CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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Agenda Item 2a) **CX/FFP 11/31/2**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS

Thirty-first Session
Tromsø, Norway
11 – 15 April 2011

MATTERS REFERRED BY THE CODEX ALIMENTARIUS COMMISSION AND/OR OTHER CODEX COMMITTEES TO THE COMMITTEE ON FISH AND FISHERY PRODUCTS

A MATTERS ARISING FROM THE 33RD SESSION OF THE CODEX ALIMENTARIUS COMMISSION

Matters for information

Standards and Related Texts Adopted at Step 8[1]

1. The Commission adopted the following texts:

- Code of Practice for Fish and Fishery Products (sections on lobsters and crabs and relevant definitions); and
- Standard for Sturgeon Caviar.

Draft Standards and Related Texts Adopted at Step 5[2]

2. The Commission adopted the following texts:

- Draft Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish; and
- Draft Standard for Fish Sauce

Revocation of Existing Codex Standards and Related Texts[3]

3. The Commission agreed to revoke the following:

- Recommended International Code of Practice for Lobsters (CAC/RCP 24-1979); and
- Recommended International Code of Practice for Crabs (CAC/RCP 28-1983).

B MATTERS ARISING FROM OTHER CODEX COMMITTEES AND TASK FORCES

Matters for information

Executive Committee of the Codex Alimentarius Commission

Critical Review for the Elaboration of Codex Standards and Related Texts – Monitoring of Standards Development

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[1] ALINORM 10/33/REP, para. 24 and Appendix III

[2] ALINORM 10/33/REP, paras 64-65 and Appendix IV

[3] ALINORM 10/33/REP, Appendix V

4. The 63rd Session of the Committee noted the progress achieved in the Committee on Fish and Fishery Products on several items and recognized that, in view of previous delays, the Proposed Draft Code of Practice for Quick Frozen Scallop Adductor Muscle Meat was not likely to be finalized by the next session and therefore recommended that the CCFFP should set its target date at 2012[4].

5. The 64th Session of the Committee noted that the CCFFP had not set specific priority setting criteria but also noted that the workload of the CCFFP was large mainly due to the need to revise old codes of practice and integrate them into the *Code of practice for fish and fishery products* and that a number of items had been initiated prior to the critical review[5].

***Organic Aquaculture*[6]**

6. As regards the proposal for new work on organic aquaculture, some members asked for clarification on the nature of this work and the fact that it was the responsibility of the Committee on Food Labelling rather than the Committee on Fish and Fishery Products.

7. The Secretariat recalled that work on organically produced foods was the responsibility of the CCFL because the term "organic" was a labelling claim and that a section on aquaculture developed by the CCFFP was included in the Code of Practice for Fish and Fishery Products.

8. The Committee agreed that new work on organic aquaculture should be developed by the CCFL and that the advice of the CCFFP should be requested in the process as necessary.

9. This recommendation of the Executive Committee that the CCFL should request the advice of the CCFFP in the process as necessary was further endorsed by the 33rd Session of the Commission[7].

Committee on Food Labelling (CCFL)[8]

10. The 38th Session of the Committee endorsed the labelling provisions in the Standard for Sturgeon Caviar.

Committee on Food Additives (CCFA)[9]

11. The 42nd Session of the Committee endorsed the maximum levels of 25mg/kg for both annatto extracts: bixin based (INS 160B(i)) and norbixin based (INS 160b(ii)) in the *Standard for quick frozen fish sticks (fish fingers), fish portions and fish fillets – breaded or in butter* (CODEX STAN 166-1989), as proposed by CCFFP.

Committee on Methods of Analysis and Sampling (CCMAS)[10]

12. The 31st Session of the Committee endorsed the method for salt determined as chloride and expressed as sodium chloride in the Standard for Sturgeon Caviar as Type I due to the empirical extraction procedure and proposed a consequential amendment to the type of the same method in the Standard for Salted Fish and Dried Salted Fish of the *Gadidae* Family (CODEX STAN 167-1989).

Committee on Fats and Oils (CCFO)[11]

13. The 22nd Session of the Committee on Fats and Oils agreed to start new work on a Standard for Fish Oils and agreed to inform the CCFFP about the proposal. Questions were raised whether the CCFFP should carry out this work, but it was clarified that considering the mandate of CCFO that CCFO should carry out the work and that it was possible to ask questions, especially in relation to "named" fish oils to CCFFP if needed.

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[4] ALINORM 10/33/3. para. 20

[5] ALINORM 10/33/3A, paras 90-94

[6] ALINORM 10/33/3A, paras 17 - 19

[7] ALINORM 10/33/REP, para. 83 - 87

[8] ALINORM 10/33/22, para. 20

[9] ALINORM 10/33/12, para. 43

[10] ALINORM 10/33/23, para. 58

[11] REP 11/FO, paras 62-67, Appendix VI

Matters for action

Committee on Food Hygiene (CCFH)[12]

14. The Committee on Food Hygiene endorsed the hygiene provisions in the Draft Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish with amendments and the hygiene provisions of the Draft Standard for Fish Sauce without amendments. The amendments were to better reflect relevant published information and to provide more precise text from a scientific and technical point of view. Since temperature abuse has a direct impact on the safety and shelf-life of products, a new paragraph was added prior to the Table to explain that time/temperature integrators could be a useful tool to determine if the product had been temperature abused and deleted any particular reference to time/temperature integrators in the Table. The last row of the Table in Annex 2 was deleted because the use of the temperature range stipulated was an example of mild temperature abuse and was not appropriate.

15. The Committee is **invited** to consider the proposed amendments by the CCFH as presented in Annex I to this document.

[12] REP11/FH, paras 9 – 10 and Appendix II

ANNEX I

ENDORSEMENT OF FOOD HYGIENE PROVISIONS

PROPOSED DRAFT STANDARD FOR SMOKED FISH, SMOKE-FLAVOURED FISH AND SMOKE-DRIED FISH

6. HYGIENE AND HANDLING

6.1 General Provisions

The products covered by the provisions of this standard shall be prepared and handled in accordance with the appropriate sections of the recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969) and other relevant Codex texts such as codes of practice and codes of hygienic practice, such as the Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003).

6.2 Microbiological criteria

The products shall comply with any microbiological criteria established in accordance with the Principles for the Establishment and Application of Microbiological Criteria in Foods (CAC/RCP 21-1997).

6.3 Parasites

Products covered by this Standard shall not contain living parasites and particular attention needs to be paid to cold smoked or smoke-flavoured products, which should be frozen before or after smoking if a parasite hazard is present (see Annex I). Viability of nematodes and cestodes and trematodes shall be examined according to Section 8.9 and/or 8.10.

6.4 *Listeria monocytogenes*

The ready to eat products shall comply with microbiological criteria for *Listeria monocytogenes* in ready to eat foods which was elaborated in the Annex II of the Guidelines on the Application of General Principles of Food Hygiene to the Control of *Listeria monocytogenes* in Ready to Eat Foods (CAC/GL 61-2007).

6.5 *Clostridium botulinum*

Toxins of *Clostridium botulinum* are not allowed in smoked fish, smoke-flavoured fish and smoke-dried fish products. The formation of *Clostridium botulinum* toxin can be controlled through an application of a combination of science-based options such as packaging type, storage temperature, and water activity e.g. by use of salt in the water phase. Examples are shown in the Table in Annex 2, which addresses these control options.

~~Countries where the products are to be consumed may allow these products in an uneviscerated state or may require evisceration, either before or after processing in such a way as to minimize the risk of *Clostridium botulinum*.~~

6.6 Histamine

The product shall not contain histamine that exceeds 20 mg/100g fish flesh. This applies only to susceptible species (e.g. *Scombridae*, *Clupeidae*, *Engraulidae*, *Coryfenidae*, *Pomatomidae*, *Scombresosidae)*.

6.7 Other Substances

The products shall not contain any other substances in amounts, which may present a hazard to health in accordance with standards established by the Codex Alimentarius Commission, and the final product shall be free from any foreign material that poses a threat to human health.

ANNEX 1 (to the Proposed Draft Standard for Smoked Fish, Smoke-flavoured fish and Smoke-dried fish)

PROCEDURES SUFFICIENT TO KILL PARASITES

Any method used to kill parasites shall be acceptable to the competent authority having jurisdiction.

Where freezing is required to kill parasites (i.e. cold smoked fish and smoke flavoured fish), the fish must be frozen either before or after processing to a temperature time combination sufficient to kill the living parasites.

Examples of freezing processes that may be sufficient to kill some or all parasites are:

- Freezing at –20Cº at the thermal centre of the product for 24 hours (for *Anisakis* species and *Pseudoterranova decipiens* only);[1]
- Freezing at –35Cº at the thermal centre of the product for 15 hours (all parasites)[2-5];
- Freezing at –20Cº at the thermal centre of the product for 168 hours (7 days) [1-42-5] (all parasites).

[1]. FAO Fisheries Technical Paper 444 (Assessment and management of seafood safety and quality, 2004)

[2] Bier, J. 1976. Experimental Anisakiasis: Cultivation and Temperature Tolerance Determinations. J. Milk Food Technol. 39:132-137.

[3] Deardoff, T.L. et al. 1984. Behavior and Viability of Third-Stage Larvae of Terranova sp. (Type HA) and Anisakis simplex (Type I) Under Coolant Conditions. J. of Food Prot. 47:49-52.

[4] Health and Welfare Canada (1992) (in consultation with Canadian Restaurant and Food Service Association, Fisheries Council of Canada, and Fisheries and Oceans Canada). Code of practice for the preparation of raw, marinated, and partially cooked fin fish.

[5] USFDA - Centre for Food Safety & Applied Nutrition (June 2001), Fish and Fisheries Products Hazards and Controls Guidance, Chapter 5 Parasites, 3rd Edition.

ANNEX 2 (to the Proposed Draft Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish)

Examples of combinations of product attributes that minimise the likelihood of *Clostridium botulinum* toxin formation

Countries where the products are to be consumed can be expected to make their science-based risk management choices with the assistance of this framework, e.g., select some options and exclude others, based on conditions within the country (e.g., nature and enforcement of refrigeration and shelf life controls; transportation times and conditions; variability in amount of salt in the aqueous phase that could occur despite best efforts to achieve a required percentage, etc.), and the level of protection that the country chooses for itself for this particular risk. This table applies to smoked fish and smoke-flavoured fish where the smoke flavour is provided by smoke condensates. If the smoke flavour is imparted by artificial flavour blends, then 5% aqueous phase salt would be required in order to provide complete protection at any temperature over 3°C. This table does not apply to smoke-dried fish because the required water activity of 0.85 or below inhibits the growth of all foodborne pathogens so that refrigeration is not required.

As an alternative to aqueous phase salt, certain time/temperature parameters can minimise the likelihood that *C. botulinum* will grow in the product. *C. botulinum* cannot grow and produce toxin below 3ºC or below a water activity of 0.94. Other time/temperature combinations exist that similarly control the formation of toxin[13]. Where enforcement of shelf life as well as consumer acceptance of shelf life are norms, the country may select a system that relies on the combination of existing storage temperature conditions (i.e. during transport, retail storage, and consumer storage) and shelf life limitations.

~~However, in countries where consumer acceptance and regulatory enforcement of shelf life are not norms, continuous monitoring, such as that provided by time/temperature integrators on consumer packages can be an important adjunct to shelf life monitoring in the country where the product will be consumed. The~~

[13] Skinner,G.E. and Larkin, J.W. (1998) Conservative prediction of time to *Clostridium botulinum* toxin formation for use with time-temperature indicators to ensure the safety of foods. (*Journal of Food Protection* **61**, 1154-1160.

~~necessity for time/temperature integrators exists because, unlike freezing, temperature control through refrigeration is not a visual condition and cannot be determined without an additional monitoring control.~~

Temperature-abuse has a direct impact on the safety and shelf-life of the products. Time/temperature integrators may be a useful tool to determine if the products have been temperature-abused.

Product Temperature During Storage	**PACKAGING**	**WATER ACTIVITY CONTROLLED BY AQUEOUS PHASE SALT (*NaCl*)**	**COMMENTS**
~~(0°C to 3°C)~~ Below 3°C	~~Reduced Oxygen (including vacuum packaging and modified atmosphere packaging)~~ Any packaging	~~No maximum water activity is needed.~~ Not applicable	*C. botulinum* toxin cannot form below 3°C. Temperature monitoring is needed ~~for each package, e.g. time temperature integrators,~~ to ensure that the temperature does not exceed 3ºC. ~~The country where the product is consumed may require temperature monitoring for each package to ensure that the time temperature combination does not permit the production of *Clostridium botulinum* toxin.~~
≥3°C to 5°C	Aerobically Packaged*	No ~~maximum~~ minimum water activity is needed. Nonetheless, where there is a ~~reasonable~~ possibility of severe time/ temperature abuse, the country where the product is being consumed might choose an aqueous phase salt barrier of at least 3% to 3.5% (w/w) as an additional barrier.	When these products are packaged aerobically, 5ºC is the maximum recommended storage temperature for the control of pathogens generally and for quality. The purpose of the aerobic packaging is not to provide sujfficient oxygen to prevent growth and toxin formation of *C. botulinum*. In air-packaged products, aerobic spoilage organisms provide sensory signs of spoilage before the formation of toxin by *C. botulinum*. ~~However, even~~ In addition, in air packaging it is possible for anaerobic micro-environments to exist and toxin may form if the product is subject to severe time/temperature abuse. For that reason, the country where the product is consumed may still require aqueous phase salt as a barrier to growth of non-proteolytic strains of *C. botulinum* if there are concerns about the ability of transporters, retailers or consumers to maintain time/temperature control.
Frozen (< or = -18°C)	~~Reduced Oxygen (including vacuum packaging and modified atmosphere)~~ Any packaging	~~No maximum water activity is needed.~~ Not applicable	*C. botulinum* toxin cannot form when product is frozen. In the absence of adequate aqueous phase salt, toxin production can occur after thawing so, labelling information about the need for the consumer to keep the product frozen, to thaw it under refrigeration, and to use it immediately after thawing, is important. ~~The country where the product is consumed may require temperature monitoring for each package to ensure that the time temperature combination does not permit the production of Clostridium botulinum toxin after thawing.~~ Time/temperature integrators may be a useful tool to determine if the product has been

Product Temperature During Storage	**PACKAGING**	**WATER ACTIVITY CONTROLLED BY AQUEOUS PHASE SALT (*NaCl*)**	**COMMENTS**
			temperature-abused. Temperature-abused has a direct impact on the safety and shelf-life of the product.
≥3°C to 5°C	Reduced Oxygen (including vacuum packaging + modified atmosphere packaging)	Aqueous phase salt at minimum level of between 3% & 3.5% (w/w) may be selected by the country where the product is to be consumed.	Aqueous phase salt at a minimum level of between 3 and 3.5% (w/w) (aqueous phase salt) in combination with refrigeration ~~chilling~~ will significantly delay (or prevent) toxin formation. For that reason, the country where the product is consumed ~~may~~ should still require the higher aqueous phase salt as a barrier to growth of non-proteolytic strains of *C. botulinum* if there are concerns about t~~he ability of transporters, retailers or consumers to maintain time/temperature control~~ temperature abuse of the product .

*Packaging material having an oxygen permeability greater than 2,000 cc/m²/24hrs at 24 °C and 1 atmosphere and must maintain a temperature of ≤ 4 °C and a labelled shelf-life not to exceed 14 days from the date initially packaged or packaging materials having an oxygen permeability greater than 10,000 cc/m²/24 hrs.