codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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Agenda Item 9 **CX/FFP 00/9**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS
Twenty-fourth Session
Ålesund, Norway, 5-9 June 2000

PROPOSED DRAFT STANDARD FOR MOLLUSCAN SHELLFISH
(Prepared by the Netherlands)

The 22nd Session of the Committee on Fish and Fishery Products agreed that a standard for molluscan shellfish should be developed by the Delegation of the Netherlands and this proposal for new work was approved by the 43rd Session of the Executive Committee (1996).

The 23rd Session of the Committee had a general discussion on the question and agreed that the standard should be focused on bivalve molluscs. Member countries were invited to provide their comments directly to the Delegation of the Netherlands, in order to facilitate the preparation of a proposed draft standard.

The Proposed Draft Standard for Molluscan Shellfish prepared by the Netherlands is attached for consideration by the Committee. Comments at Step 3 are not requested at this stage in view of time constraints.

PROPOSED DRAFT CODEX STANDARD FOR LIVE, QUICK FROZEN AND CANNED BIVALVE MOLLUSCS

1. SCOPE

This standard applies to live bivalve molluscs intended for direct consumption and quick frozen and canned bivalve molluscs. This standard does not apply to fresh or frozen scallop adductor muscle meat (i.e. without viscera and roe).
Traceablity is an important feature for bivalve molluscs and must be secured.

2. DESCRIPTION

2.1 Product Definition

Live bivalve molluscs are a product which is alive immediately prior to consumption. The product is presented including the shell. The product is not prepared, however packing medium, salt, water and/or edible oils and other ingredients may have been added.

Quick frozen bivalve molluscs are a product prepared from live bivalve molluscs which are quick frozen after a suitable preparation.

Canned bivalve molluscs are a product prepared from fresh, frozen, cooked, smoked or not smoked edible portions of bivalve molluscs to which salt, water and/or edible oils, other ingredients and packing medium may have been added.

2.2 Process Definition

Live bivalve molluscs shall be organisms which are harvested alive from an approved growing area and/or from an approved relaying area after a suitable relaying process or from an approved purification centre, raft, float or tank after suitable purification. The approval mentioned in this subsection must be given by the official agency having jurisdiction.

Frozen bivalve molluscs shall be derived from organisms which meet the requirements for live bivalve molluscs and the product shall, after any suitable preparation [deshelling], be subjected to a freezing process and shall comply with the conditions laid down hereafter. The freezing process shall be carried out in appropriate equipment in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18ºC or colder at the thermal centre after thermal stabilization. The product shall be kept deep frozen so as to maintain the quality during transportation, storage and distribution. Frozen bivalve molluscs shall be processed and packaged so as to minimize dehydration and oxidation.

Canned bivalve molluscs shall be derived from organisms which meet the requirements for live bivalve molluscs.
Canned bivalve molluscs are packed in hermetically sealed containers and shall have received a processing treatment sufficient to ensure commercial sterility.

The water used for steaming, cooking, deshelling and cooling shall be of potable quality or clean seawater.

2.3 PRESENTATION

Any presentation of the product shall be permitted provided that it:
meets all requirements of this standard; and
is adequately described on the label to avoid confusing or misleading the consumer.

The bivalve molluscs may be packed in count per unit of weight or per package.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Live Bivalve Molluscs

Bivalve molluscs intended for direct consumption or intended to be processed shall be alive imemediately prior to consumption or prior to the commencement of processing and of a quality fit for human consumption. Bivalve molluscs must respond adequatly to percussion and must contain a normal quantity of bodily fluids.

3.2 Glazing (for frozen bivalve molluscs)

If glazed, the water used for glazing or preparing glazing solutions shall be of potable quality or shall be clean sea-water. Potable water is fresh-water fit for human consumption. Standards of potability shall not be less than those contained in the latest edition of the WHO "International Guidelines for Drinking Water Quality". Clean sea-water is sea-water which meets the same microbiological standards as potable water and is free from objectionable substances.

3.3 Other Ingredients

The packing medium and all other ingredients used shall be of food grade quality and conform to all applicable Codex standards.

3.4 Final Product

Products shall meet the requirements of this standard when lots examined in accordance with Section 9 comply with the provisions set out in Section 8. Products shall be examined by the methods given in Section 7.

4. FOOD ADDITIVES

Only the use of the following additives is permitted.

Additive	Maximum level in the final product
Antioxidants	
Ascorbic acid	} limited by GMP
Ascorbate, sodium, calcium or potassium salts	} "
Citric acid	} "
sodium, calcium or potassium salts	} "
Sequestrant	
For canned bivalve molluscs:	
Calcium disodium EDTA	}75 mg/kg

5. HYGIENE AND HANDLING

5.1 The final product shall be free from any foreign material that poses a threat to human health.

5.2 Live bivalve molluscs intended for direct consumption should possess visual characteristics associated with freshness and viability, including shells free of dirt, an adequate response to percussion, and normal amounts of intravalvular liquid.

5.3 When tested by appropriate methods of sampling and examination prescribed by the Codex Alimentarius Commission (CAC), the following requirements shall be met:

[Live bivalve molluscs must not contain more than 300 faecal coliforms or more than 230 E.coli per 100 g of mollusc flesh and intravulvar liquid. Determination by the 5 tube, 3 dilution MPN testing method or any other method equivalent.]

[Live bivalve molluscs and products thereof must not contain Salmonella in 25 g flesh.]

Live bivalve mollusc shall be free from micro-organisms or substances originating from micro-organisms or virus in amounts which may present a hazard to health in accordance with standards established by the CAC.

(iv) [In the edible parts of bivalve molluscs (the whole part or any part edible seperately) the total Paralytic Shellfish Poison (PSP) content must not exceed 80 microgrammes per 100 g of mollusc flesh in accordance with the biological testing method in association if necessary with a chemical method for detection of Saxitoxin.]

(v) [Using the customary biological testing methods (on rats or mice) there must not be a positive result to the presence of Diarrhetic Shellfish Poison (DSP) in the edible parts (the whole part or any part edible seperately) of bivalve molluscs.]

(vi) [the content of Amnesic Shellfish Poisoning (ASP) in the edible parts of bivalve molluscs (the whole part or any part edible seperately must not exceed 20 microgrammes domoic acid per 100 g of mollusc flesh in accordance with the HPLC testing method.]

(vii) in the absence of routine virus testing procedures and the establishment of virological standards, health checks must be based on faecal bacteria counts.

(viii) The product must not contain any other substance in amounts which may present a hazard to health in accordance with standards established by the CAC.

5.4 It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the following Codes:

the appropriate sections of the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969, Rev. 3 (1997));

[the [draft] recommended International Code of Practice for Fish and Fishery Products];

the [draft revised] Recommended International Code of Practice for Canned Fish;

(iv) the Recommended International Code of Practice for the Processing and Handling of Quick Frozen Foods (CAC/RCP 8-1976);

the Draft International Code of Hygienic Practice for the Products of Aquaculture (under elaboration, 1994);

the Recommended International Code of Hygienic Practice for Low Acid and Acidified Low Acid Canned Foods (CAC/RCP 23-1979).

6. LABELLING

In addition to the provisions of the Codex General Standard for the Labelling of Prepackaged Foods (CODEX STAN 1-1985) the following specific provisions apply:

6.1 The Name of The Food

The name of the product as declared on the label shall be the name of the species of bivalve molluscs according to the law, custom or practice in the country in which the product is to be distributed.

6.1.1 There shall appear on the label, reference to the presentation provided for in Section 2.3-Presentation in close proximity to the name of the product in such descriptive terms that will adequately and fully describe the nature of the presentation of the product to avoid misleading or confusing the consumer.

6.1.2 In addition to the specified labelling designations above, the usual or common trade names of the variety may be added so long as it is not misleading to the consumer in the country in which the product will be distributed.

6.1.3 Products shall be designated as steamed,cooked, deshelled [heat shocked], frozen, canned as appropriate.

6.1.4. For live bivalve molluscs this product shall declare the date of minimum durability or a statement to this effect.

6.1.5 If the (frozen) product has been glazed with sea-water, a statement to this effect shall be made.

6.1.6 If appropriate : the term "quick frozen", shall also appear on the label, except that the term "frozen" may be applied in countries where this term is customarily used for describing the product processed in accordance with subsection 2.2 of this standard.

The label shall state that the product should be maintained under conditions that will maintain the quality during transportation, storage and distribution.

Identification of the establishment approved for the production of the product.

6.1.9 Identification of the growing area must be kept at the establishment.

6.2 **Net Contents (Frozen Glazed Products)**

Where the food has been glazed the declaration of net contents of the food shall be exclusive of the glaze.

6.3 **Storage Instructions**

For live bivalve molluscs, the label shall include terminology to indicate that the product shall be stored at temperatures which will not advesely affect their quality and viability.

For deshelled [heat shocked] bivalve molluscs: the label shall include terms to indicate that the product shall be stored at a temperature of 2-7 ºC.

For frozen bivalve molluscs: the label shall include terms to indicate that the product shall be stored at a temperature of -18 ºC or colder.

6.4 **Labelling of Non-Retail Containers (for bulk transport of live bivalve molluscs)**

In the case of live and raw shucked molluscs, information specified above shall be given either on the container or in accompanying documents, except that the name of the food, lot identification, harvesting location, date of harvest and/or date of processing and the name and address and autorisation or registration number of packer or manufacturer as well as storage instructions shall always appear on the container.

However, lot identification, and the name and address may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents in which this information is given.

7. SAMPLING, EXAMINATION AND ANALYSES

7.1 Sampling

(i) Sampling of lots for examination of the product shall be in accordance with the FAO/WHO Codex Alimentarius Sampling Plans for Prepackaged Foods (AQL - 6.5) CAC/RM 42-1969.

(ii) Sampling of lots for examination of net weight shall be carried out in accordance with an appropriate sampling plan meeting the criteria established by the CAC.

7.2 Sensory and Physical Examination

Samples taken for sensory and physical examination shall be assessed by persons trained in such examination and in accordance with procedures elaborated in Sections 7.3 through 7.6, [*and maybe in future: Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories" (CAC/GL 31-1999)*]

7.3 Determination of Net Weight and Drained Weight

The net weight and drained weight of all sample units shall be determined by the procedures described or mentioned in sections 7.3.1., 7.3.2, 7.3.3 and 7.3.4..

7.3.1 Determination of Net Weight

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

7.3.2 Determination of Net Weight of Frozen Products not Covered by Glaze

The net weight (exclusive of packaging material) of each sample unit representing a lot shall be determined in the frozen state.

7.3.3 Determination of Net Weight of Products Covered by Glaze

AOAC official method 963.18, Net Contents of Frozen Seafoods

Determination of Drained Weight

In the case of canned bivalve molluscs, maintain the container at a temperature between 20 ºC anbd 30 ºC for a minimum period of 12 hours prior to examination;
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;
Inlcine the sieve at an angle of approximately 17-20 ºC and allow the bivalve molluscs to drain for two minutes, measured from the time the product is poured into the sieve;
Weigh the sieve containing the drained bivalve molluscs;
The weight of drained bivalve molluscs is obtained by subtracting the weight of the sieve and drained product.

7.4 Determination of Count

When declared on the label, the count of bivalve molluscs shall be determined by counting the numbers of bivalve molluscs in the container or a representative sample thereof and dividing the count of bivalve molluscs by the actual de-glazed weight to determine the count per unit weight.

7.5 Procedures for Thawing

The sample unit is thawed by enclosing it in a film type bag and immersing in water at room temperature (not greater than 35 ºC). The complete thawing of the product is determined by gently squeezing the bag occasionally so as not to damage the texture of the bivalve molluscs, until no hard core or ice crystals are left.

7.6 Cooking Methods

The following procedures are based on heating the product to an internal temperature of 65-70 ºC. The product must not be overcooked. Cooking times vary according to the size of the product and the temperature used. The exact times and conditions of cooking for the product should be determined by prior experimentation.

Baking Procedure: Wrap the product in aluminum foil and place it evenly on a flat cookie sheet or shallow flat pan.

Steaming Procedure: Wrap the product in aluminum foil and place it on a wire rack suspended over boiling water in a covered container.

Boil-in-Bag Procedure: Place the product into a boilable film-type pouch and seal. Immerse the pouch into boiling water and cook.

Microwave Procedure: Enclose the product in a container suitable for microwave cooking. If plastic bags are used, check to ensure that no odour is imparted from the plastic bags. Cook according to equipment instructions.

MPN Method For Analyses of E.Coli/Faecal Coliforms

(to be elaborated)

7.8 **Determination of Biotoxins**

(to be elaborated)

8. DEFINITION OF DEFECTIVES

The sample unit shall be considered as defective when it exhibits any of the properties defined below.

8.1 **Deep Dehydration (Frozen Products)**

Greater than 10% of the weight of the bivalve molluscs in the sample unit or greater than 10% of the surface area of the block exhibits excessive loss of moisture clearly shown as white or yellow abnormality on the surface which masks the colour of the flesh and penetrates below the surface, and cannot be easily removed by scraping with a knife or other sharp instrument without unduly affecting the appearance of the bivalve molluscs.

8.2 **Foreign Matter**

The presence in the sample unit of any matter which has not been derived from bivalve molluscs, does not pose a threat to human health and is readily recognized without magnification or is present at a level determined by any method including magnification, that indicates non-compliance with good manufacturing and sanitation practices.

8.3 **Odour/Flavour**

Bivalve molluscs affected by persistent and distinct objectionable odours or flavours indicative of decomposition or rancidity.

8.4 **Texture**

Textural breakdown of the flesh, indicative of decomposition, characterized by muscle structure which is mushy or paste-like.

Objectionable Matter (Canned Products)

A sample unit affected by struvite crystals - any struvite crystal greater than 5 mm in length.

9. LOT ACCEPTANCE

A lot shall be considered as meeting the requirements of this standard when:

(i) the total number of defectives as classified according to section 8 does not exceed the acceptance number (c) of the appropriate sampling plan in the Sampling Plans for Prepackaged Foods (AQL-6.5) (CAC/RM 42-1977);

(ii) the total number of sample units not meeting the count designation as defined in section 2.3 does not exceed the acceptance number (c) of the appropriate sampling plan in the Sampling Plans for Prepackaged Foods (AQL - 6.5) (CAC/RM 42-1969);

(iii) the average net weight of all sample units is not less than the declared weight, provided there is no unreasonable shortage in any individual container;

(iv) the Food Additives, Hygiene and Labelling requirements of Sections 4, 5.1, 5.2, 5.3 and 6 are met.