CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

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REP 14/FFP

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Thirty-seventh Session
Geneva, Switzerland, 14 – 18 July 2014

REPORT OF THE THIRTY-THIRD SESSION OF THE CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS

Bergen, Norway
17 - 21 February 2014

Note: *This document incorporates Circular Letter CL 2014/5-FFP*

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CX 5/35 **CL 2014/5-FFP**
February 2014

TO: Codex Contact Points
Interested International Organizations

FROM: Secretariat, Codex Alimentarius Commission, Joint FAO/WHO Food Standards Programme, FAO, 00153 Rome, Italy

SUBJECT: **Distribution of the Report of the 33rd Session of the Codex Committee on Fish and Fishery Products (REP 14/FFP)**

A. MATTERS FOR ADOPTION BY THE 37th SESSION OF THE CODEX ALIMENTARIUS COMMISSION

Draft Standards and Related Texts at Step 8 of the Procedure

1. Performance Criteria for Reference and Confirmatory Methods for Marine Biotoxins (Section I-8.6 Determination of Biotoxins) in the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008) (para. 23, Appendix II);

2. Draft Standard for Fresh and Quick Frozen Raw Scallop Products (para. 57, Appendix III).

Governments wishing to propose amendments or comments on the above documents should do so in writing in conformity with the Guide to the Consideration of Standards at Step 8 (see Procedural Manual of the Codex Alimentarius Commission) to the above address **before 30 May 2014**.

Proposed Draft Standards and Related Texts at Step 5 of the Procedure

3. Proposed Draft Code of Practice for Processing of Fish Sauce (para. 93, Appendix IV).

Governments wishing to propose amendments or comments on the above documents should do so in writing in conformity with the Guide to the Consideration of Standards at Step 5 (see Procedural Manual of the Codex Alimentarius Commission) to the above address **before 30 May 2014**.

Other items for adoption

4. Food Additive Provisions in Standards for Fish and Fishery Products (para. 106, Appendix VI).

Governments wishing to submit comments should do so in writing to the above address **before 30 May 2014.**

B. REQUEST FOR COMMENTS

Proposed Draft Standards and Related Texts at Step 3 of the Procedure

5. Proposed Draft Code of Practice on the Processing of Fresh and Quick Frozen Raw Scallop Products (para. 61, Appendix V).

Governments wishing to submit comments should do so in writing to the above address **before 30 September 2014.**

SUMMARY AND CONCLUSIONS

The summary and conclusions of the 33rd Session of the Codex Committee on Fish and Fishery Products are as follows:

Matters for adoption by the Commission:

The Committee:

- advanced to Step 8, the Draft Performance Criteria for Methods for the Determination Marine Biotoxins in the *Standard for Live and Raw Bivalve Molluscs* (Section I-8.6 Determination of Biotoxins) (para. 23, Appendix II); and the Draft Standard for Fresh and Quick Frozen Raw Scallop Products (para. 57, Appendix III).
- advanced to Step 5 the Proposed Draft Code of Practice for Processing of Fish Sauce (para. 93, Appendix IV);
- forwarded the amendments to the food additive provisions in several standards for fish and fishery products (para. 106, Appendix VI).

Other matters of interest to the Commission:

The Committee agreed:

- to return the Proposed Draft Code of Practice on the Processing of Fresh and Quick Frozen Raw Scallop Products to Step 3 for comments and further discussion at the next session (para. 61, Appendix V);
- to return to Step 2/3 for redrafting, comments and further discussion at the next session, the Proposed Draft Code of Practice for Fish and Fishery Products (section on sturgeon caviar) (para. 73); and
- to discontinue further work on food additive provisions in the *Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish* (para. 34);
- the appendices to the *Code of Practice for Fish and Fishery Products* would not be sent for adoption as part of the Code, and to request comments on the integration of essential safety or quality aspects into the Code (para.132); to continue consideration of histamine from fish and fishery products (paras 109-117); to delete the table for nitrogen factors and the uniform procedure to determine nitrogen factors for use with the chemical method from section 7.4 of the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989) and to consider further amendments to section 7.4 (paras 118-124); and a new proposal on a standard for Pirarucú (para. 133) at its next session.

Matters of interest to Other Committees and Task Forces

Committee on Food Additives (CCFA)

In the *Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish*, the Committee agreed to refer only to tartaric acid [L+]; to replace the provisions for dextrin roasted starch (INS 1400) and polyoxyethylene (20) sorbitan monooleate (INS 433) by a reference to the *Guidelines for the Use of Flavourings* (CAC/GL 66-2008) and sodium erythrobate (INS 316) with sodium isoascorbate as recommended; and to request CCFA to remove Brilliant Blue (INS 133) for use in smoked fish from the GSFA as there was no technological justification for its use in smoked fish (paras 26-29 and para. 34).

The Committee agreed to present the food additives in the Draft Standard for Fresh and Quick Frozen Raw Scallop Products in a tabular format in line with the proposal of CCFA and to inform CCFA that phosphates were widely used and technologically justified for quick frozen products (para. 46).

Committee on Methods of Analysis and Sampling (CCMAS)

The Committee agreed to not proceed with developing sampling plans for the *Standard for Live Abalone and for Raw, Fresh Chilled or Frozen Abalone for Direct Consumption or for Further Processing* and *the Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish*; and the Draft Standard for Fresh and Quick Frozen Raw Scallop Products for the moment and to request CCMAS to provide guidance on what is expected from CCFFP to include or consider in

sampling plans for quality parameters or for CCMAS to provide proposed sampling plans for consideration by CCFFP (para. 8).

The Committee agreed to inform CCMAS that it had excluded information on Toxicity Equivalent Factors (TEFs) in the criteria for determining marine biotoxins (Section I-8.6 Determination of Biotoxins in the *Standard for Live and Raw Bivalve Molluscs*) because the reliability and validity of TEFs are the subject of much discussion, particularly the TEFs of the saxitoxin group, for which more than one set of TEFs are in use (para. 24).

Matters for FAO

The Committee proposed that FAO make available Toxicity Equivalent Factors for use in a form that could be easily updated (paras 17-19); to house the table for nitrogen factors and the procedure to obtain data as a basis of nitrogen factors on the FAO website (paras 120-123); and to consider disseminating trade related information on fish and fishery products (paras 129-130).

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INTRODUCTION

1. The Codex Committee on Fish and Fishery Products (CCFFP) held its 33rd Session in Bergen, Norway, from 17 to 21 February 2014 at the kind invitation of the Government of Norway. Dr Bjørn Røthe Knudtsen, Regional Director of the Norwegian Food Safety Authority, chaired the Session. The Session was attended by 161 delegates representing 58 Member Countries and one Member organization and Observers from 5 international organization. The list of participants is attached as Appendix I to this Report.

OPENING OF THE SESSION

2. The Session was opened by Ms Trude Drevland, the Honourable Mayor of Bergen. She welcomed the participants and highlighted the importance of the work in the Committee as international standards like Codex Standards were important to control fishery resources appropriately, which is precious to many countries including Norway.

3. Mr Ivar Helbakk, on behalf of Mr Arne Roksund, Secretary General of the Ministry of Trade, Industry and Fisheries, also welcomed the participants. He highlighted the work of Codex over the past 50 years, including that of the Committee, to ensure the protection of consumers' health and to enhance fair trade practices as well as to give access to markets.

Division of Competence[1]

4. The Committee noted the division of competence between the European Union (EU) and its Member States, according to paragraph 5, Rule II of the Procedure of the Codex Alimentarius Commission, as presented in CRD 1.

ADOPTION OF THE AGENDA (Agenda Item 1)[2]

5. The Committee agreed to adopt the Provisional Agenda as the Agenda for the session.

6. The Committee agreed to establish in-session working groups on: (1) food additive provisions in standards for fish and fishery products (Agenda Item 9, chaired by the United States of America) with the terms of reference as identified in CRD 15; (2) histamine (Agenda Item 10, chaired by Japan) to review and update delegates on the discussion paper on histamine (CX/FFP 14/33/12) and to provide a clear recommendation on the way forward for consideration by the Committee; and (3) performance criteria for methods for marine biotoxins (Agenda Item 3, chaired by Australia) with the terms of reference as identified in CRD 14)

MATTERS REFERRED TO THE COMMITTEE BY THE CODEX ALIMENTARIUS COMMISSION AND OTHER CODEX COMMITTEES (Agenda Item 2a)[3]

7. The Committee considered the information provided in CX/FFP 14/33/2 and noted that several of the matters referred would be discussed under relevant agenda items.

Sampling Plans for the Standard for Live Abalone and For Raw, Fresh Chilled or Frozen Abalone for Direct Consumption or for Further Processing (CODEX STAN 312-2013) and the Standard for Smoked Fish, Smoke-Flavoured Fish and Smoked-Dried Fish (CODEX STAN 311-2013)

8. The Committee considered how to deal with sampling plans taking into account the proposal presented by South Africa in CRD 13. Delegations expressed uncertainty on the implications of the tables for regulatory practice and expressed the need for guidance on the level of detail required in these sampling plans. The Committee agreed not to proceed with developing sampling plans for the moment and to request CCMAS to provide guidance on what CCFFP is expected to include or consider in sampling plans for quality parameters or for CCMAS to provide proposed sampling plans for consideration by CCFFP. It was further agreed that this decision would also extend to the sampling plans for the draft Standard for Fresh and Quick Frozen Raw Scallop Products.

MATTERS ARSING FROM THE WORK OF FAO AND WHO (Agenda Item 2b)[4]

9. The Representative of FAO presented a summary of the work done by FAO and WHO.

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1 CRD 1 (European Union Division of Competence); CRD 14 (Suggestions for a mandate for the in-session Working Group on Performance Criteria for Reference and Confirmatory Methods for Marine Biotoxins); CRD 15 (Suggested mandate for the in-session Working Group on Food Additive Provisions in the Standards for Fish and Fishery Products).

2 CX/FFP 14/33/1.

3 CX/FFP 14/33/2, CRD 2 (comments of the European Union), CRD13 (comments of South Africa).

4 CX/FFP 14/33/3, CRD 2 (comments of India).

10. Following the recommendation of the Joint FAO/WHO Expert meeting on Public Health Risks of Histamine and Other Biogenic Amines from Fish and Fishery Products, FAO/WHO developed an online tool for developing and analyzing sampling plans (www.fstools.org/histamine). The FAO representative explained that the tool attempts to find sampling plans which meet user defined objectives by searching for combinations of number of samples (n) and a concentration threshold (m) that meet the objective. The tool has some default values, which the users can change to more accurately reflect the scenario for which the sampling plan is being designed. The tool has an "analyse a plan" function that estimates the probability of accepting lots of product given that they are tested according to a user defined sampling plan. The Committee was encouraged to use the tool in the ongoing work on histamine.

11. The Representative provided an update on the work being done to follow-up the recommendation of Codex Committee on Food Hygiene to continue work on *Vibrio* spp. FAO/WHO have produced an Expert Meeting report "Guidance on the selection and application of methods for detection and enumeration of pathogenic *Vibrio* spp. in seafood" and organized regional training in Asia and Latin America. The Committee took note of the progress made.

12. The Representative further informed the Committee of the request received from the participants of the 2nd International Workshop on Molluscan Shellfish Sanitation through the European Union Reference Laboratory for Monitoring Bacteriological and Viral Contamination of Bivalve Molluscs, to support the establishment of an international expert working group to develop scientific and technical guidance for countries and develop a "best practice guideline" for shellfish sanitation programmes within the framework of Section 7 of the Code of Practice for Fish and Fishery Products (CAC/RCP 50-2003).

13. The Committee expressed support for this work and recommended that FAO and WHO should allocate appropriate resources for the development of this technical guidance.

14. The Representative also informed the Committee of the recommendations of the Intergovernmental Oceanographic Commission Panel on Harmful Algal Blooms (IPHAB) regarding the establishment of a coordinated IOC-FAO-WHO effort on ciguatera fish poisoning to combine the capabilities of these agencies and that of ecologists, toxin chemists and medical researchers to develop a coordinated ciguatera strategy, improve organism detection and sampling strategies, improve toxin detection, epidemiological data collection, reporting and assessments. The Committee noted this item and requested to be informed of further developments in this area.

MATTERS ARISING FROM THE WORK OF OIE (Agenda Item 2c)[5]

15. The Committee noted and expressed their appreciation to the OIE for the information provided.

DRAFT PERFORMANCE CRITERIA FOR REFERENCE AND CONFIRMATORY METHODS FOR MARINE BIOTOXINS (SECTION I-8.6 DETERMINATION OF BIOTOXINS) IN THE STANDARD FOR LIVE AND RAW BIVALVE MOLLUSCS (Agenda Item 3)[6]

16. The Committee recalled that the 36th Session of the Commission had adopted at Step 5 the proposed draft Section on Determination of Biotoxins in the *Standard for Live and Raw Bivalve Molluscs* as proposed by the last session of the Committee. It also recalled that the 34th Session of CCMAS had not endorsed the proposal and had encouraged the Committee to provide information on Toxicity Equivalency Factors (TEF) for all the biotoxins listed in the Standard. To facilitate discussion on this item, the Committee recalled its decision to establish an in-session working group (*see* Agenda Item 1).

17. The Delegation of Australia, as the chair of the in-session working group, explained that the working group agreed that it was premature to include TEF into the standard as more information to establish TEF was becoming available from recent and ongoing scientific work and proposed that FAO make available TEF for use in a form that could be more easily updated. The working group also developed criteria for chemical methods and prepared two options for biological and functional methods for paralytic shellfish toxicity: one was listing the appropriate method of analysis (option 1) and another was a table for criteria (option 2).

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5 CX/FFP 14/33/4.

6 REP13/FFP Appendix VII; CL 2013/16-FFP; CX/FFP 14/33/5 (comments of Australia, Norway, New Zealand); CX/FFP 14/33/5-Add.1 (comments of Argentina, Canada, Chile, Morocco, Philippines, United States of America, African Union); CX/FFP 14/33/5-Add.2 (comments of Costa Rica, European Union, Norway); CRD 3 (comments of Argentina, China, India, Morocco, Republic of Korea, Thailand); CRD 14 (Terms of Reference of the in-session working group); CRD 20 (report of in-session working group).

18. The Representative of FAO informed the Committee that FAO would be able to make information available through its website as part of a FAO Fisheries and Aquaculture Technical Paper (FATP). The advantage with FATP is that additional technical information can be included instead of only the table on TEF, e.g. how these have been derived, methodology used. As more information becomes available, the FATP could be updated through working with expert contributors.

19. The Committee generally agreed to the conclusions of the working group, to keep both the chemical method and biological and functional methods available for the time being, and considered the draft text proposed. In addition to editorial amendments, the Committee made the following changes.

Section I-8.6.1

20. The Committee agreed to move the second paragraph of I-8.6 to subsection I-8.6.1 as more appropriate and to revise the title to " Criteria for Determination of Toxin Analogues by Chemical Methods" to better explain that the criteria applied to chemical methods and to all toxin analogues. There was a discussion whether the texts with regard to the basis of calculation of criteria in table 1 was necessary. The Committee agreed to retain this information as CCMAS would need to know how the criteria had been derived for the purposes of endorsement, with the understanding that the references would not appear in the final standard.

Section I-8.6.2

21. The Committee agreed to include Option 1 (listing method) and to remove Option 2 (table for criteria).

22. Several delegations proposed to include AOAC 2011.27 as an alternative method for the provision. The Committee noted that AOAC 959.08 was likely to be classified as Type I method, an alternative method for which would not be endorsed by CCMAS according to the current procedure. The Committee was, however, informed that CCMAS had started discussion about the extension of the criteria approach to Type I methods, which might change the procedure. The Committee therefore agreed to retain the text as proposed by the working group without making specific reference to AOAC 2011.27.

Status of the Draft Performance Criteria for Methods for the Determination of Marine Biotoxins (Section I-8.6 Determination of Biotoxins) in the *Standard for Live and Raw Bivalve Molluscs*

23. The Committee agreed to forward the proposed draft Section to the 37th Session of the Commission for adoption at Step 8 and to forward it to CCMAS for endorsement (Appendix II).

Reply to CCMAS on TEFs

24. The Committee agreed to inform CCMAS that it had excluded information on TEF in the criteria for determining marine biotoxins in bivalves because the reliability and validity of TEF are the subject of much discussion, particularly the TEF of the saxitoxin group, for which more than one set of TEF are in use. Additionally, acute oral toxicities of various individual toxin analogues are currently being investigated, which may be considered to be more relevant to human health than intraperitoneally derived toxicities. Recognising these, the Committee believes that TEF cannot be incorporated into the Standard at this time.

STANDARD FOR SMOKED FISH, SMOKE-FLAVOURED FISH AND SMOKE-DRIED FISH – SECTION 4 FOOD ADDITIVES (Agenda Item 4)[7]

25. The Committee recalled that its last session had finalized the Standard, which was subsequently adopted by the Commission. Section 4 included several additives on which consensus had been reached and which were forwarded to the Committee on Food Additives (CCFA) for endorsement. The Committee had returned for comments at Step 6 those food additives on which no agreement could be reached.

26. The Committee considered the comments made by the CCFA when considering the section on food additives and agreed on the following amendments to the list of additives.

[7] CL 2013/16-FFP, REP 13/FFP, Appendix VIII, CX/FFP 14/33/6 (comments of EU, Norway and USA), CX/FFP 14/33/6-Add.1 (comments of Canada, Ghana, Kenya, Philippines, AU), CRD 2 (comments of EU), CRD 4 (comments of China, India).

27. As regards the recommendation to list all tartrates as listed in the General Standard for Food Additives (GSFA), the Committee noted that no technological justification was provided on the use of other tartrates in smoked fish. The Committee therefore agreed to refer only to tartaric acid [L+]. The Committee also noted that whilst the GSFA refers to all tartrates, the use in the adopted provisions was limited to INS 334 tartaric acid as specified in Note 128

28. The Committee agreed to replace the provisions for dextrin roasted starch (INS 1400) and polyoxyethylene (20) sorbitan monooleate (INS 433) by a reference to the *Guidelines for the Use of Flavourings* (CAC/GL 66-2008).

29. The Committee agreed to replace the name of sodium erythrobate (INS 316), used according to GMP with sodium isoascorbate as recommended by CCFA.

30. The Committee considered the additives which had been returned to Step 6 for comments and came to the following conclusions.

Brilliant Blue (INS 133)

31. The Committee noted that some written comments indicated that Brilliant Blue was used to adjust colour. Several delegations however expressed the view that there was no technological justification for the use of this additive in smoked fish and the Committee did not include it in section 4 of the Standard. The Committee further agreed to request CCFA to remove this additive for use in smoked fish from the GSFA.

Caramel 1 (INS 150a)

32. Several delegations pointed out that there was no technological justification for the use of Caramel 1 and the Committee agreed that as it was used in spice seasoning, there was no need to list it for direct use in smoked fish.

Sodium Nitrite (INS 250)

33. Some delegations indicated that sodium nitrite is widely used in vacuum packaged hot and cold smoked fish products to prevent *Clostridium botulinum* growth and toxin formation, and supported its use for "reduced oxygen packaged products only". Several other delegations expressed safety concerns with the use of sodium nitrites in view of the high potential for the formation of nitrosamines and recalled that prevention of *Clostridium botulinum* toxin formation in smoked fish was adequately addressed by the measures listed in section 6.5 and Annex 2 of the Standard. After some discussion, noting that from a technological perspective, alternative measures were available to control *C. botulinum* growth and toxin formation, the Committee agreed not to include sodium nitrite in the list of additives.

Status of Section 4. Food Additives in the Standard for Smoked Fish, Smoke Flavoured Fish and Smoke Dried Fish

34. The Committee agreed to inform the CCFA of its decisions in reply to the comments made in the endorsement process. No additional additives were proposed for inclusion in the list and the discussion on section 4. Food Additives was therefore concluded.

DRAFT STANDARD FOR RAW, FRESH AND QUICK FROZEN SCALLOP PRODUCTS (Agenda Item 5)[8]

35. The Committee recalled that at its last session considerable progress had been made, but that due to the extensive changes, had agreed to return the draft Standard to Step 6 for comments and further consideration at this session.

36. The Committee noted that from the comments submitted at Step 6 there were diverging views on several issues, in particular on whether 'fresh scallops with added water' should be included in the scope of the Standard. It was recognized that the scope needed to be clarified before the Standard could be finalized.

37. The Committee considered the text section by section and made the following amendments and comments, in addition to editorial changes.

[8] CL 2012/31-FFP, REP13/FFP, Appendix IX, CX/FFP 14/33/7 (comments of Egypt, EU, France, Norway and USA), CX/FFP 14/33/7 Add.1 (comments of Canada, Kenya, NZ), CX/FFP 14/33/7 Add.2 (comments of Philippines, AU), CRD 5 (comments of Argentina, China, Thailand), CRD 11 (comments Morocco).

Title

38. The Committee agreed to revise the title to “Standard for Fresh and Quick Frozen Raw Scallop Products” to clarify that quick frozen scallops in the Standard were raw and not subjected to cooking.

Scope

39. The Committee considered whether to retain ‘fresh scallop meat (with or without roe) with added water’ in the Scope. Several delegations did not support the inclusion of these products as in their view there was no technological justification for intentionally adding water; addition of water could be considered as an adulteration of the product; lead to fraudulent practices and be misleading to the consumer. Several other delegations were of the opinion that these products should be allowed in the Standard since they were traded and the issue of water content could be addressed through appropriate labelling. However, in the spirit of compromise these delegations agreed to the exclusion of this category of scallops from the scope as proposed by the Chairperson. The Chairperson noted that trade in these products appeared to be more of a regional nature and proposed that a separate standard could be considered for these products in the future.

40. Some questions were raised on whether quick frozen scallop meat (with or without roe) with added water should be allowed, but it was clarified that there was substantial trade in these products without the addition of phosphates.

41. The Committee therefore agreed to restrict the scope to those products covered by (i), (ii) and (iii), and to remove those fresh products with “added water only” (iv), and to make consequential changes throughout the text where relevant.

42. The Delegation of Argentina expressed its reservation to the decision to retain category (iii) as they were opposed to the addition of water and solutions of water and phosphates as this could affect the quality of the product.

43. The Committee further agreed to refer to “ scallop meat”, “roe-on-scallop meat” (either fresh or quick frozen) throughout the text where appropriate and to refer to “scallop product” when provisions applied to all the scallop products covered by the three categories in the Standard.

2. 1 Product Definition

44. The Committee agreed to amend 2.1.2 by indicating that “roe should remain attached to the adductor muscle” in fresh or quick frozen roe-on-scallop meat for clarity.

45. The Committee agreed to amend 2.2.1 and 2.2.2 by deletion of reference to ‘removal of the shell, viscera and roe’ as this was already described in the definition.

Food additives

46. The Committee agreed to present the food additives in a tabular format in line with the proposal of CCFA and agreed to inform CCFA that phosphates were widely used and technologically justified for quick frozen products.

Hygiene

47. The Committee agreed to delete 6.2 as 6.3 provided sufficient guidance on microbiological criteria.

Labelling

48. The Committee had extensive discussion on the naming of scallop products, in particular how much flexibility should be given to countries in terms of naming of products to which water was added (section 7.1); whether to provide flexibility for labelling of the percentages of scallop meat and percentages of water, or whether both should be required (new section 7.4). In this discussion, the Committee noted the comment of CCFL that there could be some redundancy as it required both the percentage of scallop meat and percentage of added water to appear on the label (REP13/FL, para. 11).

49. Delegations in support of flexibility in relation to the naming of scallop products, were of the opinion that names of scallop products were understood differently by consumers in different countries, and that flexibility would provide countries to name products in accordance with the custom of their country. In relation to the requirement for declaration of percentage scallop meat and percentage of added water, these countries were of the opinion that this could be redundant and that only the percentage of added water should be labelled; but that they could agree to providing flexibility so that countries could decide on whether to require the labelling of percentages of either scallop meat and/or added water.

50. Those delegations in favour of requiring the declaration of the percentage of scallop meat and percentage of added water and the inclusion of water added in the name of the products, pointed out that consumers needed to be informed of the contents of the products in order to make an informed choice and that if the name did not indicate whether water had been added, and neither the percentage of scallop meat was declared on the label, consumers would not be able to make an informed choice on the nature of the product. As a compromise these delegations could agree to giving flexibility to the declaration of percentages of scallop meat and/ added water, if for products covered by 2.1.3, 'added water' should be part of the name of the product, in order to better inform the consumer.

51. In view of the discussion, the Committee amended section 7.1 to provide flexibility, in line with the spirit of the *General Standard for the Labelling of Prepackaged Foods* in the naming of products defined in 2.1.1, 2.1.2 and 2.1.3. For products covered by 2.1.3, it was agreed that "added water", should be part of the name of the product as information was necessary for consumers to distinguish between those products with added water from those without added water. In line with this decision, the Committee agreed to provide some flexibility with regard to the declaration of percentages of scallop meat and percentages of added water.

Sampling, Examination and Analysis

52. The Committee agreed to not proceed with development of sampling plans at this point in line with an earlier decision to request advice from CCMAS in this regard (*see* Agenda Item 2a).

53. The Committee agreed to amend the French version of 8.5 to refer to "visible à l'œil nu" rather than "facilement visible" for better readability and understanding.

54. The Committee agreed to remove the square brackets in 8.7 Determination of added water with amendments to the text to provide clarification that the criterion relates to the natural level of moisture in the meat of scallop species harvested.

Parasites

55. The Committee agreed to delete "readily visible" to provide flexibility for countries to decide on what was objectionable, noting that parasites were not a food safety hazard in scallops, but could cause the product to have an objectionable appearance, but that "objectionable level" was subjective, and that a quantitative tolerance level was not practical because of the variability in parasite shape, size, colour and location. The Delegation of Argentina expressed their objection to this decision as it was their view that a tolerance level should be set. The Delegation of Egypt also noted that account should be taken of the health risks from even dead parasites due to development of toxins which could trigger an allergic reaction.

Exceeding level of added water

56. The Committee agreed to remove the square brackets from this provision.

Status of the Draft Standard for Fresh and Quick Frozen Raw Scallop Products

57. The Committee agreed to advance the renamed draft Standard to the 37th Session of the Commission for adoption at Step 8 (Appendix III). The provisions on food additives and food labelling will be sent to the relevant committees for endorsement.

PROPOSED DRAFT CODE OF PRACTICE ON THE PROCESSING OF SCALLOP MEAT (Agenda Item 6)[9]

58. The Committee recalled that the Proposed Draft Code of Practice had been returned for redrafting by an electronic working group, comments and consideration by this Session.

59. The Delegation of Canada introduced the item and informed the Committee that Canada had prepared a revised version of the Code taking into account the decisions taken on the renamed Standard for Fresh and Quick Frozen Raw Scallop Products and the written comments submitted (CRD 19). This left only a few outstanding issues which required further consideration, such as the appropriateness of permitting the processing of dead scallops and the inclusion of guidance for the disposal of dead scallops; the risk of biotoxin presence in scallop meat and roe as identified by the electronic working group; as well as the need for further guidance on short-haul voyages as proposed in written comments.

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[9] CX/FFP 14/33/8, CX/FFP 14/33/8 Add.1 (comments of Canada, Japan, Philippines and USA), CX/FFP 14/33/8 Add.2 (comments of Australia and AU), CRD 6 (Argentina, China and Thailand), CRD 19 (revised Proposed Draft Code of Practice on the Processing of Scallop Meat prepared by Canada).

60. In view of the fact that the proposal in CRD 19 addressed the alignment with the Standard and took up the written comments submitted, the Committee agreed to circulate the revised proposed draft Code for comments at Step 3. The Committee also agreed to establish an electronic working group, led by Canada and working in English only, to consider the comments received and to address the issue of biotoxin risk, dead scallops and short-haul voyages, and to prepare a further revised proposed draft Code for further comments at Step 3. If necessary, the comments would be considered in a physical working group to be held immediately prior to the next session, led by Canada and working in English, French and Spanish to facilitate discussion in the plenary.

Status of the Proposed Draft Code of Practice on the Processing of Fresh and Quick Frozen Raw Scallop Products

61. The Committee agreed to return the renamed Proposed Draft Code to Step 3 for comments and consideration by the abovementioned working groups and the next session of the Committee (Appendix V).

PROPOSED DRAFT CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS (SECTION ON STURGEON CAVIAR) (Agenda Item 7)[10]

62. The Committee recalled that its last session had returned the Proposed Draft Code for redrafting by an electronic working group chaired by Iran for comments at Step 3 and consideration at this session.

63. The Delegation of Iran introduced the document (CX/FFP 14/33/9) and highlighted the main points considered in the revision: alignment of the Code with the *Standard for Sturgeon Caviar*; revision of some definitions, titles and related guidance to ensure consistency with other sections of the Code; and removing the guidance which was covered by the prerequisite programme.

64. The Delegation recalled that there were different views in the working group as to whether caviar production from ovulated fish eggs and related processing steps should be allowed in the Code. The Chairperson recalled that the Standard adopted in 2010 included caviar production through various techniques, including hormonal induction, and that the Code should be consistent with the Standard and provide guidance to ensure compliance with its provisions. The Committee agreed with this approach.

65. The Committee noted a comment that the section should include a description of the scope. It was noted that the section followed the same structure as other sections in the Code, with general considerations providing an introduction to the section.

Definitions

66. One delegation proposed to delete the definition of “fish eggs”, to retain the definition of “caviar”, and to remove the square brackets from the definition of “Caviar from ovulated fish eggs” and to amend the Standard accordingly to ensure consistency in the definitions.

67. Several other delegations proposed to delete the definitions of “fish eggs” and “caviar”, as they were already included in the Standard, and did not support the definition of “caviar from ovulated fish eggs”. After some discussion, it was agreed to retain only the definitions currently included in the Standard without any amendment.

68. The Committee agreed to amend the definition of “extra pure food grade salt” to make it consistent with the *Standard for Food Grade Salt* (CODEX STAN 150-1985).

69. The Committee noted some proposals to revise the definition of “pasteurization” and agreed that in order to ensure consistency throughout the Code, the definition used in the sections on crabs and lobsters should be used for sturgeon caviar.

[10] CX/FFP 14/33/9, CX/FFP 14/33/9-Add.1 (comments of Japan and Kenya), CX/FFP 14/33/9-Add.2 (comments of Canada, United States of America), CX/FFP 14/33/9-Add.3 (comments of Brazil, Costa Rica, EU), CRD 7 (comments of China), CRD 11 (comments of Morocco), CRD 17 (comments of NHF).

70. It was agreed to refer to the "extraction" of fish eggs rather than their "delivery" in the definition of "micro-caesarean". The Committee noted a proposal to delete this definition on the grounds of animal welfare but noted that the Code included general requirements related to preventing stress during harvesting in the section on Aquaculture and that the definition corresponded to current practice and it was retained. In response to a comment on the need to protect species of sturgeon, it was also recalled that while initiating work on the Standard, reference was made to the fact that some endangered species are covered by the Standard and subject to the CITES Convention. As regards a proposal related to the stunning of fish, it was noted that this could be addressed in another part of the Code, but there was no need for a definition.

General Considerations

71. The Committee noted the proposals to revise the second paragraph, delete the third paragraph, and clarify the fourth paragraph on the use of pasteurisation. The Delegation of Iran, as chair of the electronic working group, indicated that the intention of the text on thermal treatment was not referring to pasteurization, but rather retorting and the Committee agreed that this question would require further clarification. It was agreed that further clarification was needed on whether clean water or potable water was needed for the purpose of washing fish and for other processing steps. Some other specific amendments were proposed but the Committee agreed that at this stage it was not possible to consider the text in further detail due to time constraints and that it should be considered further at the next session.

72. The Committee agreed to establish an electronic working group chaired by Iran and working in English only, to redraft the document on the basis of the comments made in writing and at the session, incorporating the decisions made at the session, for comments at Step 3. The comments would be considered in a physical working group to be held prior to the next session, led by Iran and working in English, French and Spanish in order to facilitate the discussion in the plenary.

Status of the Proposed Draft Code of Practice for Fish and Fishery Products (section on sturgeon caviar)

73. The Committee agreed to return the Proposed Draft Code to Step 2/3 for redrafting by the above-mentioned working group, comments and consideration by the next session of the Committee.

PROPOSED DRAFT CODE OF PRACTICE FOR PROCESSING OF FISH SAUCE (Agenda Item 8)[11]

74. The Committee recalled that the 36th Session of the Commission had approved new work for elaboration of a Code of Practice for Processing Fish Sauce as requested by the last session of the Committee. It also recalled that its last session had agreed to establish an electronic working group, chaired by Thailand and Vietnam to draft the proposed draft of the code.

75. The Delegation of Thailand, on behalf of the electronic working group, introduced CX/FFP 14/33/10 and explained the issues considered in the electronic working group such as: alignment to the *Standard for Fish Sauce*; addition of a harvest vessel step; size of fish to be used; ratio of fish to salt; monitoring of water phase salt and/or water activity; and potential hazards in processing. The Delegation also introduced CRD 16, in which most written comments at Step 3 were incorporated into the original proposal of the electronic working group.

76. The Committee agreed to use CRD 16 as a basis for the discussion in the plenary. The Committee considered the text section by section and made the following amendments and comments, in addition to editorial changes.

Introduction

77. The Committee agreed to insert "or processing aids" after "other ingredients" as it might be used to assist the fermentation process.

Hazards

78. The Committee agreed to replace "after harvest" in the last sentence of the first paragraph with "on the harvest vessel" to indicate that raw material quality should also be controlled on the harvest vessel. A similar amendment was made to the first sentence of the second paragraph.

[11] CX/FFP 14/33/10; CX/FFP 14/33/10-Add.1 (comments of European Union, Japan, Kenya, Philippines, United States of America); CX/FFP 14/33/10- Add.2 (comments of Canada, African Union); CRD 8 (comments of Malaysia); CRD 16 (Revised Proposed Draft Code of Practice for Processing of Fish Sauce prepared by Thailand).

Flow Chart

79. One delegation proposed to include “Heating” after “8. Blending”. It was, however, not agreed because in some countries a heating process after blending may not be necessary and this step was retained as optional.

1.1 Fish

80. The Committee agreed to include heavy metals as a potential hazard and to replace physical contamination with foreign matter in potential defects. It was also agreed to refer to storage records in the first small bullet point.

81. The Committee agreed to insert further technical guidance under the 3rd bullet point to clarify when gutting fish greater than 12 cm, gutting is considered complete when the intestinal tract and internal organs have been removed; and clean seawater should be used.

1.2 Salt requirements

82. One delegation proposed that microbiological contamination should be included in potential hazards as solar salt might be a source of red halophilic bacteria. It was clarified that halophilic bacteria should not be considered as a hazard as it was necessary for fermentation.

2. Mixing of fish and salt

83. The Committee did not agree to a proposal to include *Listeria monocytogenes* as an example of microbiological contamination as *Listeria* did not grow well nor would compete well with the other bacteria at the high temperatures used during the fermentation process.

84. The Committee agreed to insert the following text as the last bullet point to align with Section 1.2: salt burn should be avoided by using the right type of salt.

3. Fermenting

85. The Committee agreed to add physical and chemical contamination as potential hazards and to amend the text to make sure that fermenting tanks should be made from non-hazardous material.

4. First separation

86. It was agreed to insert turbidity as an example of incorrect separation in potential defects.

8. Blending

87. The Committee agreed that potential hazards should include microbiological contamination.

88. The Committee considered a proposal to include “unauthorized food additives” under potential hazards rather than potential defects but did not come to a conclusion.

89. The Committee, recalling that the Code should align with the *Standard for Fish Sauce*, agreed to remove the reference to the *General Standard for Food Additives*, which has some inconsistencies with the *Standard for Fish Sauce*, in the fourth bullet point.

10. Storage

90. The Committee agreed that potential hazards should include physical and chemical contamination.

14. Transportation/ distribution

91. The Committee agreed to amend the text as follows for clarity: cartons should be clean, dry, durable and suitable for the intended use; and cartons should be handled with care to avoid damage to the containers.

17. Ingredients and additives

92. Microbiological contamination was added to potential hazards.

Status of the Proposed Draft Code of Practice for Processing of Fish Sauce

93. The Committee agreed to forward the Proposed Draft Code to the 37th Session of the Commission for the adoption at Step 5 (Appendix IV).

PROPOSED FOOD ADDITIVE PROVISIONS IN STANDARDS FOR FISH AND FISHERY PRODUCTS (FOOD ADDITIVE PROVISIONS IN ADOPTED STANDARDS) (Agenda Item 9)[12]

94. The Committee recalled that its last session had agreed to establish an electronic working group chaired by the European Union and the United States of America, to prepare proposals for food additives in the standards for fish and fishery products following the approach taken for the Standard for Smoked Fish, Smoked-Flavoured Fish and Smoke-Dried Fish; and to focus on technological justification for those food additives, and if necessary, propose changes to the GSFA; and its earlier decision to establish an in-session working group (see Agenda Item 1) with the following mandate:

> Task 1: Review the proposals contained in CX/FFP 14/33/11 Appendix I with the aim of giving the Committee a recommendation on new proposals for food additives in the standards. The in-session working group will provide technical justification on new proposals.
>
> Task 2: Discuss and decide whether it will be appropriate to have a new electronic working group to conduct further work on inconsistencies/inaccuracies in food additive provisions in the standards. The in-session working group should if so decided, provide the Committee with a proposal for a mandate for an electronic working group. This discussion and the mandate should be based upon the information given in CX/FFP 14/33/11 in regard to Recommendation 2.
>
> Task 3: Consider the revision of the use of Sodium aluminium phosphate (INS 541) with aim of either revoking the provision or expressing the maximum level as aluminium.

95. The Delegation of the European Union presented the report of the working group in CRD 22, including Annex 1 summarising the outcome of the discussion and Annex 2 providing the layout of the recommended changes to the standards. The decisions and comments made by the Committee are presented below.

Standard for Quick Frozen Finfish, Eviscerated or Uneviscerated (CODEX STAN 36-1981)

96. The Committee agreed with the proposal of the working group not to include phosphates, as they were not technologically justified, and retained the current provisions.

General Standard for Quick Frozen Fish Fillets (CODEX STAN 190-1995)

97. The Committee discussed the proposal to use the level of 2200 mg/kg, expressed as phosphorous, listed in the GSFA, which does not take into account natural phosphates. Some delegations expressed the view that natural phosphates should be taken into account as otherwise it would not be possible to control actual phosphate levels, and it was not always possible to distinguish between natural and added phosphates. Other delegations expressed the view that the origin of phosphates could be determined, and that the reference to the level of use provided a clear indication to manufacturers of the amount that could be added, which would not be the case with a level including both natural and added phosphates. After some discussion it was agreed to align the level with the GSFA level of 2200 mg/kg, expressed as phosphorus, singly or in combination. It was also agreed to change the reference from "Moisture/Water Retention Agents" to "Humectants – Moisture/Water Retention Agents", to include all phosphates from the GSFA group of phosphates which perform the function of humectants.

98. The same amendment was made to the Standard for Quick Frozen Blocks of Fish Fillets, Minced Fish Flesh and Mixtures of Fillets and Minced Fish Flesh (CODEX STAN 165-1989) and to the Standard for Quick Frozen Lobsters (CODEX STAN 95-1981).

Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets - Breaded or in Batter (CODEX STAN 166-1989)

99. The Committee agreed to the same amendment mentioned above on phosphates, and agreed to correct the name of the functional class "Leavening Agents" to "Raising Agents"; to list all phosphates from the GSFA which perform the function as raising agent, expressed as phosphorus; to delete Sodium aluminium phosphate (INS 541) from the standard; and to include Alginic acid (INS 400), Potassium alginate (INS 402), Ammonium alginate (INS 403) and Calcium alginate (INS 404) as thickeners in breaded or batter coatings. The Committee noted that the working group had discussed the possibility of increasing the level of raising agents in breaded or batter coatings to achieve the same effect if Sodium aluminium phosphate was removed, but had retained the current levels as no technological justification was provided.

[12] CX/FFP 14/33/11, CRD 15 (terms of reference of the in-session working group), CRD 22 (report of the in-session working group).

Standard for Quick Frozen Shrimps or Prawns (CODEX STAN 92-1981)

100. As regards phosphates, the Committee agreed to change "Acidity Regulators" to "Humectants – Moisture/Water Retention Agents", to include all phosphates from the GSFA which perform the function of humectants and to change the use level to 2200 mg/kg as phosphorus, singly or in combination.

Standard for Canned Tuna and Bonito (CODEX STAN 70-1981) and Standard for Canned Shrimps or Prawns (CODEX STAN 37-1981)

101. The Committee agreed with the conclusion of the working group that phosphates as humectants were not technologically justified and should not be added to these standards, and the current provisions were retained.

Standard for Canned Crab Meat (CODEX STAN 90-1981)

102. The Committee noted that the working group had not supported the inclusion of phosphates as humectants and had agreed that the additives INS 338 and INS 450 should be expressed as phosphorus. It was agreed that the provisions for these additives would require further consideration, as their names need to be corrected and it should be assessed whether the provisions for INS 338 and INS 450 at 10 mg/kg expressed as P_2O_5 singly or in combination (including natural phosphate) should be retained, taking into account the natural phosphate content in crab meat. The Committee agreed that this would require further consideration at the next session.

Standard for Salted Fish and Dried Salted Fish of the Gadidae Family of Fishes (CODEX STAN 167-1989)

103. The Committee agreed that phosphates as sequestrants should not be included in the standard and the current provisions were retained. It was noted that the product covered by the standard contains 12% salt while phosphates used as sequestrants are permitted in some regulations in salted fish containing at least 18% salt.

Standard for Fish Sauce (CODEX STAN 302-2011)

104. The Committee agreed to retain the current provisions as no technological justification had been provided regarding the need for phosphates in fish sauce.

Standard for Crackers from Marine and Freshwater Fish, Crustaceans and Molluscan Shellfish (CODEX STAN 222-2001)

105. The Committee noted that the working group had agreed that there was no technological need for phosphates, and proposed to delete INS 452 Polyphosphates. The Committee noted that if crackers were prepared from minced fish in which phosphates had been added, the carry-over principle would apply. After some discussion, it was agreed to retain the current provisions without any change.

Status of the Food Additive Provisions in Standards for Fish and Fishery Products

106. The Committee agreed to forward the revised list of food additives in the standards mentioned above to the CCFA for endorsement and to the Commission for adoption (see Appendix VI).

107. The Committee agreed that the proposals listed in Appendix II of CX/FFP 14/33/11 were for information and did not require further consideration.

108. As regards the provisions which required further consideration, the Committee agreed to establish an electronic working group, working in English and chaired by the European Union, to continue with the review of food additive additives provisions to correct inconsistencies/inaccuracies in the standards for fish and fishery products.

DISCUSSION PAPER ON HISTAMINE (Agenda Item 10)[13]

109. The Committee recalled that its last session had agreed to establish an electronic working group chaired by Japan and the United States of America, to prepare a discussion paper on histamine as outlined in CX/FFP 14/3312; and its earlier decision to establish an in-session working group (*see* Agenda Item 1).

[13] CX/FFP 14/33/12, CRD 10 (comments from Argentina), CRD 21 (report of the in-session working group on histamine).

110. The Delegation of Japan introduced the report of the in-session working group contained in CRD 21 and outlined the key discussions undertaken by the working group and the key conclusions and recommendations. It was noted that there was a common understanding that histamine formation can easily be controlled by applying GHPs and/or HACCP and that a guidance document on histamine should be considered first. In this regard, the working group proposed that an electronic working group be established to review the existing histamine related guidance in the Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003) and any guidance document used in member countries to decide whether the current Code was sufficient for histamine control guidance and to consider the inclusion of the list of susceptible species contained in Table 2.3. of the Expert Meeting Report. In addition, the Delegation proposed that the electronic working group should consider whether an uncertainty factor was necessary, or whether further advice was needed from FAO and WHO.

111. There was general agreement on further work on the review of control measures for histamine and the consideration of the list of susceptible species. However, on the issue of the uncertainty factor, several delegations were of the view that this should not be included in the terms of reference of the electronic working group at this time. The focus of the work should be on guidance for control of histamine, as proposed by the in-session working group.

112. The Delegation of Senegal noted that other biogenic amines should also be considered and as well as the provision of advice to consumers, rather than the lowering of the safety limit for histamine only.

113. The representative of FAO clarified that the expert meeting had considered other biogenic amines in its work and had concluded that histamine was the major contributor to toxicity; and had made a recommendation on the issue of uncertainty factors

114. Another delegation proposed that the advice should be sought from the Committee on Contaminants in Foods (CCCF) and JECFA as it was unclear what the uncertainty factor should be, its implications for trade and the ability to meet lower limits. It was also pointed out by the Delegation of Mauritania that several stocks of fish were harvested from warm waters, and the lowering of the histamine safety limit could negatively impact the trade of these products and availability of these products to the consumer and also expressed support to provide consumer advice directives.

115. In relation to a proposal to request advice from the CCCF and JECFA, it was noted that a decision on the uncertainty factor was a risk management decision and was within the remit of this Committee and that scientific advice had been received from the FAO/WHO Expert Meeting on the Public Health Risks of Histamine and Other Biogenic Amines from Fish and Fishery Products.

116. Noting that a decision on the uncertainty factor was a risk management decision that should be taken by the Committee and the recommendations from the Joint FAO/WHO Expert Meeting that "*based on a NOAEL of 50 mg, the maximum concentration of histamine in fish that would not cause an adverse effect in healthy populations is 200 mg/kg, but not for certain segments of the population who may have increased sensitivity and that is such cases a lower hazard level may need to be considered, e.g. the use of an uncertainty factor or other specific risk management options such as consumption advisories should be considered*", the Committee agreed to expand the terms of the reference for the electronic working group to include consideration of the uncertainty factor.

117. The Committee therefore agreed to establish an electronic working group, led by Japan and the United States of America, working in English only, with the following terms of reference:

- review existing histamine related guidance in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) and any guidance documents used in member countries to decide whether the current Code is sufficient for histamine control guidance;
- consider inclusion of the susceptible species list contained in Table 2.3 of the Joint FAO/WHO Expert Meeting;
- continue to consider the application of an uncertainty factor and the safety limits for histamine in the standards for fish and fishery products and make recommendations on these limits, and to consider other risk management options, e.g. consumer advice, and whether there was a need for the decomposition limits in the standards; and
- continue to consider appropriate sampling plans for histamine.

DISCUSSION PAPER ON NITROGEN FACTORS (Agenda Item 11)[14]

118. The Committee recalled that during the discussion on the nitrogen factor for South Atlantic hake at its last session it had agreed that a discussion paper to address usefulness of nitrogen factors and the need to review the list of existing nitrogen factors contained in the table of the Standard would be prepared by the United States of America, the United Kingdom and New Zealand.

119. The Delegation of the United States of America introduced CX/FFP 14/33/13 and recommended that the Committee consider further work to refine the draft uniform procedure to determine nitrogen factors; to arrange the format for publishing the list of nitrogen factors; to analyse current nitrogen factor data to determine standard errors, and other relevant statistical information; and to analyse the statistical validity of a single dry nitrogen factor for groups of species.

120. The Committee considered whether the table for nitrogen factors as well as the procedure to obtain data as a basis of nitrogen factors should be housed in some sources outside Codex, such as the website of the UK Royal Society of Chemistry or FAO website, rather than in the Standard.

121. The Representative of FAO said that FAO could disseminate the information through its website and provide a link to relevant references, on the understanding that the task to put together the information based on published papers and to update them as new papers appear would be done by the United States of America or the United Kingdom.

122. The Delegation of the United Kingdom confirmed that the existing table of the average nitrogen factors, including for tilapia and South Atlantic hake will remain as completed work. All future work related to the determination of nitrogen factors will be peer reviewed and published.

123. The Committee generally agreed that the table for nitrogen factors and the uniform procedure to determine nitrogen factors for use with the chemical method should be deleted from Section 7.4 and made available on the FAO or other websites instead. However, the Committee agreed to postpone the decision on further amendments the Section to the next session due to the late delivery and complexity of the document.

Conclusion

124. The Committee agreed that the delegations of the United States of America and the United Kingdom should prepare a proposed amendment to Section 7.4 of the Standard, which explicitly indicates what should be changed from the current version, for further consideration at the next session.

CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS (OPTIONAL FINAL PRODUCT REQUIREMENTS FOR COMMODITIES) (Agenda Item 12)[15]

125. The Committee recalled that its last session had agreed that the Appendices on optional final product requirements for commodities in the Code of Practice for Fish and Fishery products would be circulated for comments on their relevance; if needed, whether the information in the appendices could be integrated into the Code or a relevant standard or retained as appendices to the Code; and proposals for text for the appendices not yet elaborated.

126. Several delegations expressed the view that Codex texts should focus on protecting consumer health and essential quality factors, and not on commercial quality provisions, which should be established between buyers and sellers, and therefore proposed to eliminate the Appendices. One delegation also pointed out that under the TBT Agreement there was no difference between “optional” and other provisions in international standards.

127. Other delegations considered that the Appendices should be retained and completed as they were an important part of the standards, quality provisions are still used in international trade and if they were not retained, trade problems may arise due to the different quality requirements applied in various countries, and such references are useful as references for countries.

128. One delegation agreed in principle with the removal of the appendices, but proposed that relevant information from these appendices should be inserted into appropriate sections of the Code such as the already adopted fish species and product designations of salted fish contained in Appendix VI, which was relevant information for food business operators.

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[14] CX/FFP 14/33/13.

[15] CL 2013/27-FFP, CX/FFP 14/33/14 (comments of Algeria, Egypt, European Union, Japan, Kenya, Norway and Uruguay), CX/FFP 14/33/14 Add.1 (comments of Brazil, Costa Rica and United States of America), CRD 11 (comments from Morocco), CRD 12 (comments of India).

129. The Chair recalled that this question had been discussed for many sessions and that a possible solution was to make these provisions available as an information resource for example on the FAO website, while some provisions addressing essential aspects of the product could be integrated into the Code of Practice, as was the case for some products covered by the code, such as cephalopods.

130. The Representative of FAO indicated that the Committee could consider FAO website as the home for this information, which is mainly required by trade partners. FAO GLOBEFISH website (www.globefish.org) is already disseminating trade related information (e.g. commodity updates, price reports, market research publications) through this website and members of FAO FISHINFO network (network of regional intergovernmental organisations involved in fish technology and trade related information) are involved in providing inputs for the information dissemination. In the case of optional product requirements that could contribute to enhancing market access, GLOBEFISH could host the information. GLOBEFISH website is widely used by fish exporters and importers.

131. Several delegations expressed the view that it was not clear how such trade related information would be elaborated and could be used, and that it was the role of the Committee to ensure harmonisation of quality provisions at the international level.

132. The Committee agreed that the Appendices would not be sent for adoption as part of the Code, and that a Circular Letter would be sent to invite proposals for sections of the already adopted or drafted Appendices (CL 2013/27-FFP) to be integrated into the Code to address only essential safety or quality aspects, for consideration at the next session. It was confirmed that, as agreed at the last session, further work should continue on Appendix I to provide useful information on the correct use of Modified Atmosphere Packaging, and that it would also be included in the Circular Letter.

OTHER BUSINESS AND FUTURE WORK (Agenda Item 13)[16]

133. The Delegation of Colombia proposed that the Committee should consider elaboration of a standard for fresh chilled Pirarucú fillet or whole fish (*Arapaima gigas*). Due to time constraints and the late arrival of the document, the Committee did not consider this matter at this session and agreed that the Delegation of Colombia should prepare a project document for consideration at its next session.

DATE AND PLACE OF NEXT SESSION (Agenda Item 14)

134. The Committee noted that the next Session was tentatively scheduled to be held in approximately 18 months time subject to confirmation by the host Government and the Codex Secretariat.

[16] CRD 18 (proposal for new work from Colombia).

SUMMARY STATUS OF WORK

Subject Matter	**Step**	**Action by**	**Document Reference in REP 14/FFP**
Draft Performance Criteria for Methods for the Determination of Marine Biotoxins (Section I-8.6) in the *Standard for Live and Raw Bivalve Molluscs*	8	Governments 37th CAC	Para. 23, Appendix II
Draft Standard for Fresh and Quick Frozen Raw Scallop Products	8	Governments 37th CAC	Para. 57, Appendix III
Food Additive Provisions in Standards for Fish and Fishery Products	-	Governments 37th CAC	Para. 106 Appendix VI
Proposed Draft Code of Practice for Processing of Fish Sauce	5	Governments 37th CAC	Para. 93 Appendix IV
Proposed Draft Code of Practice on the Processing of Fresh and Quick Frozen Raw Scallop Products	3	Governments Electronic Working Group (Canada) / Physical Working Group (Canada) 34th CCFFP	Para. 61 Appendix V
Proposed Draft Code of Practice for Fish and Fishery Products (section on sturgeon caviar)	2/3	Electronic Working Group / Physical Working Group (Iran) 34th CCFFP	Paras 72-73
Food additive provisions in standards for fish and fishery products	-	Electronic Working Group (EU) 34th CCFFP	Para. 108
Discussion Paper on Histamine	-	Electronic Working Group (Japan and USA) 34th CCFFP	Para. 117
Discussion Paper on Nitrogen Factors (amendments to section 7.4 of the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989)	-	United States of America and United Kingdom 34th CCFFP	Para. 124
Proposed Draft Code of Practice for Fish and Fishery Products (optional final product requirements for commodities / appendix on MAP)	-	Governments 34th CCFFP	Para. 132
New work proposal on a Standard for Fresh Chilled Pirarucú Fillet or Whole Fish	-	Colombia 34th CCFFP	Para. 133

APPENDIX I

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LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES

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APPENDIX II

PROPOSED DRAFT PERFORMANCE CRITERIA FOR METHODS FOR THE DETERMINATION OF MARINE BIOTOXINS IN THE STANDARD FOR LIVE AND RAW BIVALVE MOLLUSCS

(at Step 8 of the procedure)

I-8.6 Determination of Biotoxins

The method selected should be chosen on the basis of practicability and preference should be given to methods which have applicability for routine use.

I-8.6.1 Criteria for Determination of Toxin Analogues by Chemical Methods

Methods shall meet the numerical criteria listed in Table 1 and may either meet the minimum applicable range, or LOD and LOQ criteria listed.

(for information purposes only)

The criteria in Table 1 were calculated in accordance with the procedural manual

1. STX group converted from AOAC 2005.06 (NMKL 182, EN 14526:2004) and AOAC 2011.02 (NMKL 197)
2. OA & AZA groups converted from European Union Reference Laboratory for Marine Biotoxins SOP 2011 (http://aesan.msssi.gob.es/en/CRLMB/web/procedimientos_crlmb/crlmb_standard_operating_procedures.shtml Harmonised-SOP-LCMS-OA-Version4.pdf)
3. DA calculated via method criteria

Table 1. Criteria for Determination of Toxin Analogues by Chemical Methods

Toxin Group	Toxin	Minimum applicable range (mg/kg)	LOD (mg/kg)	LOQ (mg/kg)	Precision (RSD_R)	Recovery percent
STX Group	Saxitoxin (STX)	0.05 - 0.2	0.01	0.02	<=44%	50 - 130%
	(NEO)	0.05 - 0.2	0.01	0.02	<=44%	50 - 130%
	(dcSTX)	0.05 - 0.2	0.01	0.02	<=44%	50 - 130%
	GTX1	0.05 - 0.2	0.01	0.02	<=44%	50 - 130%
	GTX2	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	GTX3	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	GTX4	0.05 - 0.2	0.01	0.02	<=44%	50 - 130%
	GTX5	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	GTX6	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	dcGTX2	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	dcGTX3	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	C1	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	C2	0.1 - 0.5	0.03	0.06	<=38%	50 - 130%
	C3	0.5 - 1.5	0.1	0.2	<=32%	50 - 130%
	C4	0.5 - 1.5	0.1	0.2	<=32%	50 - 130%
OA Group	OA	0.03 - 0.2	0.01	0.02	<=44%	60 -115%
	DTX1	0.03 - 0.2	0.01	0.02	<=44%	60 -115%
	DTX2	0.1 - 0.5	0.03	0.06	<=38%	60 -115%
Domoic Acid	DA	14 - 26	2	4	<=20%	80 -110%
AZA Group	AZA1	0.03 - 0.2	0.01	0.02	<=44%	40 - 120%
	AZA2	0.03 - 0.2	0.01	0.02	<=44%	40 - 120%
	AZA3	0.03 - 0.2	0.01	0.02	<=44%	40 - 120%

Total toxicity is estimated as the sum of the molar concentrations of detected analogs multiplied by the relevant specific toxicity equivalency factors (TEFs). Internationally scientifically validated TEFs must be used. The science behind TEFs is developing. Current internationally validated TEF's can be found on the FAO website. Information on TEFs could be incorporated in this standard at a future date.

Methods should be validated and used for the relevant toxin analogues that may contribute to total toxicity. Currently known toxin analogues to consider are listed in Table 1.

Where toxin analogues that are not listed in Table 1 are determined the competent authority must assess the contribution of these analogs to total toxicity whilst conducting further investigations.

I-8.6.2 Biological and Functional Methods to Determine Paralytic Shellfish Toxicity

AOAC Official Method 959.08 Paralytic Shellfish Poison and other biological or functional assays that perform equally to AOAC 959.08 may be used.

APPENDIX III

DRAFT STANDARD FOR FRESH AND QUICK FROZEN RAW SCALLOP PRODUCTS

(at Step 8 of the Procedure)

1. SCOPE

This standard applies to bivalve species of the *Pectinidae* family in the following product categories:

i) "Fresh or Quick Frozen Scallop Meat", which is the scallop adductor muscle meat.

ii) "Fresh or Quick Frozen Roe-on Scallop Meat", which is the scallop adductor muscle meat and attached roe.

iii) "Quick Frozen Scallop Meat", or "Quick Frozen Roe-on Scallop Meat", with added water and/or solutions of water and phosphates.

Products covered by this Standard may be intended for direct human consumption or for further processing.

This Standard does not apply to:

i) Scallop meat that is formed, mixed with extenders, or bound by fibrinogen or other binders and;

ii) Whole scallops (live, fresh or frozen in which the shell and all viscera are attached). These products are included in the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008).

2. DESCRIPTION

2.1 Product definition

2.1.1 Scallop Meat

Fresh or Quick Frozen "Scallop Meat" is prepared by completely removing the adductor muscle from the shell and completely detaching the viscera and roe from the adductor muscle of live scallops. Scallop meat contains no added water, phosphates or other ingredients. The adductor muscle is presented whole.

2.1.2 Roe-on Scallop Meat

Fresh or Quick Frozen "Roe-on Scallop Meat" are prepared by completely removing the adductor muscle and attached roe from the shell and detaching all other viscera to the extent practical. The roe should remain attached to the adductor muscle. "Roe-on scallop meat" contain no added water, phosphates, or other ingredients. The adductor muscle and roe are presented whole.

2.1.3 Quick Frozen Scallop Meat or Quick Frozen Roe-on Scallop Meat Processed with Added Water and/or with Solution of Water and Phosphates

"Quick frozen Scallop Meat", or "Quick Frozen Roe-on Scallop Meat", with added water and/or solutions of water and phosphates contain the products defined in 2.1.1. and 2.1.2, and a solution of water and/or phosphates and optionally salt.

2.2 Process definition

2.2.1 Scallop Meat and Roe-on-Scallop Meat

After the preparation of "Scallop Meat" or "Roe on Scallop Meat" under good hygiene practices, the products are rinsed, drained and stored with a method that minimizes absorption of water to the extent that is technologically practicable. The fresh product shall be kept at 4°C or below. Product intended to be frozen shall be subjected to a freezing process carried out in appropriate equipment in such a way that the range of temperature of maximum crystallization is passed quickly, in accordance with the requirements of the *Code of Practice for the Processing and Handling of Quick Frozen Foods* (CAC/RCP 8-1976).

The recognized practice of repacking quick frozen products under controlled conditions which will maintain the quality of the product, followed by the reapplication of the quick freezing process as defined, is permitted. These products shall be processed and packaged so as to minimize dehydration and oxidation.

2.2.2 Quick Frozen Scallop Meat or Quick Frozen Roe-on Scallop Meat Processed with Added Water and/or Solution of Water and Phosphates

After the preparation of "Scallop Meat" or "Roe-on Scallop Meat" under good hygiene practices, the product is rinsed, drained and stored with a method that minimizes absorption of water to the extent that is technologically practicable. The fresh product shall be kept at 4°C or below. The product is subject to the addition of water and/or phosphate solution (e.g., soaked, sprayed). The amount of added solution shall be controlled and accurately measured for labelling purposes. The product is subjected to a freezing process carried out in appropriate equipment in such a way that the range of temperature of maximum crystallization is passed quickly, in accordance with the requirements of the *Code of Practice for the Processing and Handling of Quick Frozen Foods* (CAC/RCP 8-1976).

The recognized practice of repacking quick frozen products under controlled conditions which will maintain the quality of the product, followed by the reapplication of the quick freezing process as defined, is permitted. These products shall be processed and packaged so as to minimize dehydration and oxidation.

2.3 Presentation

Any presentation of the product shall be permitted provided that:

- It meets all requirements of this Standard, and it is adequately described on the label to avoid confusing or misleading the consumer.
- The scallop product[1] may be packed by count per unit weight.
- If the scallop product pack exhibits the presence of broken pieces that is > 5% of the sample weight, then the product must be presented as "pieces" or terms to that effect.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Scallop Meat and Roe-on Scallop Meat

The product shall be prepared from sound and wholesome scallops which are of a quality suitable to be sold fresh for direct human consumption.

3.2 Quick Frozen Scallop meat, or Quick Frozen Roe-on Scallop Meat with Added Water and/or Solution of Water and Phosphates

The product shall be prepared from sound and wholesome scallops which are of a quality suitable to be sold quick frozen for direct human consumption.

Added water and/or solution of water and phosphates and salt are permitted to the extent that the water uptake is accurately measured and labelled and their use is acceptable in accordance with the law or custom of the country in which the product is sold. Water shall be of potable quality, phosphates shall be food grade, and salt shall comply with the *Standard for Food Grade Salt* (CODEX STAN 150-1985).

3.3 Glazing

If glazed, the water used for glazing or for preparing glazing solutions shall be potable water[2] or clean water[3].

3.4 Final Product

Products shall meet the requirements of this Standard when lots examined in accordance with section 10 comply with the provisions set out in section 9. Products shall be examined by the methods given in section 8.

4. FOOD ADDITIVES

4.1 Scallop Meat and Roe-on Scallop Meat

No food additives are permitted in the products defined in section 2.1.1 and 2.1.2.

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1 Scallop product refers to all the products covered by the Standard
2 WHO "International Guidelines for Drinking Water Quality."
3 See definition for clean water in the *Code of Practice of Fish and Fishery Products* (CAC/RCP 52-2003).

4.2 Quick Frozen Scallop Meat and Quick Frozen Roe-on Scallop Meat Processed With Phosphates

Humectant / Sequestrant

INS	Additive Name	Maximum Level
338; 339(i)-(iii); 340(i)-(iii); 341(i)-(iii); 342(i),(ii); 343(i)-(iii); 450(i)-(iii),(v)-(vii); 451(i),(ii); 452(i)-(v); 542	Phosphates	2200 mg/kg as phosphorus

5. CONTAMINANTS

5.1 The product covered by this Standard shall comply with the Maximum Levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CODEX/STAN 193-1995) and the maximum residue limits for veterinary drugs established by the CAC.

5.2 The product shall not contain marine biotoxins exceeding the levels set out in section I-5.2 of the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008) and as sampled and analysed in accordance with the same Standard.

(i) Scallop Meat – When prepared in accordance with the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) – section "X"[4], marine biotoxins are not reasonably likely to present a hazard in "Scallop Meat". While the hazard analysis will consider marine biotoxins as a potential hazard, this hazard will be excluded or included based upon the species and the available data for toxins in that species.

(ii) Roe-on Scallop Meat – Marine biotoxins could present a possible hazard in "Roe-on Scallop Meat" and preventive measures should be in place in accordance with the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008).

6. HYGIENE AND HANDLING

6.1 It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of *General Principles of Food Hygiene* (CAC/RCP 1-1969) and other relevant Codex texts such as:

(i) the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003)*;*

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

(iii) *Guidelines on the Application of General Principles of Food Hygiene to the Control of Viruses in Food* (CAC/GL 79-2012);

(iv) *Guidelines on the Application of General Principles of Food Hygiene to the Control of Pathogenic Vibrio Species in Seafood* (CAC/GL 73-2010).

6.2 The products should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods* (CAC/GL 21-1997).

7. LABELLING

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

7.1 Name of the Food

The products defined in 2.1.1, 2.1.2 and 2.1.3 shall be named in accordance with the law or custom of the country in which the product is sold. For products covered by 2.1.3, "added water" shall be part of the name of the product.

[4] Under elaboration

7.2 In addition to the name identified in 7.1, the product shall be identified by common and/or scientific names as determined by the competent authority. The country where the product is sold can determine if the scientific name must be indicated on the label.

7.3 There shall appear on the label, reference to the forms of presentation described in section 2.3, in close proximity to the name of the product in such descriptive terms that will adequately and fully describe the nature of the presentation to avoid misleading or confusing the consumer.

7.4 Water added as an ingredient to scallop products shall be declared in the list of ingredients[5] and the percentage of scallop meat and/or the percentage of added water shall clearly appear on the label, in accordance with the law and custom in the country in which the product is sold.

7.5 Net Contents (Glazed Products)

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

7.6 Storage Instructions

The label should include terms to indicate that the product shall be stored at 4°C or below for fresh products and at a temperature of -18°C or below for frozen product processed in accordance with subsection 2.2 of this Standard.

7.7 Labelling of Non-Retail Containers

Information specified above shall be given either on the container or in accompanying documents, except the name of the food, lot identification, and the name and address of the producer or the packer as well as storage instructions shall always appear on the container.

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

The product shall be identified by common and/or scientific names as determined by the competent authority. The country where the product is sold can determine if the scientific name must be indicated on the label.

8. SAMPLING, EXAMINATION AND ANALYSIS

8.1 Sampling

To be developed.

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 procedures elaborated in section 8.3 through 8.7 and in the Annexes, and in accordance with the *Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories* (CAC/GL 31-1999).

8.3 Determination of pieces

A scallop meat shall be considered as a scallop piece when the weight of that scallop meat is less than 50% of the average weight of 10 randomly selected unbroken scallop meats contained in the package. The percentage of scallop pieces in the sample unit can be determined by using the following equation:

$$\% \text{ Scallop Pieces} = \frac{\Sigma \text{ Weight of scallop pieces in a sample unit} \times 100}{\text{Weight of sample unit}}$$

8.4 Determination of count

When declared on the label, the count of the scallop meat shall be determined by counting the numbers of whole scallop meat (not including pieces defined above) in the package or representative sample thereof and dividing the count of whole scallop meat by the adjusted de-glazed weight (actual deglazed weight subtract the weight of de-glazed pieces) to determine the count per unit weight.

[5] As prescribed in section 4.2.1.5 and 5.1.2 in the *General Standard for the Labelling of Prepackaged Foods* (CODEX STAN 1-1985)

8.5 Determination of Net Weight

(i) The net weight shall be determined in accordance with Official method AOAC 963.18.

(ii) Block frozen products: AOAC Official Method 967.13 Drained Weight of Frozen Shrimp or Crab Meat, or AOAC Official Method 970.60 Drained Weight of Frozen Crab Meat. In addition to either AOAC procedure, block frozen scallops shall be thawed inside waterproof bags to prevent contact with, and absorption of, the water used to thaw the product.

8.6 Examination for Parasites

The presence of readily visible parasites in a sample unit detected by normal visual inspection of the scallops.

8.7 Determination of the presence of viscera and roe

Scallop products are examined for the presence of remaining viscera attached to the adductor muscle or loose in the package and remaining roe (Scallop Meat only).

8.8 Determination of added water

In order to verify the conformity with subsections 3.1 and 3.2, a country may establish a scientifically supported criterion for the natural level of moisture in the meat scallop species harvested. Where a country has relevant scientific information on the characteristics of the scallop species it exports, it may approach an importing country to discuss the implementation of this criterion on a species by species basis.

9. DEFINITION OF DEFECTIVES

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

9.1 Deep Dehydration

Greater than 10% of the weight of the scallop meat 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 a sharp instrument without unduly affecting the appearance of the product.

9.2 Foreign matter

The presence in the sample unit of any matter which has not been derived from scallops, 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

9.3 Odour/Flavour/Texture/Colour

Scallop meat affected by persistent and distinct objectionable odours, flavours, texture or colours indicative of decomposition and/or rancidity; or other objectionable odours, flavours, textures and colours not characteristic of the product.

9.4 Parasites

The presence of parasites at an objectionable level.

9.5 Objectionable matter

The presence of sand, shell or other similar particles that is visible in the thawed state or detected by chewing during sensory examination at an objectionable level

9.6 Exceeding level of added water

Level of added water exceeding that declared in the label.

10. 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 9 does not exceed the acceptance number (c) of the appropriate sampling plan in Section 8.1.

(ii) where appropriate, the total number of sample units not meeting the count designation or presentation as defined in section 2.3 does not exceed the acceptance number (c) of the

appropriate sampling plan in the section 8.1. In addition, the average count per unit weight shall be within the declared count range;

(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; and

(iv) the essential composition and quality factors, food additives, contaminants, hygiene and handling and labelling requirements of sections 3, 4, 5, 6 and 7 are met.

ANNEX A

SENSORY AND PHYSICAL EXAMINATION

Complete net weight determination, according to defined procedures in section 8.5.

Examine the frozen scallop product in the sample unit or the surface of the block for the presence of dehydration. Determine the percentage of scallop meat or surface area affected.

Thaw using the procedure described in section 8.5 and individually examine each scallop product in the sample unit for the presence of foreign matter, objectionable matter, and presentation defects.

Determine the weight of scallop product affected by presentation defects.

Examine product for pieces and count declarations in accordance with procedures in sections 8.3 and 8.4.

Assess the scallop product for odour and parasites as required.

A small portion of the sample unit (100 g to 200 g) is cooked without delay and the odour/flavour/texture and presence of sand is determined. If necessary, additional portions may be cooked and examined for confirmation.

APPENDIX IV

PROPOSED DRAFT CODE OF PRACTICE FOR PROCESSING OF FISH SAUCE

(at Step 5 of the Procedure)

This *Code of practice for processing of fish sauce* has been developed primarily to be used as a guideline to improve the processing practices of fish sauce to meet international requirements. The application of GMP, HACCP and DAP for this traditional product should be promoted to ensure consumer health and safety as well as fish sauce quality. Fish sauce is a translucent and not turbid liquid product with salty taste and fish flavour obtained from the fermentation of a mixture of fish and salt at an appropriate ratio. In general, the size of fish used as raw material in fish sauce processing is small, not greater than 12 cm in length. Traditional fish sauce fermentation relies on endogenous enzymes and indigenous bacteria of raw materials. For non-traditional fermentation other ingredients or processing aids may be added to assist the fermentation process. Salt is an essential ingredient in fish sauce production in order to control the types of microorganisms and prevent defective fermentation. The quality characteristics of colour, clarity, aroma (odour) and taste are used to determine the end of the fermentation process.

General considerations of hazards and defects

Hazards

Fish sauce is the product obtained from the fermentation of a mixture of fish and salt. The raw material used in the fermentation to make fish sauce could be both freshwater and marine fish such as mackerel, sardines or anchovies. Anchovies are one of the fish type most preferably used to make high quality fish sauce with the characteristic aroma and reddish brown colour. However, the use of those mentioned marine fish might pose a risk of histamine. Some marine fish might be contaminated by bacteria, especially *Clostridium botulinum*, which depend on their type, size and harvest area. Pelagic and small marine fish would have a slight chance of contamination. In fish sauce producing process, it is therefore necessary to have Code of Practices for controlling raw material quality on the harvest vessel in compliance with Section 3 and 4 of Code of Practice for Fish and Fishery Products in place.

Harvest vessel quality control of fish could be achieved either by controlling fish temperature or by delaying fish decomposition. Practically, salt is commonly used to maintain fish quality and freshness for delaying the decomposition after the harvest rather than temperature control. The reason is if the fish temperature is too low, the salt will be slowly absorbed and resulted in the extension of fermentation period.

In fish sauce processing, a large amount of salt are used. Fish sauce therefore has the salt content higher than 20% (Water Phase Salt > 10%) which could inhibit and delay the growth of bacteria.

Defects

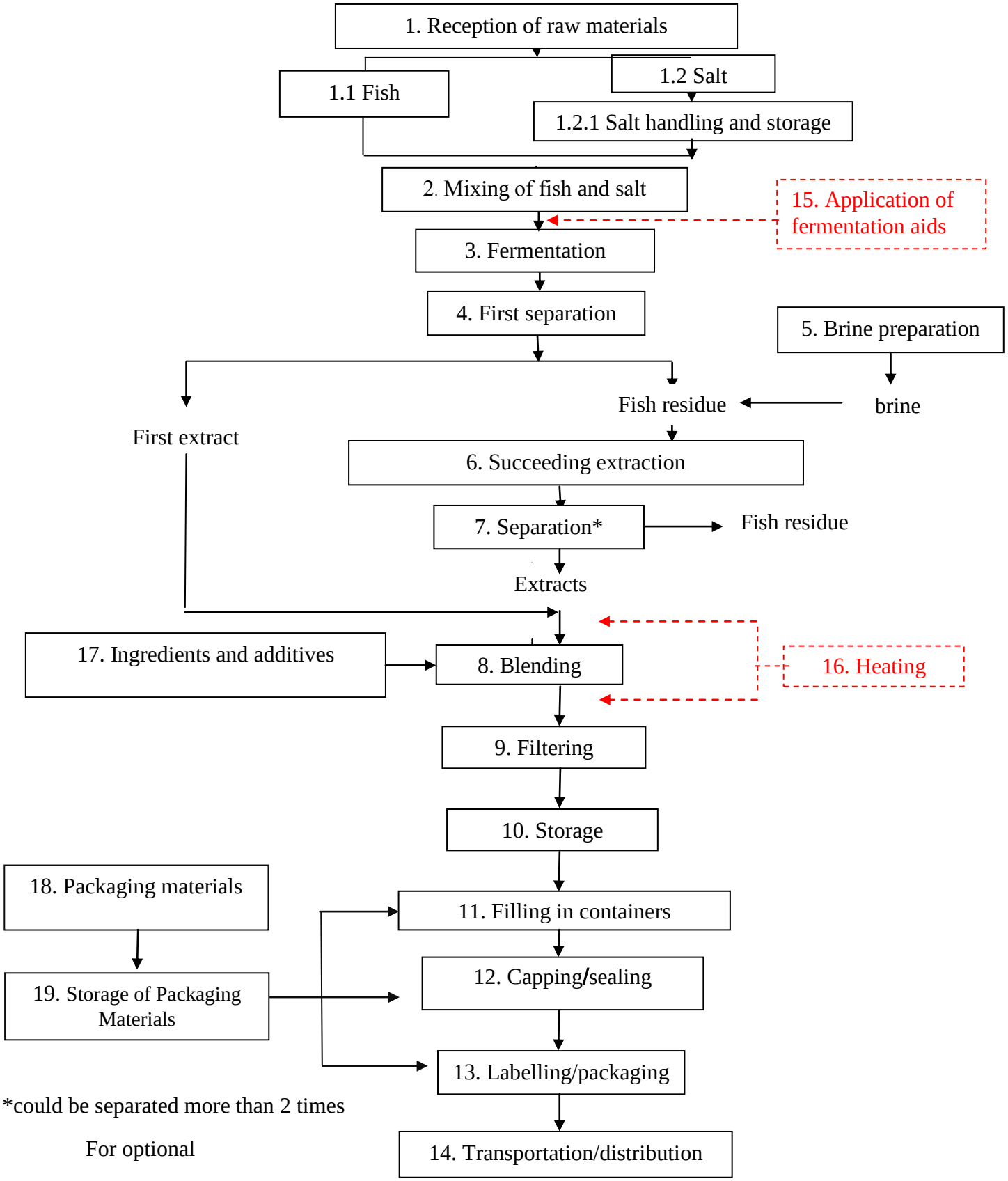
Odour and taste of fish sauce depend on the free amino acid generated from fermentation process. The level of free amino acid varies according to type of fish used in the fermentation, ratio of fish to salt and appropriate fermentation time. Hence, the controls of these factors are necessary in order to obtain fish sauce products with desirable odour and taste.

This Code will address the general processing steps and technical guidance to be employed by fish sauce manufacturers which could vary from country to country. Potential hazards and defects at each processing step starting from reception of raw material and ending with final product distribution will also be identified. In addition, each processing step will include technical guidance for controlling the identified hazards and defects that help ensure consumer safety and product quality.

Example of a flow chart of fish sauce processing

This flow chart is for illustrative purpose only. For in-factory implementation of HACCP principles. A complete and comprehensive flow chart has to be drawn up for each product.

References correspond to relevant Sections of the Code.



*could be separated more than 2 times

For optional

1. Reception of raw materials

1.1 Fish

Potential hazards: histamine, microbiological contamination biotoxins, chemical contamination (including pesticides), physical contamination, heavy metals

Potential defects: decomposition, foreign matter

Technical Guidance:

- For fish or parts of fish, raw materials specifications could include the following characteristics:
  - As appropriate, harvest vessel, transportation and storage records documenting that the fish were rapidly chilled and maintained at 4 ° C or below;
  - As appropriate, harvest vessel and transportation records documenting that the fish were adequately salted to achieve the target water activity within the target time;
  - organoleptic characteristics, such as appearance, odour, texture;
  - chemical indicators of decomposition and/or contamination, for example, total volatile basic-nitrogen (TVBN), histamine, heavy metals, pesticide residues, nitrates;
  - microbiological criteria (to prevent the processing of raw material containing microbiological toxins) for fish with risk;
  - veterinary drug residues (when the raw fish material is from aquaculture);
  - foreign matter.
- Skills should be acquired by fish handlers and appropriate personnel in sensory evaluation techniques to ensure that raw fish meet essential quality provisions of the appropriate Codex Standard and sorting of fish species that pose a risk of biotoxins such as ciguatoxin in large carnivorous tropical and subtropical reef fish.
- Fish greater than 12 cm in length that required gutting on arrival at the processing facility should be gutted efficiently, without undue delay and with care to avoid contamination.
  - Gutting is considered complete when the intestinal tract and internal organs have been removed.
  - Clean seawater should be used.
- Fish should be rejected if it is known to contain harmful, decomposed or extraneous substances unable to be reduced or eliminated to an acceptable level by normal procedures of sorting or preparation.
- Information about the harvesting area should be recorded.

1.2 Salt requirements

Potential hazards: chemical and physical contamination

Potential defects: incorrect composition

Technical guidance:

- Salt used should be food grade as indicated in the *Standard for Food Grade Salt* (CODEX STAN 150-1985).
- The composition of salt differs according to the origin. Mine salt and solar salt of marine origin contain several other salts such as calcium sulphate, magnesium sulphate and chloride as impurities. Solar salt may be stored at least 2 months before using to obtain a good taste of fish sauce.
- Salt used should be inspected to ensure that it is clean, not used before, free from foreign matter and foreign crystals, and shows no visible sign of contamination with dirt, oil, bilge or other extraneous materials.
- The size of the salt granules used should be carefully considered. Medium size salt crystal should used. Use clean salt without contaminants. If small size salt is used, the outer skin of fish

will rapidly loose moisture and salt burn can occur which will prevent salt penetration into the fish. Consequently, inner of fish can be spoiled. In case of too large salt crystal, it can slowly penetrate, thus fish might be spoiled before preservation effect of salt occurs.

1.2.1 Salt handling and storage

Potential hazards: chemical and physical contamination

Potential defects: unlikely

Technical guidance:

- Salt should be transported and stored dry and hygienically covered in salt bins, storerooms, containers or in plastic sacks.

2. Mixing of fish and salt

Potential hazards: histamine, microbiological contamination (*Clostridium botulinum* and *Staphylococcus aureus* toxins), metal fragments

Potential defects: decomposition, physical contamination

Technical Guidance:

- Fish and salt should be mixed thoroughly by trained personal or machines to ensure the proper contact of salt to fish so as to prevent the growth of pathogens and decomposition during fermentation.
- All the apparatus used to mix fish and salt should be easily cleanable, rust-free and resistant to salt. Mechanical mixers should not introduce unapproved substances, or metal fragments.
- In order to prevent spoilage and growth of pathogenic bacteria, the concentration of salt should not be less than 20% by weight. The common ratios of fish to salt by weight are 3:1, 5:2 and 3:2.
- Fish should attain 10 percent water phase salt, or water activity below 0.85, within 24 hours of mixing, as measured in the centres of the largest fish.
- Salt burn should be avoided by using right type of salt.

3. Fermenting

Potential hazards: physical and chemical contamination

Potential defects: undesirable odour and taste

Technical Guidance:

- Care should be taken to ensure the cleanliness of the fermentation area and tanks. Fermenting tanks should be made from non-hazardous material and be able to prevent product contamination.
- Fermentation period should range from 6-18 months to achieve good quality of fish sauce from natural fermentation in a tropical zone. When fermentation aids are used, the period can be varied.

4. First separation

Potential hazards: unlikely

Potential defects: incorrect separation (e.g. objectionable matter, turbidity)

Technical Guidance:

- All utensils should be clean
- Liquid and solid (fish residue) should be completely separated.
- First extract (liquid) should be translucent solution

5. Brine preparation

Potential hazards: unlikely

Potential defects: undesirable odour and taste

Technical Guidance:

- Brine, preferably saturated, added to fish residues should be prepared from potable water and food grade salt for succeeding extraction.

6. Succeeding extraction

Potential hazards: unlikely

Potential defects: undesirable odour and taste

Technical Guidance:

- Succeeding brine extraction of the fish residues could be carried on as long as desirable extracts are obtained.

7. Separation

Refer to Step 4: First Separation

8. Blending

Potential hazards: microbiological contamination

Potential defects: Ingredient measurement errors, unauthorized food additives

Technical Guidance:

- Total Nitrogen (TN) of fermentation extract batches should be analyzed before blending. Total nitrogen and amino acid nitrogen content in the final product must be in compliance with the *Standard for Fish Sauce* (CODEX STAN 302-2011).
- To achieve good quality fish sauce, ingredients should meet the required characteristics and appropriated concentrations.
- All utensils should be clean.
- Food additives and levels used need to be in compliance with the *Standard for Fish Sauce* (CODEX STAN 302-2011).Food additives used need to be identified with names and identification numbers which comply to *Class Names and the International Numbering System for Food Additives* (CAC/GL 36-1989).
- Before mixing, chemical properties, essential quality factors should be monitored, and the results should be recorded.

9. Filtering

Potential hazards: chemical contamination from a cleaning or disinfection agent

Potential defects: foreign matter and turbidity

Technical Guidance:

- Filtering system should be cleaned and kept in an appropriate environment to prevent contamination.
- An appropriate filtering system should be checked regularly.

10. Storage

Potential hazards: physical and chemical contamination

Potential defects: unlikely

Technical Guidance:

- The storage tanks with lid should be clean, resistant to rust and salt, located in an appropriated area.
- The product should be stored properly and kept from any source of contamination.
- The batches, or lots, in storage should be identified for trace back purposes.

11. Filling in containers

Potential hazards: residual chemical cleaning agent, physical contamination such as glass fragments.

Potential defects: foreign matter, incorrect volume, defective and unclean bottles and containers

Technical Guidance:

- Containers should be randomly and regularly checked for defects and cleanliness.
- Filling machines should be kept clean to prevent contamination.
- Defective containers should not be used.
- The containers should be made with material that is high salt content resistant and will not release any harmful substances for human health.

12. Capping

Potential hazards: unlikely

Potential defects: loose plastic matter, broken caps, foreign matter

Technical Guidance:

- Caps should be checked before capping.
- After capping foreign matter should be checked.

13. Labelling/packaging

Potential hazards: unlikely

Potential defects: incorrect labelling

Technical Guidance:

- Refer to Sections 8.2.3

14. Transportation/distribution

Potential hazards: unlikely

Potential defects: contaminated and damaged containers and cartons

Technical Guidance:

- Cartons should be clean, dry, durable and suitable for the intended use.
- Cartons should be handled with care to avoid the damage of containers.
- Also refer to Section 17.4

15. Application of fermentation aids

Potential hazards: microbiological contamination

Potential defects: unlikely

Technical Guidance:

- Fermentation aids should be stored at appropriate temperature in order to avoid deactivation of fermentation aids.
- When enzymes and bacterial cultures are used as fermentation aids they should be handled to minimize the microbiological contamination.

16. Heating

Potential hazards: microbiological contamination

Potential defects: over heating

Technical Guidance:

- Adequate temperature and time combination should be applied.

- The temperature and heating time should be monitored and recorded.

17. Ingredients and additives

Potential hazards: chemical, physical and microbiological contamination

Potential defects: depends on ingredient

Technical guidance:

- Ingredients and additives should be stored appropriately in terms of temperature and humidity.
- Ingredients and additives should be stored in a dry and clean place under hygienic conditions.
- Ingredients and additives should be properly protected and segregated to prevent cross-contamination.
- Defective ingredients and additives should not be used.

18. Packaging materials

Potential hazards: chemical and physical contamination

Potential defects: unlikely

Technical guidance:

- Labels should be verified to ensure that all information declared meets, where applicable, the *General Standard for the Labelling of Prepackaged Foods* (CODEX STAN 1-1985) and labelling provisions of the *Standard for Fish Sauce* (CODEX STAN 302-2011) and/or other relevant national legislative requirements.
- Packaging materials should be examined to ensure that they are intact and not contaminated.

19. Storage of packaging materials

Potential hazards: chemical and physical contamination

Potential defects: unlikely

Technical guidance:

- Packaging materials should be stored in a dry and clean place under hygienic conditions.
- Packaging materials should be properly protected and segregated to prevent cross-contamination.
- Defective ingredients and packaging materials should not be used.

APPENDIX V

PROPOSED DRAFT CODE OF PRACTICE ON THE PROCESSING OF FRESH AND QUICK FROZEN RAW SCALLOP PRODUCTS

(At Step 3 of the Procedure)

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X.3.1.7 Chilled Storage

X.3.2 Processing Establishment Operations

X.3.2.1 Scallop Reception

X.3.2.2 Washing Whole Scallops

X.3.2.3 Shucking

X.3.2.4 Washing

X.3.2.5 Chilled Storage

X.3.2.6 Addition of a Solution of Water and Phosphate

X.3.2.7 Addition of Water as an Ingredient

X.3.2.8 Size Grading and Examination

X.3.2.9 Freezing Process

X.3.2.10 Glazing

X.3.2.11 Weighing

X.3.2.12 Packaging

X.3.2.13 Labelling

X.3.2.14 Frozen Storage

SECTION 2 DEFINITIONS

For the purpose of this Code:

Refrigerated Sea Water is sea water in fixed tanks chilled by mechanical refrigeration.

Roe-on Scallop Meat Fresh or quick frozen raw scallop adductor meat with the attached roe prepared by completely removing the adductor muscle and attached roe from the shell and detaching all other viscera to the extent practical. The roe should remain attached to the adductor muscle. Roe-on scallop meat contains no added water, phosphates, or other ingredients. The adductor muscle with roe is presented whole.

Scallop Meat Fresh or quick frozen raw scallop adductor meat prepared by completely removing the adductor muscle from the shell and completely detaching the viscera and roe from the adductor muscle of

live scallops. Scallop meat contains no added water, phosphates or other ingredients. The adductor muscle is presented whole.

Quick Frozen Scallop Meat or Quick Frozen Roe-on Scallop Meat with Added Water and/or a Solution of Water and Phosphate

is the quick frozen scallop meat or quick frozen roe-on scallop meat with added water and/or with added solution of water and phosphate. These products may also contain salt.

Scallop Products refers to all the scallop products identified above.

Shucking is the process of removing the Scallop Meat or Roe-on Scallop meat from the live whole scallops.

For the purpose of this code, is comprised of all the internal organs excluding the roe.

Roe is the scallop gonad containing the ovary and testis.

SECTION X PROCESSING OF FRESH AND QUICK FROZEN RAW SCALLOP PRODUCTS

This section provides examples of potential hazards and defects and describes technological guidelines, which can be used to develop control measures and corrective actions. At a particular step, only the hazards and defects which are likely to be introduced or controlled at that step are listed. It should be recognized that in preparing a Hazard Analysis and Critical Control Point **(**HACCP**)** and/or Defect Action Point **(**DAP**)** plan it is essential to consult Section 5 which provides guidance for the application of the principles of the HACCP and DAP analysis. However, within the scope of this Code of Practice it is not possible to give details of critical limits, monitoring, record keeping and verification for each of the steps since these are specific to particular hazards and defects and to the control measures used.

As stressed by this Code, the application of appropriate elements of the pre-requisite program (Section 3) and HACCP principles (Section 5) at these steps will provide the processor with reasonable assurance that the essential quality, composition and labelling provisions of the Draft Standard for Raw, Fresh and Quick Frozen Scallop Products (under development) will be maintained and food safety issues controlled.

The commercial harvest practices of scallops can be quite variable. For instance, shucking can occur on board scallop vessels equipped for such operations or in on-shore processing facilities. For long fishing voyages, scallops are shucked and washed on deck in totes with fresh saltwater or a fresh saltwater and ice solution, then drained, bagged and stored below deck with freshwater ice. The exposure time to water during washing and melting ice during storage can affect both the product quality and composition. For the product to meet international and/or regulatory standards aimed to prevent consumer fraud and unfair trade practices, scallopers and processors should have controls in place that prevent addition of freshwater to the product to the extent attainable and practical, using proper equipment and handling practices.

This Code covers the preparation and handling of fresh Scallop Meat and Roe-on Scallop Meat on board long haul harvesting vessels. It also covers the preparation and handling at the processing establishment of fresh Scallop Meat or Roe-on Scallop Meat (without added water or phosphate solution) and Quick Frozen Scallop Meat or Quick Frozen Roe-on Scallop meat with or without added water and/or a solution of water and phosphate. This code also addresses the control of unintentional and intentional addition of freshwater during processing and the addition of a solution of water and phosphate to enhance water retention. The example of the flow diagram (Figure X.1) will illustrate some of the common steps involved in the processing of scallop products

X.1 GENERAL ADDITION TO PRE-REQUISITE PROGRAMME

Section 3 - Pre-requisite programme gives the minimum requirements for good hygienic practices for a harvesting vessel and processing establishment prior to the application of hazard and defect analysis. In addition to the guidelines described in Section 3, the following should also be considered:

- Material used to contain shucked scallops on ice should be clean, sanitary and in good repair
- When scallops are shucked they should be thoroughly rinsed with clean sea water or salt water made from potable water to minimize sand, shell, detritus and foreign material in the finished product.
- Sea water used for onboard washing and pre-chilling should be from clean areas and not be contaminated by the water pumping system or improper location of the water intake.

X.2 IDENTIFICATION OF HAZARDS AND DEFECTS

Refer also to Section 5.3.3 Conduct Hazard and Defect Analysis.

X.2.1 Hazards

Refer also to Section 5.3.3.1 Identification of Hazards and Defects. When marketing scallop products, all products should meet the contaminants and relevant hygienic provisions outlined in the *Standard for Fresh and Quick Frozen Raw Scallop Products.* Where marketing of roe-on scallop meat is concerned, this product should meet the contaminants and relevant hygienic provisions outlined in the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008).

This section describes the main hazards and defects specific to scallop products

X.2.1.1 Marine Biotoxins

Marine biotoxins such as paralytic shellfish poisoning (PSP), amnesic shellfish poisoning (ASP) and diarrhetic shellfish poisoning (DSP) are not reasonably likely to present a hazard in properly processed commercial scallop adductor muscle meat. Scientific data has shown that when present, PSP, ASP and DSP toxins are concentrated in the viscera. [During periods of high toxicity, toxins can accumulate at a hazardous level in roe-on scallops and preventive measures should be in place in accordance with the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008).] Biotoxins may also migrate into the adductor muscle (meat) if the viscera and roe are not removed while the scallop is alive. Scientific information is still limited for toxins in some scallop species therefore the hazard analysis will need to consider marine biotoxins in scallop meat as a potential hazard. This hazard will be excluded or included based upon the species, processing methods, and the available country specific scientific evidence data for toxins in that species.

During shucking to produce Scallop Meat, incomplete removal of the viscera and roe could occur and may introduce biotoxin and pathogen health hazards associated with whole bivalves.

X.2.2 Defects

X.2.2.1 Parasites

Parasites are known to affect the respiratory system, organs and the connective tissue of organs (i.e. *Perkinsus* spp.) in bivalve molluscs. *Sulcascaris sulcata*, a nematode, has been known to parasitize the adductor muscle of scallops; however, this species matures in cold blooded marine turtles and is not considered a hazard to humans. Nevertheless, the infestation of parasites in scallops or the presence of cysts can be aesthetically offensive to consumers.

X.2.2.2 Objectionable and Foreign Matter

Sand, silt, detritus and foreign matter may accompany harvested scallops from the natural environment to shipboard. If not properly rinsed away, sand and silt may become embedded between the fibers of the adductor muscle, commonly associated with muscle contraction at time of death. Excessive amounts of foreign matter could result in undesirable physical attributes in the final product that would be objectionable to consumers, such as the grinding of teeth on sand and silt while chewing.

X.2.2.3 Excess Water Uptake

It has been shown that freshwater in contact with scallop adductor muscle meat will increase its moisture content over time. Scallop adductor muscle can uptake and retain added water through several physical and chemical mechanisms exhibiting various degrees of water binding strength. The scallop adductor muscle meat should not be in contact with fresh water, including melting fresh water ice, for an amount of time greater than that required for preparation and processing otherwise the product will absorb excess water, which may be construed as an unfair trade practice or consumer fraud. Proper processing controls should be in place by the processor in order to avoid or limit any water uptake to that which is technologically avoidable.

In the case of quick frozen scallop meat or quick frozen roe-on scallop meat products processed with a solution of water and phosphate, or added water alone, proper processing controls should be in place to ensure that the amount of water added is consistent with the water declaration on the label (to avoid unfair trade practice or consumer fraud).

The use of a solution of water and phosphate is only permitted in quick frozen scallop products. Phosphates are to be applied in conformity with section 3 of the *General Standard for Food Additives* (CODEX STAN 192-1995).

This flow chart is for illustrative purposes only. For in-factory HACCP implementation a complete and comprehensive flow chart has to be drawn up for each process.

[Figure X.1]

X.3 PROCESSING OPERATIONS

X.3.1 Long Haul Harvesting Vessel Operations

Scallop fishing may be either short haul or long haul and is differentiated by the time at sea and the distance of the fishing ground from the land based processing establishment. “Short haul voyages” are typically 1 - 2 days in the case of inshore wild caught fisheries and daily as in the case of aquaculture-controlled harvest. “Long haul offshore voyages” are typically up to 15 days, thus the scallops are shucked, washed, pre-chilled, drained and bagged on deck, then stored in iced or refrigerated storage below deck until the scallop vessel has landed on shore. This section is designed to augment the handling and processing of fresh Scallop Meat and Roe-on Scallop Meat on board long haul harvesting vessels. After landing, additional processing steps are generally done in the processing facilities.

X.3.1.1 Scallop Landing/Deck Dump (Processing Step 1)

Potential Hazards: *Marine biotoxins*

Potential Defects: *Dead scallops*

Technical Guidance:

- Live scallops should be collected and placed in clean storage containers without undue delay and with care to avoid contamination.
- Rough handling of live scallops should be avoided to minimize stress and injury which could lead to the death of scallops prior to processing.
- [Preventive measures such as on-board biotoxin screening methods should be used when the intent is to produce scallop meat for which marine biotoxins cannot be excluded as a hazard.]

X.3.1.2 Washing Whole Scallops (Processing Step 2)

Potential hazards: *Microbiological contamination; chemical and physical contamination*

Potential defects: *Unlikely*

Technical Guidance:

- The surface of the shells should be washed free of mud, detritus and sand.
- Scallops having formed clumps should be de-clumped.
- Washing should be carried out using pressurized clean sea water or salt water made from potable water.

X.3.1.3 Shucking (Processing Step 3)

Potential Hazards: *Marine biotoxins in viscera and roe; microbiological contamination*

Potential Defects: *Remaining viscera; remaining roe (in the case of Scallop Meat); dead scallops*

Technical Guidance:

- Live scallops should be shucked as soon as possible.
- [Dead scallops observed during shucking should be discarded because once a scallop dies biotoxins, if present in the viscera and roe, can migrate into the meat. In addition, the quality of the meat and roe in dead whole scallops may be unacceptable because the time of death is unknown.]
- Removal of the viscera and roe in live freshly harvested scallops prevents the migration of biotoxins, if present, into the adductor muscle (meat).
- For Scallop Meat, care should be taken to ensure that the viscera and roe are completely removed.
- For Roe-on Scallop Meat, care should be taken to ensure that the viscera is removed. If biotoxins are present in the viscera, control measures should be in place to ensure the roe-on scallops are safe for human consumption (i.e. further sampling of the roe).
- Care should be taken to insure that shucking tables, containers, and knives are properly cleaned and sanitized.

- The shucked scallops should proceed immediately to the next steps to minimize their exposure to ambient temperatures above 4 °C.

X.3.1.4 Washing (Processing Step 4)

Potential Hazards: *Shell fragments*

Potential Defects: *Objectionable matter; foreign matter; excess water uptake*

Technical Guidance:

- Clean sea water or potable salt water should be used to wash scallops after shucking to remove any objectionable matter such as remains of viscera, shell fragments, sand, and foreign matter such as debris.
- Scallops should be gently agitated to allow separation from each other and to ensure the removal of objectionable and foreign matter.
- If salt water other than sea water is used it should be prepared from potable water and 3% of food grade salt to minimize the uptake of moisture. The salinity of the salt water should be monitored.
- If potable fresh water is used, the washing/showering method should be clearly defined and the contact between the water and scallops limited to minimize water uptake to that which is technologically unavoidable.
- The washing schedule (contact time parameters) should be carefully monitored.
- The washed scallops should be adequately drained.
- After washing, the scallops should be immediately processed or refrigerated or iced and kept at the adequate temperature (temperature of melting ice).

X.3.1.5 Pre-chilling (Processing Step 5)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Excess water uptake (applies to pre-chilling using freshwater); decomposition*

Technical Guidance:

- Pre-chilling of the scallop**s** should be employed to reduce the core temperature prior to being placed in chilled storage. This step can minimize the amount of ice melt and consequently freshwater contact with the scallop**s** during chilled storage. Rapid chilling will also minimize subsequent drip loss.
- Pre-chilling should include the immersion of the scallops in refrigerated or iced sea water.
- If freshwater ice is used in conjunction with clean sea water, the contact time for each batch should be kept as short as practical to limit any excessive uptake of water beyond which is technologically unavoidable.
- Water used for pre-chilling should be periodically replaced to minimize the bacterial load and ensure functional water temperature e.g., ≤ 0 °C or ≤ 32 °F).

X.3.1.6 Packing (Processing Steps 6, 23, 24)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Damaged scallops*

Also refer to Section 8.5.1 Reception – Packaging, Labels & Ingredients; Section 8.5.2 Storage - Packaging, Labels & Ingredients and Section 8.4.4 Wrapping and Packing~~,~~**.**

Technical Guidance:

- After the scallops are packed in clean containers made of a suitable material appropriate to be in contact with food, a tag or other appropriate identification should be attached to each container to determine the date of harvest and other relevant product information.
- The container should not be too large, should be appropriately filled and not over-stacked in order to facilitate cool air circulation and to prevent scallops from being damaged.
- The scallops should be kept in a clean condition.

X.3.1.7 Chilled Storage (Processing Step 7)

Potential Hazards: Microbiological contamination

Potential Defects: Decomposition; excess water uptake; physical damage

Also refer to Section 8.1.2 – Chilled Storage

Technical Guidance:

- The containers of scallops should be surrounded by sufficient finely divided ice.
- The chilled storage or storage containers should be adequately drained so that freshwater from the melted ice does not stay in contact with the product near the bottom layer.
- Where ice is used, stored scallops should be examined regularly to ensure sufficient ice cover of the product.
- Temperatures should be monitored to ensure that the stored scallops remain at a temperature of melting ice.
- Containers should be appropriately stacked to facilitate the circulation of cold air and prevent scallop damage.
- The duration of long haul voyages should be limited to the number of days that will assure that at the time of off-loading at shore, the remaining shelf life for all the scallops harvested is adequate.
- Prior to offloading, product and storage information (e.g. dates of harvest in relation to onboard chilled storage locations, etc.) should be considered to facilitate proper utilization of the scallops.
- If the container used to store scallops is not impermeable, it should be necessary to include measures that avoid or limit water uptake to that which is technologically unavoidable (i.e. shorter trips, impervious film between ice and the container).

X.3.2 Processing Establishment Operations

This section is designed to augment section 7.6 with additional information on the processing, at the processing establishment, of fresh Scallop Meat or Roe-on Scallop meat without added water and quick frozen Scallop Meat or quick frozen Roe-on Scallops with or without added water and/or solution of water and phosphate.

X.3.2.1 Scallop Reception (Processing Step 8)

Potential Hazards: Marine biotoxins, microbiological, chemical and physical contamination

Potential Defects: Decomposition; excess water uptake; dead or injured scallops; parasites; objectionable matter; foreign matter

Technical Guidance:

- Live scallops should be unloaded without undue delay and with care and adequately chilled to avoid contamination.
- [Whole scallops should be examined to assure they are all still alive, and any dead scallops should be discarded because once a scallop dies biotoxins, if present in the viscera and roe, can migrate into the meat. In addition, the quality of the meat and roe in dead whole scallops may be unacceptable because the time of death is unknown. (See section X.3.1.3).]
- Rough handling of live scallops should be avoided to minimize stress which could lead to the death of scallops prior to processing.
- Product specifications could include the following characteristics:
  - organoleptic characteristics such as appearance, flavour**,** odour, texture, etc;
  - species identification;
  - acceptable upper limit moisture content;
  - workmanship (e.g. presence of viscera/roe (in the case of adductor muscle meat only);
  - chemical contamination such as heavy metals, pesticide residues, etc.;
  - presence of visible parasites;

- foreign matter.

- [For the marketing of roe-on scallops, a processor should have a process in place to ensure that the toxicity content meets the regulatory requirements of the official agency having jurisdiction over the harvest area. This could be accomplished by adhering to a toxin monitoring program~~s~~ or end product testing.]
- Scallop handlers and appropriate personnel should acquire skills in sensory and physical examination techniques to ensure incoming lots meet essential quality provisions of the *Standard for Raw, Fresh and Quick Frozen Raw Scallop Products (under development).*
- Appropriate procedures should be in place for scallop handlers and appropriate personnel to verify that species specifications are met. This could include but not limited to reviewing product information in commercial documentation.
- Scallops should be rejected if known to contain harmful or extraneous substances~~,~~ which will not be eliminated or reduced to an acceptable level by normal procedures of sorting or preparation. An appropriate assessment should be carried out to determine the reason(s) for loss of control and the HACCP or DAP plan should be modified where necessary.

X.3.2.2 Washing Whole Scallops (Processing Step 9)

Potential hazards: *Microbiological contamination; chemical and physical contamination*

Potential defects: *Unlikely*

Technical Guidance: Refer to section X.3.1.2

X.3.2.3 Shucking (Processing Step 10)

Potential Hazards: *Marine biotoxin; microbiological contamination*

Potential Defects: *Remaining viscera; remaining roe (in the case of Scallop Meat); dead scallops,*

Technical Guidance: Refer to section X.3.1.3

X.3.2.4 Washing (Processing Step 11)

Potential Hazards: *Shell fragments*

Potential Defects: *Excessive water; objectionable matter; foreign matter*

Technical Guidance: Refer to section X.3.1.4.

X.3.2.5 Chilled Storage (Processing Step 12)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Decomposition*

Also refer to Section 8.1.2 Chilled Storage

Technical Guidance:

- For scallop**s** packed in containers, their identification tag facilitates the determination of the harvest date. Stock rotation schemes should be used to ensure proper utilization of the scallops.
- Products should be stored at 4C or below. The temperature should be monitored during chilled storage.
- Product should be stacked in a manner that would facilitate adequate and uniform temperature distribution to all parts of the stored product.
- If freshwater ice is used to chill scallops, care should be taken to provide adequate drainage and minimize water uptake (See section X.3.1.7). Any measurable added water from ice should be properly labeled.

X.3.2.6 Addition of a Solution of Water and Phosphate (Processing Steps 13)

Potential Hazards: *Unlikely*

Potential Defects: *Excess water uptake; off-flavours**;** textures and decomposition; incorrect application and formulation of phosphate solution*

Also refer to Section 8.5.1 Reception – Packaging, Labels & Ingredients and Section 8.5.2 Storage - Packaging, Labels & Ingredients.

Technical Guidance:

- The quantity of phosphate solution added to scallops should be limited to the lowest possible level necessary to accomplish the technological purpose (e.g., moisture retention, preservative). Phosphate solutions should not be used for the purpose of adding water to increase net weight however its use will result in the binding of additional water from the phosphate solution into the Scallop Meat. A processor should develop and follow a process for the application of phosphate solutions in order to consistently achieve the functional goals.
- The net weight of the in-process scallop batch should be recorded prior to and following the phosphate treatment in order to be able to calculate the percent added solution for labeling purposes.
- Phosphate use must comply with the requirements of the *Standard for Raw, Fresh and Quick Frozen Raw Scallop Products (under development)*.

X.3.2.7 Addition of Water as an ingredient (Processing Step 13)

Potential Hazards: *Unlikely*

Potential Defects: *Inaccurate measurement of water and scallop quantity*

Technical Guidance:

- When water is added as an ingredient (for the production of quick frozen products only) , the amount of water and scallops to which the water is added should be controlled and accurately measured for labelling purposes.

X.3.2.8 Size Grading and Examination (Processing Step 14)

Potential Hazards: *Microbiological Contamination*

Potential Defects: *Decomposition, improper size variation, parasites.*

Technical Guidance:

- Size grading of scallop**s** is typically undertaken through mechanical graders of various degrees of sophistication. There is a possibility of scallop**s** becoming trapped in the bars of the graders so that regular inspection and cleaning is required to prevent “carry-over” of old scallop**s**.
- Gray or black adductor meat, which indicates that the scallop was dead at the time of shucking and is likely decomposed and may present a biotoxin hazard, should be culled from the lot.
- Scallops with an objectionable level of parasites should be culled from the lot.
- Exposure to ambient temperatures above 4˚C should be minimal and monitored. Containers of graded and examined scallops should be kept cool to ensure that the internal temperature is kept at or below 4˚C.

X.3.2.9 Freezing Process (Processing Step 15)

Potential Hazards: *Unlikely*

Potential Defects: *Texture deterioration*

Refer to Section 8.3.1 Freezing Process

X.3.2.10 Glazing (Processing Step 16)

Potential Hazards: *Unlikely*

Potential Defects: *Unlikely*

Refer to Section 8.3.2 Glazing

Technical Guidance:

- Care should be taken to ensure that the entire surface of the frozen Scallop Meat or Roe-on Scallop Meat is covered with a suitable protective coating of ice and should be free of exposed areas where dehydration (freezer burn) can occur during frozen storage.

X.3.2.11 Weighing (Processing Step 17)

Potential Hazards: *Unlikely*

Potential Defects: *Incorrect net weight*

Refer to Section 8.2.1 Weighing and Section 8.3.2 Glazing

- Net weight is often determined by weighing glazed scallops and accounting for the weight of the glaze. For that reason, glaze levels should be routinely measured to ensure that proper net weights are identified.
- Scales should be properly adjusted to account for the estimated glaze percentage and re-adjusted when glaze percentage change.

X.3.2.12 Packaging (Processing Steps 18, 23, 24)

Potential Hazards: *Unlikely*

Potential Defects: *Unlikely*

Refer to Section 8.5.1 Reception – Packaging, Labels & Ingredients; Section 8.5.2 Storage - Packaging, Labels & Ingredients and Section 8.4.4 Wrapping and Packing

X.3.2.13 Labelling (Processing Steps 19)

Potential Hazards: *Unlikely*

Potential Defects: *Incorrect labelling; undeclared or inaccurately declared added phosphate solution or added water*

Also refer to Section 8.2.3 Labelling

Technical Guidance:

- Information declared on the label should comply with the provisions of the *Standard for Raw, Fresh and Quick Frozen Raw Scallop Products (under development).* Labelling must accurately describe the nature of the product so that consumers are not misled and can make an informed choice.
- When a solution of water and phosphate is used in the process or water is added as an ingredient, a system should be in place to ensure that they are properly and accurately declared on the label. (Also refer to subsection X.3.2.6. Addition of a Solution of Water and Phosphate or subsection X.3.2.7. Addition of Water as an Ingredient.

X.3.2.14 Frozen Storage (Processing Step 20)

Potential Hazards: *Unlikely*

Potential Defects: *Dehydration; decomposition; development of rancid odours; loss of nutritional quality*

Technical Guidance:

Refer to Section 8.1.3 Frozen Storage

APPENDIX VI

FOOD ADDITIVE PROVISIONS IN STANDARDS FOR FISH AND FISHERY PRODUCTS

(for adoption)

New text is presented in **underlined/bold font** and deletion in ~~strikethrough font~~

GENERAL STANDARD FOR QUICK FROZEN FISH FILLETS
(CODEX STAN 190-1995)

4. FOOD ADDITIVES

Only the use of the following additives is permitted.

Humectants – Moisture/Water Retention Agents		
INS Number	Additive Name	Maximum Level in Product
339(i)	Sodium dihydrogen phosphate	**2200 mg/kg as phosphorus, singly or in combination**
339(ii)	**Disodium hydrogen phosphate**	
339(iii)	**Trisodium phosphate**	
340(i)	Potassium dihydrogen phosphate	
340(ii)	**Dipotassium hydrogen phosphate**	
340(iii)	**Tripotassium phosphate**	
341(i)	**Calcium dihydrogen phosphate**	
341(ii)	**Calcium hydrogen phosphate**	
341(iii)	**Tricalcium phosphate**	
450(i)	**Disodium diphosphate**	
450(ii)	**Trisodium diphosphate**	
450(iii)	Tetrasodium diphosphate	
450(v)	Tetrapotassium diphosphate	
450(vii)	**Calcium dihydrogen diphosphate**	
451(i)	Pentasodium triphosphate	
451(ii)	Pentapotassium triphosphate	
452(i)	Sodium polyphosphate	
452(ii)	**Potassium polyphosphate**	
452(iii)	**Sodium calcium polyphosphate**	
452(iv)	Calcium polyphosphate	
452(v)	**Ammonium polyphosphate**	
542	**Bone phosphate**	
401	Sodium alginate	GMP
Antioxidants		
INS Number	Additive Name	Maximum Level in Product
301	Sodium ascorbate	GMP

303	Potassium acerbate	GMP

STANDARD FOR QUICK FROZEN BLOCKS OF FISH FILLET, MINCED FISH FLESH AND MIXTURES OF FILLETS AND MINCED FISH FLESH (CODEX STAN 165-1989)

4. FOOD ADDITIVES

Only the use of the following additives is permitted.

Humectants – Moisture/Water Retention Agents		
INS Number	Additive Name	Maximum Level in Product
339(i)	Sodium dihydrogen phosphate	**2200 mg/kg as phosphorus, singly or in combination**
339(ii)	**Disodium hydrogen phosphate**	
339(iii)	**Trisodium phosphate**	
340(i)	Potassium dihydrogen phosphate	
340(ii)	**Dipotassium hydrogen phosphate**	
340(iii)	**Tripotassium phosphate**	
341(i)	**Calcium dihydrogen phosphate**	
341(ii)	**Calcium hydrogen phosphate**	
341(iii)	**Tricalcium phosphate**	
450(i)	**Disodium diphosphate**	
450(ii)	**Trisodium diphosphate**	
450(iii)	Tetrasodium diphosphate	
450(v)	Tetrapotassium diphosphate	
450(vii)	**Calcium dihydrogen diphosphate**	
451(i)	Pentasodium triphosphate	
451(ii)	Pentapotassium triphosphate	
452(i)	Sodium polyphosphate	
452(ii)	**Potassium polyphosphate**	
452(iii)	**Sodium calcium polyphosphate**	
452(iv)	Calcium polyphosphate	
452(v)	**Ammonium polyphosphate**	
542	**Bone phosphate**	
401	Sodium alginate	GMP
Antioxidants		
INS Number	Additive Name	Maximum Level in Product
300	Ascorbic acid	GMP
301	Sodium ascorbate	
303	Potassium acerbate	
304	Ascorbyl palmiatate	1 g/kg
In Minced Fish Flesh Only		

Acidity Regulators		
INS Number	Additive Name	Maximum Level in Product
330	Citric acid	GMP
331	Sodium citrate	
332	Potassium citrate	
Thickeners		
412	Guar gum	GMP
410	Carob bean (Locust bean) gum	
440	Pectins	
466	Sodium carboxymethyl cellulose	
415	Xanthan gum	
407	Carrageenan and its Na, K, NH4salts (including Furcelleran)	
407a	Processed EucheumaSeaweed (PES)	
461	Methyl cellulose	

STANDARD FOR QUICK FROZEN FISH STICKS (FISH FINGERS), FISH PORTIONS AND FISH FILLETS - BREADED OR IN BATTER
(CODEX STAN 166– 1989)

4. FOOD ADDITIVES

Only the use of the following additives is permitted.

Humectants – Moisture/Water Retention Agents		
INS Number	Additive Name	Maximum Level in Product
339(i)	Sodium dihydrogen phosphate	**2200 mg/kg as phosphorus, singly or in combination**
339(ii)	**Disodium hydrogen phosphate**	
339(iii)	**Trisodium phosphate**	
340(i)	Potassium dihydrogen phosphate	
340(ii)	**Dipotassium hydrogen phosphate**	
340(iii)	**Tripotassium phosphate**	
341(i)	**Calcium dihydrogen phosphate**	
341(ii)	**Calcium hydrogen phosphate**	
341(iii)	**Tricalcium phosphate**	
450(i)	**Disodium diphosphate**	
450(ii)	**Trisodium diphosphate**	
450(iii)	Tetrasodium diphosphate	
450(v)	Tetrapotassium diphosphate	
450(vii)	**Calcium dihydrogen diphosphate**	
451(i)	Pentasodium triphosphate	
451(ii)	Pentapotassium triphosphate	

452(i)	Sodium polyphosphate	
452(ii)	**Potassium polyphosphate**	
452(iii)	**Sodium calcium polyphosphate**	
452(iv)	Calcium polyphosphate	
452(v)	**Ammonium polyphosphate**	
542	**Bone phosphate**	
401	Sodium alginate	GMP
Antioxidants		
INS Number	Additive Name	Maximum Level in Product
300	Ascorbic acid	GMP
301	Sodium ascorbate	
303	Potassium acerbate	
304	Ascorbyl palmiatate	1 g/kg
In Addition, for Minced Fish Flesh Only		
Acidity Regulators		
INS Number	Additive Name	Maximum Level in Product
330	Citric acid	GMP
331	Sodium citrate	
332	Potassium citrate	
Thickeners		
INS Number	Additive Name	Maximum Level in Product
412	Guar gum	GMP
410	Carob bean (Locust bean) gum	
440	Pectins	
466	Sodium carboxymethyl cellulose	
415	Xanthan gum	
407	Carrageenan and its Na, K, NH4salts (including Furcelleran)	
407a	Processed Eucheuma Seaweed (PES)	
461	Methyl cellulose	
Food Additives for Breaded or Batter Coatings		
Raising Agents		
INS Number	Additive Name	Maximum Level in Product
339(i)	**Sodium dihydrogen phosphate**	**440 mg/kg as phosphorus, singly or in combination**
340(iii)	**Tripotassium phosphate**	
341(i)	Calcium dihydrogen phosphate	
341(ii)	Calcium hydrogen phosphate	
341(iii)	**Tricalcium phosphate**	
450(i)	**Disodium diphosphate**	

450(ii)	**Trisodium diphosphate**	
450(iii)	**Tetrasodium diphosphate**	
450(v)	**Tetrapotassium diphosphate**	
450(vi)	**Dicalcium diphosphate**	
450(vii)	**Calcium dihydrogen diphosphate**	
452(i)	**Sodium polyphosphate**	
452(ii)	**Potassium polyphosphate**	
452(iii)	**Sodium calcium polyphosphate**	
452(iv)	**Calcium polyphosphate**	
~~541~~	~~Sodium aluminium phosphate, basic and acidic~~	
500	Sodium carbonates	GMP
501	Potassium carbonates	
503	Ammonium carbonates	
Flavour Enhancers		
INS Number	Additive Name	Maximum Level in Product
621	Monosodium glutamate	GMP
622	Monopotassium glutamate	
Colours		
INS Number	Additive Name	Maximum Level in Product
160b(i)	Annatto extracts bixin-based	25 mg/kg expressed as bixin or norbixin
160b(ii)	Annatto extract (norbixin-based)	
150a	Caramel I (plain)	GMP
160a(i)	β-carotene (Synthetic)	100 mg/kg singly or in combination
160e	β-apo-carotenal	
Thickeners		
INS Number	Additive Name	Maximum Level in Product
412	Guar gum	GMP
410	Carob bean (Locust bean) gum	
440	Pectins	
466	Sodium carboxymethyl cellulose	
415	Xanthan gum	
407	Carrageenan and its Na, K, NH4salts (including Furcelleran)	
407a	Processed EuchemaSeaweed (PES)	
461	Methyl cellulose	
400	**Alginic acid**	
401	Sodium alginate	
402	**Potassium alginate**	
403	**Ammonium alginate**	

404	**Calcium alginate**	
463	Hydroxypropyl cellulose	
464	Hydroxypropyl methylcellulose	
465	Methylethylcellulose	
Emulsifiers		
INS Number	Additive Name	Maximum Level in Product
471	Monoglycerides of fatty acids	GMP
322	Lecithins	
Modified Starches		
1401	Acid treated starches	GMP
1402	Alkaline treated starches	
1404	Oxidized starches	
1410	Monostarch phosphate	
1412	Distarch phosphate esterified with sodium trimetaphosphate; esterified with phosphorus oxychloride	
1414	Acetylated distarch phosphate	
1413	Phosphated distarch phosphate	
1420	Starch acetate esterified with acetic anhydride	
1421	Starch acetate esterified with vinyl acetate	
1422	Acetylated distarch adipate	
1440	Hydroxypropyl starch	
1442	Hydroxypropyl starch phosphate	

STANDARD FOR QUICK FROZEN SHRIMPS OR PRAWNS (CODEX STAN 92-1981)

4. FOOD ADDITIVES

Only the use of the following additives is permitted.

Acidity Regulators		
INS Number	Additive Name	Maximum Level in Product
330	Citric acid	GMP
Humectants – Moisture/Water Retention Agents		
INS Number	Additive Name	Maximum Level in Product
339(i)	**Sodium dihydrogen phosphate**	
339(ii)	**Disodium hydrogen phosphate**	
339(iii)	**Trisodium phosphate**	
340(i)	**Potassium dihydrogen phosphate**	
340(ii)	**Dipotassium hydrogen phosphate**	
340(iii)	**Tripotassium phosphate**	

341(i)	**Calcium dihydrogen phosphate**	**2200 mg/kg as phosphorus, singly or in combination**
341(ii)	**Calcium hydrogen phosphate**	
341(iii)	**Tricalcium phosphate**	
450(i)	**Disodium diphosphate**	
450(ii)	**Trisodium diphosphate**	
450(iii)	Tetrasodium diphosphate	
450(v)	Tetrapotassium diphosphate	
450(vii)	**Calcium dihydrogen diphosphate**	
451(i)	Pentasodium triphosphate	
451(ii)	Pentapotassium triphosphate	
452(i)	**Sodium polyphosphate**	
452(ii)	**Potassium polyphosphate**	
452(iii)	**Sodium calcium polyphosphate**	
452(iv)	**Calcium polyphosphate**	
452(v)	**Ammonium polyphosphate**	
542	**Bone phosphate**	
Antioxidants		
INS Number	Additive Name	Maximum Level in Product
300	Ascorbic acid (L-)	GMP
Colours		
INS Number	Additive Name	Maximum Level in Product
124	Ponceau 4R	30 mg/kg in heat-treated products only
Preservatives		
INS Number	Additive Name	Maximum Level in Product
221	Sodium sulphite	100 mg/kg in the edible part of the raw product, or 30 mg/kg in the edible part of the cooked product, singly or in combination, expressed as SO2
223	Sodium metabisulphite	
224	Potassium metabisulphite	
225	Potassium sulphite	

STANDARD FOR QUICK FROZEN LOBSTERS
(CODEX STAN 95-1981)

4. FOOD ADDITIVES

Only the use of the following additives is permitted.

Humectants – Moisture/Water Retention Agents		
INS Number	Additive Name	Maximum Level in Product
339(i)	**Sodium dihydrogen phosphate**	
339(ii)	**Disodium hydrogen phosphate**	
339(iii)	**Trisodium phosphate**	

340(i)	**Potassium dihydrogen phosphate**	**2200 mg/kg as phosphorus, singly or in combination**
340(ii)	**Dipotassium hydrogen phosphate**	
340(iii)	**Tripotassium phosphate**	
341(i)	**Calcium dihydrogen phosphate**	
341(ii)	**Calcium hydrogen phosphate**	
341(iii)	**Tricalcium phosphate**	
450(i)	**Disodium diphosphate**	
450(ii)	**Trisodium diphosphate**	
450(iii)	**Tetrasodium diphosphate**	
450(v)	**Tetrapotassium diphosphate**	
450(vii)	**Calcium dihydrogen diphosphate**	
451(i)	Pentasodium triphosphate	
451(ii)	Pentapotassium triphosphate	
452(i)	Sodium polyphosphate	
452(ii)	**Potassium polyphosphate**	
452(iii)	**Sodium calcium polyphosphate**	
452(iv)	Calcium polyphosphate	
452(v)	**Ammonium polyphosphate**	
542	**Bone phosphate**	
Preservatives		
INS Number	Additive Name	Maximum Level in Product
221	Sodium sulphite	100 mg/kg in the edible part of the raw product, or 30 mg/kg in the edible part of the cooked product, singly or in combination, expressed as SO2
223	Sodium metabisulphite	
224	Potassium metabisulphite	
225	Potassium sulphite	
228	Potassium bisulphite (for use in the raw product only)	
Antioxidants		
INS Number	Additive Name	Maximum Level in Product
300	Ascorbic acid	GMP
301	Sodium ascorbate	
303	Potassium ascorbate	