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EAST AFRICAN STANDARD

Pickled quail eggs — 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

Pickles occupy an important place among processed foods. With the increasing popularity of quail (*Coturnix coturnix japonica*), there is a good scope for the utilization of small and tinted quail eggs in the form of pickle. Technological details pertaining to the manufacture of pickled quail eggs have been worked out with a view to offer such nutritious, ready-to-eat product to the consumers. This standard is presently being formulated to ensure the production of pickled quail eggs of a quality that is acceptable to the consumer 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 12561:1988(R2000), *Poultry Products — Pickled Quail Eggs — Specification*

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

USDA Foreign Agricultural Service website: <http://www.mrlidatabase.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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Pickled quail eggs — Specification

1 Scope

This East African Standard specifies the requirements and the methods of sampling and test for pickled quail eggs.

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-617:2010, *Chicken essence — 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*

ISO 6579:2002, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp.*

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ISO 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count 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 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 definition shall apply:

pickled quail eggs

the product prepared under hygienic conditions from hard-boiled, sound and wholesome quail eggs using vinegar, acetic acid, common salt, edible vegetable oil and spices

4 Types

Pickled quail eggs may be of the following two types:

- Type 1 Vinegar-based egg pickle
- Type 2 Oil-based egg pickle

5 Requirements

5.1 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 conditions and having adequate and safe water supply (see EAS 39), and duly approved and licenced by the public health authorities concerned. All workers shall use clean and washed clothings. Necessary precautions shall be taken to prevent incidental contamination of the product from soiled equipment or from personnel suffering from injuries.

5.1.1 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, hoses, 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 solution or other suitable chlorine solution.

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

5.2 Raw materials

5.2.1 Eggs

Only sound, wholesome quail eggs shall be used for the production of egg pickle.

5.2.2 Salt — Salt used shall conform to EAS 35.

5.2.3 Vinegar — Distilled, white food grade vinegar shall be used.

5.2.4 Acetic acid — Shall be food grade quality.

5.2.5 Vegetable oil

Only pure, wholesome, edible vegetable oil conforming to relevant East African Standard shall be used for frying of spices and condiments.

5.2.6 Other ingredients

Spices and condiments shall be clean, sound, fit for human consumption and conforming to relevant East African Standard.

5.3 Preparation

5.3.1 Type 1 Vinegar-based pickled quail eggs

For preparation of vinegar-based pickled quail eggs, the steps given in 5.3.1.1 to 5.3.1.5 shall be followed.

5.3.1.1 Fresh quail eggs shall be stored at ambient temperature for at least 24 hours prior to hard-cooking in water containing 2 percent (w/v) common salt, for about 10 min at simmering temperature.

5.3.1.2 After boiling, the eggs shall be cooled immediately in running tap water and peeled off manually. There shall be no pieces of egg shell or shell membrane adhering over the peeled eggs. Peeled eggs showing torn or rugged-looking albumen surface shall not be used for pickling.

5.3.1.3 Pickling solution shall consist of vinegar and water (50: 50 v/v), 8 percent (w/v) common salt, and 2 percent (w/v) each spice mixture, onion (fresh and chopped), garlic and ginger. The solution shall be boiled for 10 minutes and then filtered using clean muslin cloth.

5.3.1.4 Pickling solution shall be heated to 70 ± 2 °C and poured onto the peeled eggs. The average proportion of peeled eggs to pickle solution shall be in the ratio of 1: 1.25 (w/v).

5.3.1.5 The pickled eggs shall be aged for 48 hours at ambient temperature in pre-sterilized glass container.

5.3.2 Type 2 Oil-based pickled quail eggs

For preparation of oil-based pickled quail eggs, the steps given in 5.3.2.1 to 5.3.2.3 shall be followed.

5.3.2.1 For preparation of oil-based pickled quail eggs, the pickle gravy shall be prepared by frying spices, condiments and common salt in edible vegetable oil in a suitable proportion.

5.3.2.2 Peeled eggs shall be fried in edible vegetable fat/oil to make their colour golden brown. Peeled eggs, gravy and acetic acid at the rate of 2 percent to the weight of peeled eggs shall be mixed.

5.3.2.3 The proportion of eggs to gravy shall be in the ratio of 70: 30 with tolerance of ± 1 % when tested according to the method prescribed in Annex B.

5.3.2.4 Pickled eggs shall be aged for 48 hours in pre-sterilized glass containers.

5.4 Finished product

5.4.1 The egg pickles shall possess a good uniform colour and appearance. It shall possess a good texture and normal characteristic taste and flavour typical of the type.

5.4.2 The product shall be free from pieces of egg shell, feathers, hairs, dirt, insects or any other extraneous matter.

5.4.3 The product shall not be unduly hard or rubbery and shall be devoid of any objectionable taste, smell or odour.

5.4.4 The egg pickles shall also conform to the requirements prescribed in Table 1.

Table 1 — Requirements for pickled quail eggs

Type of contaminant		Requirements		Method of test
		Type 1	Type 2	
(1)	(2)	(3)	(4)	(5)
(i)	Acidity as percent acetic acid, Min	0.8	0.6	Annex C
(ii)	Sodium chloride in brine, % (w/v), max	3.0	3.0	Annex B
(iii)	pH of the pickling medium	3.2	3.6	CD-K-617:2010
(iv)	Total plate count, per gram, Max	1000	1000	ISO 4833
(v)	Coliform count, per gram	Nil	Nil	ISO 4833
(vi)	<i>Salmonella</i> , per 0.1 g	Nil	Nil	ISO 6579
(vii)	<i>Clostridia</i> per 0.1 g	Nil	Nil	ISO 7937
(viii)	Arsenic, mg/kg, max	1.0	1.0	EAS 41
(ix)	Copper, mg/kg, max	20	20	EAS 41
(x)	Tin, mg/kg, max	250.0	250.0	EAS 41
(xi)	Mercury, mg/kg, max	0.5	0.5	EAS 41
(xii)	Lead, mg/kg, max	0.3	0.3	EAS 41
(xiii)	Cadmium, mg/kg, max	0.3	0.3	EAS 41
(xiv)	Zinc, mg/kg, max	50.0	50.0	EAS 41

6 Packing and marking

6.1 Packing

6.1.1 Packing in flexible pouches

After the aging period, the vinegar-pickled eggs shall be taken out from the glass containers and packed in high density polyethylene pouches of 300 gauge, without the pickle solution. Oil-based pickled eggs shall be packed in high density polyethylene (300 G) pouches along with pickle gravy.

6.1.2 Packing in cases

The HDPE pouches shall be packed in suitable cases sufficiently strong to withstand rough handling during transit. The number of pouches in each case shall be subject to agreement between the purchaser and the packer.

6.2 Marking

6.2.1 Each pouch shall be marked with the following particulars:

- a) Name of the material along with brand name, if any;
- b) Name and address of the manufacturer;
- c) Net mass of the contents;

- d) Date of manufacture;
- e) Batch or code number;
- f) The ingredients used in descending order;
- g) Warranty given by the manufacturer to be not less than 6 calendar months in case of vinegar-pickled quail eggs and not less than 4 calendar months in case of oil-based quail egg pickle stored at an ambient temperature below 37 °C and relative humidity 85 percent;
- h) Manufacturing licence number; and
- j) Any other requirement as given OIML R87, *Quantity of product in prepackages*.

7 Sampling

- 7.1** Sampling of pickled quail eggs shall be done according to the method prescribed in Annex D.

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Annex A
(normative)

Determination of the proportion of egg to gravy

Procedure

Note down the weight of the pouch containing eggs (X). Open the pouch and drain over 16 mm sieve. Wash the empty pouch with hot water and pour it over the eggs. Dry and weigh the empty pouch (Y) Pour hot water over the eggs three or four times to remove all adhering condiments and oil. Ensure that the eggs are free from all adhering matter; if necessary, repeat washing with hot water. Allow the eggs to be completely drained of water. Place the eggs in the empty pouch and weigh (Z). The ratio of Z-Y: X-Z shall be 70: 30.

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Annex B
(normative)

Determination of sodium chloride

B.1 Reagents

B.1.1 Standard silver solution — 0.1 N, standardized against 0.1 N sodium chloride solution.

B.1.2 Dilute nitric acid — 1:4.

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

B.1.4 Standard potassium thiocyanate solution — 0.1N

B.2 Procedure

B.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.

B.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.

B.3 Calculation

B.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 C
(normative)

Determination of acidity

C.1 Reagents

C.1.1 Standard sodium hydroxide solution — 0.1 N.

C.1.2 Phenolphthalein indicator solution — Prepared by dissolving 0.1 g in 100 ml of rectified spirit.

C.2 Procedure

C.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.

C.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.

Annex D
(normative)

Sampling of pickled quail eggs

D.1 General requirements

D.1.1 Sampling shall be done by a person agreed to between the purchaser and the vendor and in the presence of the purchaser (or his representative) and the vendor (or his representative).

D.1.2 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

D.2 Scale of sampling

D.2.1 Lot

In any consignment, all the cases containing pouches of the same size and from the same batch of manufacture shall be grouped together to constitute a lot.

D.2.1.1 Samples shall be tested from each lot for ascertaining conformity of the material to the requirements of this standard.

D.2.2 The number of pouches to be selected from the lot shall depend on the size of the lot and shall be as given in Table 2. In addition to this, 5 pouches shall be selected for testing for microbiological requirements.

Table 2 — Number of Pouches to be Selected for Sampling

Lot Size (1)	Sample Size (2)
Up to 200	4
201 to 500	5
501 to 800	6
801 to 1300	7
1 301 to 3 200	8
3 201 to 8 000	9
8 001 and above	10

D.2.3 These pouches shall be selected at random from a number of packing cases as agreed to between the purchaser and the vendor (or manufacture). Subject to such an agreement, the minimum number of packing cases to be opened may be in accordance with Table 3. The pouches required as in D.2.2 shall then be drawn at random equally from these packing cases.

Table 3 — Opening of packing cases

Number of packing cases in the lot (1)	Number of packing cases to be opened (2)
Up to 10	2
11 to 25	4
26 to 64	5
65 to 100	6
101 to 150	7
151 to 225	8
226 to 300	9
301 to 500	10

D.2.4 In order to ensure the randomness, a random table shall be used. If such a table is not available, the following procedure shall be adopted.

Starting from any pouch, in a lot, count them as 1, 2, 3 upto r in a systematic manner, where r is equal to the integral part of N/n , N being the total number of pouches in the lot, and n the number of pouches to be selected. Every r th pouch thus counted shall be separated until the requisite number of pouches is obtained from the lot to give samples for test.

D.3 Criteria for conformity

A lot shall be considered as conforming to the requirements of this standard if all the samples tested satisfy the corresponding requirements for the characteristics.

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