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EAST AFRICAN STANDARD

Mussels canned in oil — 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

Mussels, an important soft shellfish, are considered a delicacy in a number of countries and, therefore, offer a considerable export potential. In order to ensure quality and wholesomeness of the finished product various physical, chemical, microbiological and hygienic requirements have been prescribed in this standard.

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

IS 10760:1983(R2005), *Specification for Mussels Canned in Oil*

CAC/RCP 52:2003(Rev. 4:2008), *Code of practice for fish and fishery products*

IS 4303-1:1975, *Code of hygienic conditions for fish industry — Part 1: Pre-processing stage*

IS 4303-2:1975, *Code of hygienic conditions for fish industry — Part 2: Canning stage*

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.

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

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Mussels canned in oil — Specification

1 Scope

This East African Standard specifies the requirements and the methods of sampling and test for mussels canned in oil.

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/GL 21, *Principles for the establishment and application of microbiological criteria for foods*

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

CAC/GL 30, *Principles and guidelines for the conduct of microbiological risk assessment*

CAC/GL 31, *Guidelines for the sensory evaluation of fish and shellfish in laboratories*

CD/K/572:2010, *Fish and fisheries products — Methods of sampling*

CAC/RCP 52[CD/K/521:2010], *Code of practice for fish and fishery products*

EAS 35, *Edible salt — Specification*

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

EAS 38, *Labelling of prepackaged foods — Specification*

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

ISO 6887-1, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 1: General rules for the preparation of the initial suspension and decimal dilutions*

ISO 6887-3, *Microbiology of food and animal feeding stuffs — Preparation of test samples, initial suspension and decimal dilutions for microbiological examination — Part 3: Specific rules for the preparation of fish and fishery products*

ISO 6888-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*

ISO 6888-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium*

ISO 6888-3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

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

ISO 13720, *Meat and meat products — Enumeration of Pseudomonas spp.*

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

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

ISO 21567, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Shigella spp.*

ISO/TS 21872-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 1: Detection of Vibrio parahaemolyticus and Vibrio cholerae*

ISO/TS 21872-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of potentially enteropathogenic Vibrio spp. — Part 2: Detection of species other than Vibrio parahaemolyticus and Vibrio cholerae*

ISO 11290-1, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 1: Detection method*

ISO 11290-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of Listeria monocytogenes — Part 2: Enumeration method*

3 Requirements

3.1 Product definition

For the purpose of this standard the term 'mussels' shall apply to the following commercial species:

- | | | |
|----|----------------------|--------------|
| a) | <i>Perna indica</i> | Brown mussel |
| b) | <i>Perna viridis</i> | Green mussel |

3.2 Ingredients

3.2.1 Shell fish — The mussels shall be of sound quality and free from any evidence of spoilage and degradation.

3.2.2 Oil — Only refined, pure, clear and deodorized edible vegetable oil having characteristic colour shall be used for canning mussels. The oil shall be free from any foreign matter or mineral oil and objectionable flavour and odour. RBD Palm oil shall not be used.

3.2.3 Salt — Edible salt conforming to EAS 35 shall be used for canning.

3.3 Material and processing

3.3.1 The mussels shall be stored in clear sea water for 24 hours and then kept in clean potable water containing 5 mg/kg (ppm) of the chlorine for 2 hours. They shall be again cleaned and shall removed and flesh taken out.

3.3.2 The material shall have a good odour and flavour and retain a good colour characteristic of the species. The flesh shall be firm in texture and free from disintegration. The meat shall be free from pieces of shell, sand, byssus and other foreign material.

3.3.3 The mussels may be given a suitable brine treatment to ensure that the finished canned fish are firm in texture. Brine solutions shall be kept clean. The final saltiness of the pack shall be adjusted as to produce a palatable product.

3.4 Processing

Mussels get quickly spoiled after they are taken out of water, even though properly iced. It shall, therefore, immediately be cooked for a few minutes in direct steam in order to open the shell. The meat shall then be oil packed and sterilized in containers.

4 Essential composition and quality factors

4.1 Disintegrated units — The contents of the can on opening shall not display any appreciable disintegration and the oil shall be clear. Pieces from which portions have separated out would be treated as disintegrated units. The percentage of detached portions of fish, calculated on the basis of the drained mass shall not exceed 5 percent by mass based on the average of 5 cans.

4.2 The canned mussel shall be of pleasant flavour characteristic of well-canned mussel. It shall be free from scorched, bitter, foreign or other objectionable flavour. It shall have no colour other than the characteristic colour of well-preserved mussel.

4.3 It shall be free from any foreign material and from grittiness.

4.4 The material shall be free from any type of poisonous-or deleterious substances.

4.5 Vacuum — The can shall give a negative pressure when punctured. If round cans are used, the vacuum shall be not less than 100 mm of Hg.

4.6 Drained mass of the contents

The drained mass of the contents in each can shall be not less than 65 percent by mass of the water holding capacity of the can.

4.6.1 The drained liquid shall not contain more than 5 percent by volume of water.

NOTE The drained liquid shall be collected in a measuring cylinder and kept for separating the oil and water. The volumes of oil and water shall be measured and percentage of water determined.

5 Food additive

5.1 The product shall be free from artificial colouring matter and firming agents except common salt.

5.2 No additive other than common salt shall be used.

6 Hygienic requirements

6.1 The material shall be prepared, filled and processed under hygienic conditions and only in premises maintained in a thoroughly clean and hygienic manner complying with CAC/RCP 1, CAC/RCP 52 and duly approved or licensed by the authorities concerned for fish products. The water used for processing of fish shall conform to EAS 12.

6.2 The material shall also satisfy the limits for heavy metals and microbiological activity prescribed in Table 1.

Table 1 — Microbiological and heavy metal limits for mussels canned in oil

| Type of contaminant | | Requirement | Method of test |
|---------------------|--|-------------------------------|----------------|
| (i) | Microbiological requirements | Shall be commercially sterile | E.5 |
| (ii) | Vacuum of the can in mm, min | 100 | Annex A |
| (iii) | Head space of the can in mm | 5.0 to 7.5 | --- |
| (iv) | Drained weight of the contents of the can, as percentage by weight of the water capacity of the can, min | 64 | Annex B |
| (v) | Sodium chloride in brine, % (w/v), max | 3.5 | |
| (vi) | Acidity in brine as citric acid (anhydrous), % (w/v) | 0.06 to 0.20 | |
| (vii) | Arsenic, mg/kg, max | 1.0 | EAS 41 |
| (viii) | Copper, mg/kg, max | 10 | EAS 41 |
| (ix) | Tin, mg/kg, max | 250.0 | EAS 41 |
| (x) | Mercury, mg/kg, max | 0.5 | EAS 41 |
| (xi) | Lead, mg/kg, max | 0.3 | EAS 41 |
| (xii) | Cadmium, mg/kg, max | 0.3 | EAS 41 |
| (xiii) | Zinc, mg/kg, max | 50.0 | EAS 41 |
| (xiv) | Histamine content, mg/100 fish meat, max | 20.0 | Annex B |

7 Packing and marking

7.1 Packing

The material shall be packed in suitable containers and hermetically sealed. If the cans are lacquered the lacquer used shall be non-toxic and shall be of such quality that it does not impart any foreign taste and smell to the contents of the can and does not peel off during processing and storage of the product. The lacquer used shall not be soluble in oil or brine to any extent. The can shall be free from rust. The can shall be thoroughly cleaned before filling.

7.2 Marking

7.2.1 Each container shall be legibly and indelibly marked with the following information in addition to information required by EAS 38:

- Name of the material along with brand name, if any;
- Name and address of the manufacturer;
- Grade;
- Net mass of the contents of the can;
- Proportion of oil in the cans, if required by the purchaser;

- f) Nature of the canning medium used and ingredients;
- g) Licence number, date and authority, if any, under which the manufacturer has been permitted to can the product (optional for export);
- h) Batch or lot number and the date of manufacture;
- i) The words 'Best before (month and year to be indicated)'; and
- j) Any other requirement as given OIML R87, *Quantity of product in prepackages*.

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

8 Sampling, examination and analyses

8.1 Sampling

The method of drawing representative samples of the material for tests and the criteria for conformity shall be in accordance with the method prescribed in Annex A.

8.2 Sensory and physical examination

Samples taken for sensory and physical examination shall be assessed by persons trained in such examination and in accordance with the procedures set out in Sections 8.3 through 8.5, Annex A and CAC/GL 31.

8.3 Determination of net weight

Net contents of all sample units shall be determined by the following procedure:

- (i) Weigh the unopened container.
- (ii) Open the container and remove the contents.
- (iii) Weigh the empty container, (including the end) after removing excess liquid and adhering meat.
- (iv) Subtract the weight of the empty container from the weight of the unopened container. The resultant figure will be the net content.

8.4 Determination of drained weight

The drained weight of all sample units shall be determined by the following procedure:

- (i) Maintain the container at a temperature between 20 °C and 30 °C for a minimum of 12 hours prior to examination.
- (ii) Open and tilt the container to distribute the contents on a pre-weighed circular sieve which consists of wire mesh with square openings of 2.8 mm x 2.8 mm.
- (iii) Incline the sieve at an angle of approximately 17-20° and allow the fish to drain for two minutes, measured from the time the product is poured into the sieve.
- (iv) Weigh the sieve containing the drained fish.
- (v) The weight of drained fish is obtained by subtracting the weight of the sieve from the weight of the sieve and drained product.

8.5 Determination of washed drained weight (for packs with sauces)

