, smooth-textured skin and flexible breastbone cartilage.

3.2

Roaster

A roaster is a young chicken (usually 12 to 22 weeks of age), of either sex, that is, tender-meated with soft, pliable, smooth-textured skin and breastbone cartilage that may be somewhat less flexible than that of a broiler or fryer.

3.3

Stag

A stag is a male chicken (usually 22 to 44 weeks of age) with coarse skin, somewhat toughened and darkened flesh, and considerable hardening of the breastbone cartilage. Stag show a condition of fleshing and a degree of maturity intermediate between that of rooster and a cock.

3.4

Stewing Chicken or Fowl

A stewing chicken or fowl is a mature chicken (usually more than 44 weeks of age) with meat less tender than that of a roaster, and non-flexible breastbone tip.

3.5

Cock or Rooster

A cock or rooster is a mature male chicken (usually over 44 weeks of age) with coarse skin, toughened and darkened meat, and hardened breastbone tip.

4 Requirements

4.1 Requirements for live chicken — The material shall be the carcasses derived from the live chickens which shall be healthy and well-nourished. The birds tendered shall have their breastbones

well-covered with flesh. The eyes of the birds shall be bright, nostrils free from discharge, combs and wattles firm and bright in colour, feathers glossy, the movements active and showing no evidence of diarrhoea or any other diseases.

4.2 The poultry shall be subjected to ante-mortem and post-mortem inspection in accordance with CD-K-618:2010.

4.3 Requirements for dressed chickens

4.3.1 Dressed chicken shall be properly bled and dressed carcasses of live chicken slaughtered in licenced premises and subjected to veterinary inspection.

4.3.2 The chicken shall be suitably scalded (see CD-K-619:2010) and all pinfeathers and body hair removed by picking or singeing. The chicken shall be well-dressed, feet shall be well-cleaned and vents shall be emptied.

4.3.3 The carcass shall be eviscerated; head, feet and oil glands removed; and shall be properly cleaned and washed. The carcass shall then be suitably chilled.

4.3.4 The poultry shall be handled and processed according to the provision of CD-K-619:2010.

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

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

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

4.3.8 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.

4.4 Hygienic requirements

4.4.1 Cleanliness of equipment and containers

4.4.1.1 All the processing systems shall be thoroughly cleaned with chlorinated water (with 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.

4.4.1.2 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.

4.4.1.3 Tables and workbenches used for cutting and packing chicken should have stainless steel or aluminium alloy or marble tops. The table and workbench tops shall always be maintained in good condition and cleaned thoroughly before and after use.

4.4.1.4 The work tables and benches used for cutting of chicken should have at least, on one side, hardwood thick plank about 25 cm wide, so as to prevent damage to the knives and other cutting equipment.

4.4.2 Water supply

4.4.2.1 Water required for chicken 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 sulfur compounds in it render it unsuitable for making brine. The water should be

clear and free from odour and colour. Running water under pressure shall be available in plenty to all rooms and areas in which meat is handled and equipment are washed.

4.4.2.2 There shall be an adequate supply of potable water free from contamination.

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

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

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

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

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

4.5 Requirement for the finished product

4.5.1 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.

4.5.2 The canned meat shall have characteristic colour and flavour.

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

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

4.5.5 Vacuum requirements — The can shall give a negative pressure of not less than 250 mm Hg vacuum at 27 ± 2 °C under normal atmospheric pressure.

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

4.5.7 The material shall conform to the requirements prescribed in Tables 1 and 2.

Table 1 — Requirements for chicken canned in brine

	Characteristic	Requirement	Method of test
(i)	Sodium chloride in brine, % (w/v), max		Annex A
	a) In drained meat	1.0	
	b) In brine	1.5	
(ii)	Nitrate (as sodium nitrite) in drained meat, % my mass, Max	0.05 ^a	ISO 3091
(iii)	Nitrite as sodium nitrite in drained meat, % my mass, Max	0.02 ^a	ISO 2818
(iv)	Total fat, % by mass, Max	1.5	ISO 1736/1737
(v)	Free fat, % by mass, Max	0.5	ISO 1736/1737
NOTE Requirements for items (iv) and (v) are calculated on the total contents of a can.			
^a The limit of the combined preservatives shall not exceed 0.05 % by mass.			

Table 2 — Metallic and microbiological requirements for chicken canned in brine

Type of contaminant		Requirement	Method of test
(i)	Arsenic, mg/kg, max	1.0	EAS 41
(ii)	Lead, mg/kg, max	0.3	EAS 41
(iii)	Copper, mg/kg, max	10	EAS 41
(iv)	Zinc, mg/kg, max	50.0	EAS 41
(v)	Tin, mg/kg, max	250.0	EAS 41
(vi)	Cadmium, mg/kg, max	0.3	EAS 41
(vii)	Microbiological requirements	Shall be commercially sterile	See J.5.1; CD/K/551:2010
NOTE Requirements for items (i) to (v) are calculated an total contents of a can			

5 Packing and marking

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

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

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 the agreement between the purchaser and the vendor.

5.2.2 The labels shall give the following information, in addition to any other information required by EAS 38:

- 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 the 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 number given by the Health Authorities.

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

6 Sampling

Representative samples of the material for testing conformity to this standard shall be drawn according to the method prescribed in CD-K-692:2010.

7 Tests

7.1 Tests shall be carried out as prescribed in the relevant appendices specified in col4 and 5 of Table 1 and col4 of Table 2.

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.

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Annex A
(normative)

Determination of sodium chloride

A.1 Reagents

A.1.1 Standard Silver Solution — 0.1 N, standardized against 0.1 N sodium chloride solution.

A.1.2 Dilute Nitric Acid — 1:4.

A.1.3 Ferric ammonium indicator solution — A saturated solution of ferric alum $[\text{Fe}(\text{NH}_4)(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}]$.

A.1.4 Standard Potassium Thiocyanate Solution — 0.1N

A.2 Procedure

A.2.1 Wash the emptied can thoroughly with water and wash the residue on the sieve at least thrice with cold water. Collect the drained liquid and all the washings together in a 1 000 ml graduated flask and make up the volume. Centrifuge the made-up liquid for at least 5 min at 1 000 rev/min.

A.2.2 Take a suitable aliquot of a clear supernatant solution, add a known volume of the standard silver nitrate solution in slight excess and then add 20 ml of dilute nitric acid. Boil gently on a hotplate or a sand-bath until all solids except silver chloride dissolve (usually 15 min). Cool, add 50 ml of water and 5ml of the ferric alum indicator solution and titrate with the standard ammonium thiocyanate solution until permanent light brown colour appears.

A.3 Calculation

A.3.1 Sodium chloride in the brine, per cent by weight

$$= 5.85 \frac{(V_1 N_1 - V_2 N_2)}{W}$$

where,

V_1 = volume of the standard silver nitrate solution;

V_2 = volume of the standard potassium thiocyanate;

N_1 = normality of the standard silver nitrate solution;

N_2 = normality of the standard potassium thiocyanate; and

W = weight, in g, of the dried product taken for the test.

NOTE The total weight of brine is obtained by finding the difference between the net weight and the drained weight of the contents of the can.

Annex B
(normative)

Determination of acidity

B.1 Reagents

B.1.1 Standard Sodium Hydroxide Solution — 0.1 N.

B.1.2 Phenolphthalein Indicator Solution — Prepared by dissolving 0.1 g in 100 ml of rectified spirit.

B.2 Procedure

B.2.1 Weigh accurately about 5 g of the egg material and blend it with 25 ml of distilled water in a waring blender to ensure uniform suspension. Transfer it into an Erlenmeyer flask. Rinse the bowl of the blender at least thrice with distilled water and add to the suspension. Add one or two drops of phenolphthalein indicator solution and titrate with the standard sodium hydroxide solution. Note the volume of sodium hydroxide solution used.

B.3 Calculation

$$\text{Acidity, as percent acetic acid} = \frac{0.006 \times V}{W} \times 100$$

where

V = Volume of 0.1 N standard sodium hydroxide solution, and

W = Weight in g of the material.

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