



CD/K/612:2010
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EAST AFRICAN STANDARD

Canned egg curry — 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

The demand of canned egg curry is on the increase. Technological details pertaining to its manufacture have been worked out with a view to producing a product which can replace more costlier sheep/goat canned meat curry. This standard is being formulated to ensure the production of canned egg curry of a quality that is acceptable to the consumers and feasible for manufacture.

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

Regulations Governing the Voluntary Grading of Shell Eggs, 7 CFR Part 56, Effective March 30, 2008

United States Standards, Grades, and Weight Classes for Shell Eggs, AMS 56, Effective July 20, 2000

IS 12543:1988(R2000), *Meat and Meat Products — Poultry Products — Canned Egg Curry — Specification*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_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>

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.

Contents

1	Scope	1
2	Normative references	1
3	Definitions.....	2
4	Requirements	2
4.1	Hygienic Requirements.....	2
4.2	Raw material.....	2
4.3	Preparation.....	2
4.4	Processing.....	3
4.5	Artificial colouring and firming matter	3
4.6	Requirements of the finished products	3
5	Packing and marking	3
5.1	Packing.....	3
5.2	Marking.....	4
6	Sampling	4
7	Tests.....	4
	Annex A (normative) Determination of sodium chloride	6
	Annex B (normative) Determination of acidity in brine	7

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Canned egg curry — Specification

1 Scope

This East African Standard specifies the requirements and the methods of sampling and test for canned egg curry.

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.

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

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

CD-K-694:2010, *Curried and canned mutton and goat meat — Specification*

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

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

CD/K/612:2010

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

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

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

canned egg curry

a product prepared under hygienic conditions from hard boiled, sound and wholesome hen's eggs and mixed with fried spice mixture in form of gravy

4 Requirements

4.1 Hygienic Requirements

The factory, processing and employee hygiene shall be as per EAS 39.

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

4.2 Raw material

4.2.1 Eggs

Only sound, wholesome hen's eggs of average weight shall be used for the production of canned egg curry.

4.2.2 Fat

Only pure, wholesome edible vegetable fat/oil conforming to the relevant East African Standard shall be used for the cooking of canned egg curry.

4.2.3 Salt

Salt used shall conform to EAS 35.

4.2.4 Other ingredients

Spices and all other ingredients used shall be clean, sound, wholesome, fit for human consumption and shall conform to relevant East African Standard.

4.3 Preparation

During preparation of canned egg curry the precautions given in 4.3.1 to 4.3.6 shall be strictly followed.

4.3.1 Eggs shall be hard boiled in a suitable vessel. Care shall be taken to avoid bursting of eggs during boiling.

4.3.2 After boiling, eggs shall be cooled and peeled off carefully. There shall be no piece of egg shell or inner shell membrane adhering to the eggs.

4.3.3 After peeling, eggs shall be fried in edible vegetable fat/oil to make their colour light golden brown.

4.3.4 The gravy shall be prepared by mixing and frying spices in suitable proportion and then adding the required quantity of water to it.

4.3.5 The eggs and gravy shall be mixed in suitable proportions and shall be filled 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 to the material during processing or subsequent storage and transport.

4.3.6 After filling, the cans shall be closed by conventional methods of exhausting and double seaming.

4.4 Processing

The filled cans shall be processed at such a temperature and for such a length of time as to ensure thorough cooking and adequate sterilization of the finished product without burning, scorching and over-cooking.

4.5 Artificial colouring and firming matter

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

4.6 Requirements of the finished products

4.6.1 The contents of can on opening shall not display any disintegration of eggs. Rupture of white of eggs and releases of yolk in the gravy shall be treated as disintegration.

4.6.2 The curry shall be of characteristic taste and flavour.

4.6.3 The material shall be free from pieces of egg shell, feathers, hair, dirt, insects or any other extraneous matter.

4.6.4 Vacuum requirements

The cans shall give a negative pressure of not less than 150 mm of mercury at 27 ± 2 °C under normal atmospheric conditions. The head space shall not be less than 15 mm.

4.6.5 The average proportion of egg to gravy shall be in the ratio of 55: 45. A tolerance ± 5 percent is permitted and shall be tested as per CD-K-694:2010.

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

5 Packing and marking

5.1 Packing

5.1.1 Packing in cans

The material shall be packed in suitable open top sanitary cans.

CD/K/612:2010

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 packer.

5.2 Marking

The labelling of the cans may be done either by printing or lithographing on the cans themselves or by attaching labels printed on paper subject to agreement between the purchaser and the packer and shall bear the following information:

- a) Name of the material along with the brand, if any;
- b) Name and address of the packer;
- c) Net mass of the contents of the cans;
- d) Drained mass of the contents of the cans;
- 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 cans;
- g) Warranty given by the packer to be not less than 12 calendar months;
- h) The ingredients used in descending order of composition;
- j) Declaration to the effect that no artificial colouring matter has been added;
- k) Licence number and category; and
- m) Any other requirement as given OIML R87, *Quantity of product in prepackages*.

5.2.1 Standard Marking

Each container may also be marked with a Certification Mark.

6 Sampling

Representative samples of the material shall be drawn according to the method prescribed in Annex H of CD-K-692:2010.

7 Tests

7.1 Tests shall be carried out as per 4.6.1 to 4.6.6.

7.2 Quality of reagents

Unless specified otherwise, pure chemicals and distilled water (see EAS 123) shall be employed for tests.

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

Table 1 — Requirements for canned egg curry

Type of contaminant		Requirement	Method of test
(i)	Microbiological requirements	Shall be commercially sterile	See J.5.1; CD/K/551:2010
(ii)	Sodium chloride in brine, % (w/v), max	1.0 to 2.5	Annex A
(iii)	Fat of gravy, % (w/v)	7.0	ISO 1736/1737
(iv)	Arsenic, mg/kg, max	1.0	EAS 41
(v)	Copper, mg/kg, max	20	EAS 41
(vi)	Tin, mg/kg, max	250.0	EAS 41
(vii)	Mercury, mg/kg, max	0.5	EAS 41
(viii)	Lead, mg/kg, max	0.3	EAS 41
(ix)	Cadmium, mg/kg, max	0.3	EAS 41
(x)	Zinc, mg/kg, max	50.0	EAS 41

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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 in brine

B.1 Reagents

B.1.1 Standard sodium hydroxide solution

0.1N.

B.1.2 Phenolphthalein indicator solution

Dissolve one gram of phenolphthalein in 100 ml of 95 percent (w/v) alcohol.

B.2 Procedure

B.2.1 Take a suitable aliquot of the brine solution (see A.2.1), add about 200 ml of water and titrate against the standard sodium hydroxide solution using phenolphthalein indicator solution. Calculate the percentage acidity of the brine in terms of citric acid from the relationship: 1ml of 0.1 N sodium hydroxide solution is equivalent to 0.0064 g of citric acid (anhydrous).

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