CODEX ALIMENTARIUS COMMISSION E

Food and Agriculture Organization of the United Nations

World Health Organization

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REP 16/FFP

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Thirty-ninth Session
Rome, Italy, 27 June – 1 July 2016

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

Ålesund, Norway
19 - 24 October 2015

Note: *This document incorporates Circular Letter CL 2015/30-FFP*

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CX 5/35 **CL 2015/30-FFP**
October 2015

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 34th Session of the Codex Committee on Fish and Fishery Products (REP 16/FFP)**

MATTERS FOR ADOPTION BY THE 39th SESSION OF THE CODEX ALIMENTARIUS COMMISSION

Draft Standards and Related Texts at Step 8 and Step 5/8 of the Procedure

1. Sections for inclusion in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) on processing of:

- Fish Sauce (para. 18, Appendix III);
- Fresh and Quick Frozen Raw Scallop Products (para. 24, Appendix IV) and
- Sturgeon Caviar, (para. 29, Appendix V).

Other Items for Adoption

2. Sampling plans in relevant standards for fish and fishery products (para. 8).

3. Amendments to the food additive provisions in relevant standards for fish and fishery products (para. 56, Appendix VI).

4. Amendment to Section 7.4 - Estimation of fish content of the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989) (para. 63, Appendix VII).

5. Amendment to Section 11 – *Processing of salted and dried salted fish* of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) (para. 66a, Appendix VIII).

Governments and international organizations wishing to submit comments on the above texts should do so in writing to the above address **before 31 May 2016**.

SUMMARY AND CONCLUSIONS

The summary and conclusions of the 34th 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 or 5/8 the sections on processing of: (i) fish sauce (para. 18, Appendix III); (ii) fresh and quick frozen raw scallop products (para. 24, Appendix IV); and (iii) sturgeon caviar (para. 29, Appendix VI)for inclusion in *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003).
- Forwarded: (i) sampling plans (para. 8) and amendments to the food additive provisions of several standards for fish and fishery products (para. 56, Appendix VI); (ii) Section 7.4 - Estimation of fish content of the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989) (para. 63, Appendix VII); and (iii) Section 11 – *Processing of salted and dried salted fish* of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) (para. 66a, Appendix VIII).

New work

The Committee agreed to:

- Start new work on specific guidance on histamine control in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) and sampling plans for histamine in relevant standards for fish and fishery products (para. 72).

Other matters of interest to the Commission:

The Committee agreed to:

- Discontinue work on Appendices 1 - 11 to the *Code of Practice for Fish and Fishery Products* (para. 66b); and consideration of work on a standard for fresh chilled pirarucú fillet or whole fish (para. 75); and
- Suspend physical meetings of the Committee and to continue working by correspondence (paras 80a and 81).

Matters of interest to Other Committees

Committee on Food Additives (CCFA)

The Committee agreed to request CCFA to:

- Align the provision of ethylene diamine tetra acetates (INS 385-386) in food category 9.4 of the GSFA with that of the *Standard for Canned Shrimps or Prawn* (CODEX STAN 37-1981) (para. 56b, i); and
- Revise the text of Note 299 of the GSFA (para. 56b, ii).

Committee on Methods of Analysis and Sampling (CCMAS)

The Committee agreed to:

- Include the sampling plans in the relevant standards for fish and fishery products proposed by CCMAS except for the sampling plans for parasites (para. 8); and
- Propose CCMAS consider improving the user-friendliness of making the *General Guidelines on Sampling* (CAC/GL 50-2004) (para. 9).

Matters for FAO

The Committee requested FAO to:

- Develop a table of nitrogen factors for the chemical analysis method in 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
- Develop a uniform procedure for sampling and analysis to conduct nitrogen factors (para. 63b).

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LIST OF APPENDICES

INTRODUCTION

1. The Codex Committee on Fish and Fishery Products (CCFFP) held its 34th session in Ålesund, Norway, from 19 to 24 October 2015, 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 delegates representing 49 Member Countries and one Member Organization, and an Observer from one international organization. The list of participants, including FAO and the Secretariats, is given in Appendix I.

OPENING

2. Mr Oskar Skulstad**,** representing the Mayor of Ålesund, opened the Session. He welcomed the participants and recalled that Ålesund had already hosted several sessions of the Committee. Mr Skulstad explained that Ålesund was a prosperous and expanding city building its wealth on fish and was considered the capital of the Norwegian fishing industry. In concluding his speech, Mr Skulstad invited the participants to explore the city and wished them fruitful deliberations.

Division of competence[1]

3. The Commission noted the division of competence between the European Union and its Member States, according to paragraph 5, Rule II, of the Rules of Procedure of the Codex Alimentarius Commission (CAC), as presented in CRD1.

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

4. The Committee adopted the Provisional Agenda as its Agenda for the session.

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

5. The Committee considered the information provided in document CX/FFP 15/34/2, noting that several matters were presented for information and others for discussion under relevant agenda items.

Codex Strategic Plan 2014-2019

6. The Committee noted that the Codex Strategic Plan 2014-2019 had been adopted at CAC36 and that a template for monitoring the implementation of selected activities relevant to all committees had been prepared by the Codex Secretariat (CX/FFP 15/34/2, Appendix I).

7. The Committee agreed that all selected activities were relevant to CCFFP. Specific replies are presented in Appendix II for consideration by CCEXEC71 and CAC39.

Sampling plans in standards for fish and fishery products

8. The Committee agreed to include in relevant standards for fish and fishery products[4] the sampling plans as proposed by the Codex Committee on Methods of Analysis and Sampling at its 35th session (CCMAS35)[5], except for the sampling plans for parasites, which were not considered appropriate with respect to the acceptance number and acceptable quality limit (AQL), as per table 10 of the *General Guidance on Sampling* (CAC/GL 50-2003).

9. The Committee noted that CAC/GL 50-2003 was difficult to understand and use, and proposed that CCMAS consider improving the user-friendliness of the Guideline.

10. The Committee agreed that future work could include developing and aligning sampling plans for standards for fish and fishery products.

Food additives

11. The Committee agreed to address the matters regarding food additives under agenda item 6.

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1 CRD1.
2 CX/FFP 15/34/1.
3 CX/FFP 15/34/2; CCFFP34 draft reply on the implementation of the Strategic Plan prepared by the Norwegian and Codex Secretariat (CRD7); comments of Brazil, European Union, Kenya, Nigeria, Senegal and African Union (CRD8).
4 *Standard for Live Abalone and for Raw, Fresh Chilled or Frozen Abalone for Direct Consumption or for Further Processing* (CODEX STAN 312-2013); *Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish* (CODEX STAN 311-2013); and *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014).
5 CX/FFP 15/34/2, para. 21 and Appendix III.

MATTERS ARISING FROM THE WORK OF FAO AND WHO (Agenda item 2b)[6]

12. The representative of FAO presented a summary of FAO and WHO work on: technical guidance on the development and implementation of a bivalve sanitation programme within the framework of Section 7 of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003); a technical paper on biotoxin toxicity equivalency factors; a technical brief on nitrogen factors; interagency collaboration to address the risk of ciguatera fish poisoning; antimicrobial resistance; dissemination of trade-related information; the histamine-sampling tool; and forthcoming publications.

13. The Committee thanked FAO and noted that the information related to nitrogen factors, trade-related information and histamine would be considered in more detail under agenda items 7, 8 and 9.

DRAFT CODE OF PRACTICE FOR PROCESSING OF FISH SAUCE (Agenda item 3)[7]

14. The Delegation of Thailand informed the Committee that CRD6 had been prepared taking into account comments submitted to help facilitate discussion in plenary. The Committee agreed to base its discussion on CRD6.

General

15. The Committee, noting that the code of practice for processing of fish sauce had been approved as a stand-alone document, agreed that it should be incorporated into the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) so as to ensure that all pertinent codes were housed in one source.

Specific comments

16. The Committee considered the document section by section, noted comments, made editorial corrections and amendments for clarity, inserted appropriate references and made the following decisions, taking into account the decision to incorporate the text as a section in CAC/RCP 52-2003:

a) *General considerations of hazards and defects* – agreed to reflect that: (i) parts of fish in good condition and suitable for human consumption could be used for the production of fish sauce for reasons of sustainability; (ii) such fish parts used should still meet the quality conditions of the *Standard for Fish Sauce*; and (iii) the water phase salt should be changed from 10 per cent to 20 per cent to better reflect current processing practices (with this change reflected in other sections where applicable).

b) *Reception of raw materials 1.1 Fish* – included (i) additional guidance for on-board chilling with salting at the appropriate temperature-water phase salt combination (WPS) to control *Clostridium botulinum* growth and toxin production; and (ii) guidance to ensure that fish remained chilled after reception until salted to control histamine development, consequently deleting Step 19bis, Salting on harvesting vessel (optional), as the development of *C. botulinum* toxin and histamine was adequately addressed through these amendments.

Expanded the technical guidance for histamine verification sampling to ensure that harvest vessel controls were effective.

c) *Fermenting* – included “heavy metals” as a chemical contaminant potential hazard and added technical guidance for its control.

d) *Blending* – added additional guidance to ensure that batches were monitored for histamine and that those batches exceeding histamine allowed levels were discarded to avoid the blending of batches with high histamine levels.

e) *Heating* – agreed that this Step was optional and was not intended to inactivate *C. botulinum* toxin but rather to reduce or eliminate contamination from ingredients that are used during blending. Earlier controls of salting and temperature were considered to be sufficient to control toxin-producing pathogens.

f) *Definitions* – added the definition for fish sauce from the *Standard for Fish Sauce* for inclusion in Section 2 of the CAC/RCP 52-2003.

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6 CX/FFP 15/34/3.

7 CL 2014/25-FFP; Revised proposed Code of Practice for Processing of Fish Sauce – prepared by Thailand (CRD6); comments of Brazil, Egypt and the European Union (CX/FFP 15/34/4); India, United States of America, Viet Nam (CX/FFP 15/34/4 Add.1); Nigeria, Senegal, African Union (CX/FFP 15/34/4 Add.2); Kenya (CRD13); Republic of Korea (CRD15); Peru (CRD19); and Indonesia (CRD21).

Conclusion

17. The Committee noted that:

a) since all comments had been addressed and no outstanding issues remained, the document was ready to proceed in the Step Procedure; and

b) the sections on hazards – X.1.1 Fish and X.2 Mixing of fish and salt – would be submitted to the Codex Committee on Food Hygiene (CCFH) for endorsement.

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

18. The Committee agreed to forward the proposed draft Code of Practice and its related definition for adoption at Step 8 by the Codex Alimentarius Commission and inclusion in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) (Appendix III).

PROPOSED DRAFT CODE OF PRACTICE ON THE PROCESSING OF FRESH AND QUICK FROZEN RAW SCALLOP PRODUCTS (Agenda item 4)[8]

19. The Delegation of Canada, as Chair, provided a summary of the work of the Physical Working Group (PWG) and in-session Working Group (WG), and highlighted key aspects of discussion and revisions made to the document.

20. The Committee agreed to base its discussion on the reports of the WGs (CRDs 4 and 25).

General

21. The Committee noted the concerns regarding the Spanish translation and agreed that Spanish-speaking countries would provide the Secretariat with the appropriate terminology as needed to finalize the document.

Specific comments

22. The Committee considered the document section by section, noted comments, made editorial corrections and amendments for clarity, inserted appropriate references to other sections of CAC/RCP 52-2003, clarified where scallops should be alive during processing, and made the following additional decisions:

a) *X.1.1. Marine biotoxins* – confirmed the importance of hazard analysis in informing the types of control measures that competent authorities may require to ensure the safety of scallop products, and included examples of such control measures.

b) *X.2.3.1 Reception (shucked scallops)* and *X.2.3.2 Reception* – deleted pesticide residues as an example of chemical contamination.

c) *X.2.3.2 Reception* – inserted technical guidance for the handling of scallops showing evident signs of death or damage to ensure that such scallops were not shucked for further processing, as also required in X.2.1.1.

d) *Flow chart* – agreed to retain a single flow chart covering shucking on vessel- and on land-processing lines alike.

e) *Definitions* – included definitions for (i) roe-on-scallop meat; (ii) scallop meat from the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014); (iii) shucking, aligned with the definition in Section 2.9 – Crabs; (iv) roe; (v) viscera, in Section 2 of CAC/RCP 52-2003. The definition for shucking was kept flexible, without reference to live or whole scallops.

Conclusion

23. The Committee noted that:

a) since all comments had been addressed and no outstanding issues remained, the document was ready to proceed in the Step Procedure; and

b) the Code would be inserted after Section 7 *Processing of live and raw bivalve molluscs* and the definitions in Section 2 *Definitions* of the CAC/RCP 52-2003.

[8] CX/FFP 15/34/5; revised proposed draft Code of Practice on the Processing of Fresh and Quick Frozen Raw Scallop Products – prepared by Canada (CRD2); Report of the PWG (CRD4); Comments of Costa Rica, Japan and the United States of America (CX/FFP 15/34/5 Add.1); Australia, European Union, India (CX/FFP 15/34/5 Add.2); Brazil, Canada, Chile, European Union, Nigeria, Senegal and African Union (CX/FFP 15/34/5 Add.3); Kenya (CRD13); Republic of Korea (CRD15); Thailand (CRD16); Chile (CRD17); Peru (CRD19); report of in-session WG (CRD25).

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

24. The Committee agreed to forward the proposed draft Code of Practice for adoption at Step 5/8 (with omission of Steps 6/7) by the Codex Alimentarius Commission and inclusion in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) (Appendix IV).

PROPOSED DRAFT CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS (SECTION ON STURGEON CAVIAR) (Agenda item 5)[9]

25. The Delegation of the Islamic Republic of Iran, as Chair, provided a summary of the work of the EWG and the PWG on the Section on sturgeon caviar of CAC/RCP 52-2003, and highlighted key aspects of discussion and revisions made to the document.

26. The Committee agreed to base its discussion on the report of the PWG (CRD5).

Specific comments

27. The Committee considered the document section by section, noted comments and made the following decisions:

a) *Microbial hazards* – noted that the second paragraph had been aligned to be consistent with the *Standard for Sturgeon Caviar* (CODEX STAN 291-2010).

b) *Section X.5 Laying induction* – noted that the technical guidance aimed at ensuring that hormones, when used to induce ovulation, (i) had to have undergone regulatory assessment and approval for use for the purpose of food production by the Competent Authority; and (ii) were used according to the fish size and manufacturing instructions. It further noted that authorizing the use of veterinary drugs, including hormones and anaesthetics, was outside of the mandate of Codex.

c) *Section X.8 Treatment of eggs by shell improving methods* – added technical guidance to address the potential defects of off flavour, off odour and quality deterioration.

d) *Section X.19 Pasteurization* – did not support the proposal to introduce requirements for the labelling of pasteurized products because there were no corresponding provisions in the labelling section of CODEX STAN 291-2010, and noted that such a request should be addressed as a revision of the Standard.

e) *Section X.20 Weighing and labelling* – did not support the proposal by the Delegation of China to introduce requirements for the labelling of hormones and anaesthetics (type and dosage) used for ovulated eggs because there were no corresponding provisions in the labelling section of CODEX STAN 291-2010. The Delegation of China expressed reservations to this decision being of the view that including such a requirement would regulate producers' practices and ensure the right of consumers to know the exact information regarding the processing of caviar.

f) *Definitions* – added the two definitions, fish eggs and caviar, listed in the CODEX STAN 291-2010 for inclusion in Section 2, *Definitions*, of CAC/RCP 52-2003.

Conclusion

28. The Committee:

a) agreed that, since all comments had been addressed and no outstanding issues remained, the document was ready to proceed in the Step Procedure; and

b) noted that Section X.16, Extra saltwater removal, i.e. technical guidance on salt content of final product, would be submitted to CCFH for endorsement.

Status of the Proposed Draft Code of Practice for Fish and Fishery Products (Section on Sturgeon Caviar)

29. The Committee agreed to forward the proposed draft Code of Practice for adoption at Step 5/8 (with omission of Steps 6/7) by the Codex Alimentarius Commission and inclusion in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) (Appendix V).

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[9] CX/FFP 15/34/6; Revised proposed Code of Practice for Fish and Fishery Products (Section on Surgeon Caviar), prepared by the Islamic Republic of Iran (CRD3); Report of the PWG on the *Code of Practice for Fish and Fishery Products* (Section on Caviar) (CRD5); Comments of Costa Rica, Egypt, Ghana, Morocco and the United States of America (CX/FFP 15/34/6 Add.1); India and Norway (CX/FFP 15/34/6 Add.2); Brazil, Canada, China (CX/FFP 15/34/6 Add.3); Kenya (CRD13); Japan (CRD14); Republic of Korea (CRD15).

30. The Committee noted the reservations of China on forwarding the document for adoption at Step 5/8, being of the view that it should advance only to Step 5 so as to give Members more time to consider it and provide comments.

PROPOSED FOOD ADDITIVE PROVISIONS IN STANDARDS FOR FISH AND FISHERY PRODUCTS (Agenda item 6)[10]

31. The Delegation of the European Union, as Chair, provided a summary of the work of the EWG, noting that discussion could assist the Committee to solve the outstanding issues and complete the work on the revision of the food additive provisions in the standards for fish and fishery products.

32. To facilitate discussion, the Committee agreed to establish an in-session WG, chaired by the European Union and working in English only, with the following mandate:

> *On the basis of the EWG report (CX/FFP 15/34/7), review outstanding issues to correct inconsistencies/inaccuracies in the relevant standards for fish and fishery products and to give recommendations on paragraphs 15 and 24 of CX/FFP 15/34/2 (Agenda item 2).*

33. The Delegation of the European Union provided a summary of the work of the in-session WG and highlighted key aspects of discussion and revisions made.

Specific comments

34. The Committee considered recommendations 1-12 of the in-session WG report (CRD24) and made the following decisions and comments:

Standards for Quick Frozen Blocks of Fish Fillets, Minced Fish Flesh and Mixtures of Fillets and Minced Fish Flesh (CODEX STAN 165-1989) and *for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989)

35. The Committee agreed to recommendations 1 and 2 to revise the food additives provisions.

36. The Committee noted that the proposal to consider the inclusion of sodium aluminium phosphate (INS 541) in CODEX STAN 166-1989 was outside the mandate of the in-session WG and agreed to consider it separately (see paras. 52-55).

Standards Atlantic Herring and Salted Sprat (CODEX STAN 244-2004) and *for Salted Fish and Dried Salted Fish of the Gadidae Family of Fishes* (CODEX STAN 167-1989)

37. The Committee agreed to recommendations 3 and 4 to revise the food additives provisions.

38. With regard to the provision for sodium sorbate (INS 201), for which there were no corresponding JECFA specifications, the Committee noted that the issue was currently under consideration in the Committee on Food Additives (CCFA), and therefore agreed to retain the present provision in the two standards and request CCFA's further advice on its retention in the Standards.

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

39. The Committee agreed to recommendation 5 to revise the food additives provisions.

Standard for Canned Shrimps or Prawn (CODEX STAN 37-1981)

40. The Committee agreed to recommendation 6 to revise the food additives provisions.

41. The Committee noted that the maximum level for ethylene diamine tetra acetates (INS 385-386) in the corresponding food category (food category 9.4 "Fully preserved, including canned or fermented fish and fish products, including mollusks, crustaceans, and echinoderms") of the *General Standard for Food Additives* (GSFA) (CODEX STAN 192-1995) was 340 mg/kg, and therefore agreed to request CCFA to align the provision of the GSFA with that of the Standard.

Standards for Canned Tuna and Bonito (CODEX STAN 70-1981) and *for Canned Crab Meat* (CODEX STAN 90-1981)

42. The Committee agreed to the editorial changes (recommendations 7 and 8).

[10] CX/FFP 15/34/7; Comments of Brazil, Canada, China, India, Kenya, Nigeria, Senegal, Thailand and African Union (CRD9); Peru (CRD19); Ghana (CRD20); Indonesia (CRD21); the United States of America (CRD23); Report of the in-session Working Group on Food Additives (CRD24).

Disodium diphosphate (INS 450(i)) and phosphoric acid (INS 338)

43. The Committee noted that the in-session WG had only recommended editorial changes (expressing the maximum level as phosphorous) to the provision for disodium diphosphate (INS 450(i)) as no consensus had been reached on the technological class or maximum level.

44. The delegation of the United States of America, referring to CRD23, noted that disodium diphosphate and phosphoric acid (INS 338) were used by industry to bind magnesium to reduce struvite crystal formation in canned seafood products. The delegation proposed to list these additives as sequestrants and to revise the maximum level to 700 mg/kg as phosphorus. The proposal was supported by India and Thailand.

45. Other delegations did not support the proposal, noting that other food additives with sequestrant function could be used in these products, and supported the conclusion of the in-session WG.

46. Noting the importance of having agreement on changes that went beyond the correction of inconsistencies or inaccuracies, the Committee agreed only to the editorial changes to the provision for disodium diphosphate proposed by the in-session WG.

47. However, having noted discrepancies in the units expressing the maximum level (i.e. 10 mg/kg vs 10 g/kg) in the two Standards published on the Codex website[11] and those in the obsolete Volume 9A (2001), the Committee requested the Codex Secretariat to verify the correct unit of expression and refer the matter to CAC39 so that an informed decision could be made on the amendment of the provision.

Natural flavouring

48. The Committee revised the text proposed by the in-session WG as follows:

> *Only natural flavouring substances, natural flavouring complexes and smoke flavouring are permitted for use in the products covered by this standard and should be used in accordance with the Guidelines for the Use of Flavourings (CAC/GL 66-2008).*

Standards for Canned Sardines and Sardine-Type Products (CODEX STAN 94-1981) and *for Canned Finfish* (CODEX STAN 119-1981)

49. The Committee agreed to the editorial changes (recommendations 9 and 10) and to revise the text for natural flavouring (para. 48).

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

50. The Committee agreed to request CCFA to revise Note 299 of the GSFA to reflect the correct maximum level for phosphates (i.e. 440 mg/kg).

Standard for Fresh and Quick Frozen Raw Scallop Products (CODEX STAN 315-2014)

51. The Committee agreed to: (i) inform CCFA that the phosphates INS 342 (i) and (ii), and INS 343 (i)-(iii) in the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014) act as acidity regulators and stabilizers; and (ii) to modify the Standard to reflect these additional functional classes.

Sodium aluminium phosphate (INS 541)

52. The Delegation of the United States of America, referring to CRD23, proposed to reinstate the provision for sodium aluminium phosphate (INS 541) in the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989). The delegation noted that sodium aluminium phosphate had been in use in the food industry as a raising agent since 1951 and had many unique functional, quality and cost advantages, and that the decision to revoke the provision had had a negative impact on the U.S. industry, trade and product quality. This proposal was supported by India.

53. The Codex Secretariat clarified that:

a) the matter regarding the provision of sodium aluminium phosphate (INS 541) in the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989) had been referred to it by CCFA46[12]; and

b) discussion on the matter in CCFFP33 had led to agreement to revoke the provision in the Standard[13].

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[11] See <http://www.codexalimentarius.org/download/standards/105/CXS_070e.pdf> and <http://www.codexalimentarius.org/download/standards/106/CXS_090e.pdf>.

[12] CX/FFP 14/33/2, para. 16 "CCFA recommended CCFFP to consider revision of the provision for sodium aluminium phosphate (INS 541) in the *Standard for quick frozen fish sticks (fish fingers), fish portions and fish fillets breaded or in batter* (CODEX STAN 166-1989) (currently at 1g/kg expressed as P_2O_5 in breaded and battered coatings) to express the maximum use levels on an aluminium basis, taking into account the revised JECFA PTWI".

54. With regard to the decision of CCFFP33, the Codex Secretariat further clarified that:

a) at the request of some members, the matter of sodium aluminium phosphate (INS 541) had been considered by the EWG, established by CCFFP32, which had recommended "to consider the revision of the use of sodium aluminium phosphate (INS 541), either revoking the provision or expressing the maximum level as aluminium"[14];

b) the in-session WG established by CCFFP33 had considered the EWG recommendation and recommended revoking the provision of sodium aluminium phosphate (INS 541) in CODEX STAN 166-1989[15]; and

c) no reservations or concerns had been expressed regarding the decision of CCFFP33 or its subsequent approval by CAC37[16].

55. In the light of the clarification, and noting there were alternatives (i.e. other raising agents in the Standard) that could replace sodium aluminium phosphate, the Committee agreed not to reopen the discussion on this matter.

Conclusion

56. The Committee agreed to:

a) forward the amendments to food additive provisions in the standards for fish and fishery products for adoption by the Codex Alimentarius Commission (Appendix VI);

b) request CCFA to:

(i) align the provision of ethylene diamine tetra acetates (INS 385-386) in food category 9.4 of the GSFA with that of the *Standard for Canned Shrimps or Prawn* (CODEX STAN 37-1981); and

(ii) revise the text of Note 299 of the GSFA; and

c) inform CCFA regarding the technological function of phosphates INS 342 (i) and (ii), and INS 343 (i)-(iii) in the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014).

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) (Agenda item 7)[17]

57. The delegation of the United States of America introduced the paper, prepared in collaboration with the United Kingdom and New Zealand, and recalled the prior discussion in CCFFP regarding the need for different nitrogen factors, the methods used to determine such factors, and their effectiveness for determining fish content. The delegation recalled that a proposal to amend Section 7.4 had been presented to CCFFP33, but that the Committee had requested the amendment be more clearly presented at the present session.

58. The delegation explained that the drafting group had considered and made recommendations on:

a) *Codex procedure* – to retain the chemical analysis method (nitrogen factor method) in the Standard and replace the table of nitrogen factors with an external reference;

b) *Use of methods* – (i) that the use of methods be further clarified in the Standard; (ii) that instead of the +/- 10 per cent allowance currently listed with the table of nitrogen factors, the uncertainty of each nitrogen factor should be taken into account by users from the statistical data presented with the published nitrogen factor; and (iii) that the agreed adjustment factors for moisture migration be included with the AOAC method;

c) *Methodology for determining nitrogen factors* – (i) the appropriate procedure used to determine nitrogen factors should be documented; and (ii) different types of "dry" nitrogen factors should be included and/or differentiated in tables of nitrogen factors; and

d) *Possible future work* – further refining of the uniform procedure to determine nitrogen factors; the format for publishing the list of nitrogen factors; analysis of current nitrogen factor data to determine standard errors; and analysis of the statistical validity of a single "dry" nitrogen factor for groups of species.

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13 REP14/FFP para. 99 and Appendix. VI.
14 CX/FFP 14/33/2, para. 16
15 FFP33/CRD22.
16 REP14/CAC para. 37 and Appendix. III.
17 CX/FFP 15/34/8; comments of Kenya, Morocco, Nigeria, Senegal and African Union (CRD10).

59. The delegation of the United Kingdom informed the Committee of two recently published papers in peer reviewed journals, on the nitrogen factors for Alaska Pollack and for commercial Pangasius[18].

Discussion

Amendments to Section 7.4 (Annex A of CX/FFP 15/34/8)

60. The Committee considered the proposed amendments to Section 7.4 (Annex A of CX/FFP 15/34/8), noted comments and took the following decisions:

a) Chemical Analysis Method (Nitrogen Factor End-product Method) – recognized the importance of the method for verification of the fish content declared on the label and amended it to indicate that it did not require confirmation when used for fully cooked products because AOAC 996.15 (End Product Method) was less precise with these products.

b) Table on average nitrogen factors – confirmed the decision of CCFFP33 to remove the table from Section 7.4 and agreed to make it available on the FAO website. Section 7.4 would include a link to the FAO website.

61. With regard to the work for updating and including new nitrogen factors, the Committee noted that FAO was willing continue to support this exercise and had mechanisms in place for the collection (call for data) and review (by experts selected from the roster or call for experts) of data.

Draft Uniform Procedure to Determine Nitrogen Factors (Annex B of CX/FFP 15/34/8)

62. The Committee agreed that the uniform procedure should be developed outside Codex in line with the decision related to the publication and update of the nitrogen factors (para. 60b).

Conclusion

63. The Committee agreed to:

a) Forward the amended Section 7.4 - Estimation of fish content of the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989) for endorsement by CCMAS and for adoption by the Codex Alimentarius Commission (Appendix VII).

b) Request FAO to:

- Develop a table of nitrogen factors for the chemical analysis method in 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).
  - The table will include the existing data that has been adopted in CODEX STAN 166-1989 and other statistical information from available data. Subsequently the table will be a living document that will include future nitrogen factor data based on peer-reviewed studies (e.g. published peer reviewed journals).
  - The table could include the following data:
    - species
    - harvest areas and dates
    - type of fish product used to derive the nitrogen factor (e.g. dry fillet, minced block)
    - sample type (e.g. one fillet, 250 g of block)
    - number of samples
    - standard deviation
    - study citation
- Develop a uniform procedure for sampling and analysis to conduct nitrogen factors to generate the above data.
  - The uniform procedure should take into account variability arising from, for example, environmental factors, aquaculture methods, natural nitrogen variation, processing conditions (where applicable), etc.

[18] AMC, A Nitrogen Factor for Alaska Pollack Ingredient in Fish Product, *Anal. Methods*, 2014, **6**, 1279-1283; AMC, A Nitrogen Factor for Commercial Pangasius (*Pangasius hypopthalmus*) Fillets, *Anal. Methods*, 2014, **6**, 1284-1287.

CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS (OPTIONAL FINAL PRODUCT REQUIREMENTS FOR COMMODITIES / APPENDIX ON MAP) (Agenda item 8)[19]

64. The Committee recalled that the aim of the discussion was to finalize the appendix on modified atmosphere packaging (Appendix 1) and to consider those essential safety or quality aspects from appendices 3,4,5,6,8, 9 and 11 to be integrated into the various sections of the Code.

65. The Committee considered the document, noted comments and made the additional following decisions:

a) *Appendix I Modified atmosphere packaging (MAP)* – (i) acknowledged the importance of providing guidance on MAP for seafood products, but also acknowledged that this technology was widely used across the food supply to impact the management of several pathogens, such as *Listeria* and *Clostridium botulinum* and that it could be addressed in CCFH; and (ii) noted that any country could propose work on guidance on MAP to CCFH in accordance with its established procedures for new work proposals.

b) *Integration of essential safety, quality or related aspects* - inserted the list of species of the *Gadidae* family from the adopted Appendix 6 in the introduction of Section 11 – *Processing of salted and dried salted fish*, similar to what was already done in Section 15 – *Processing of cephalopods*. Further work on Appendix 6 was discontinued.

c) *Other appendices* - discontinued work on all other appendices in light of the fact that optional trade specifications or requirements were an issue for agreement among trade partners and should not be part of a Codex text. The Representative of FAO reiterated the offer to house any necessary technical specifications on the FAO GLOBEFISH website.

Conclusion

66. The Committee agreed to:

a) forward the amendment to Section 11 – *Processing of salted and dried salted fish* of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52 – 2003) for adoption to the CAC (Appendix VIII); and

b) discontinue work on Appendices 1-11 to the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52 – 2003) and inform the Codex Alimentarius Commission, accordingly, with all references to those Appendices being removed from the relevant sections of the Code.

DISCUSSION PAPER ON HISTAMINE (Agenda item 9)[20]

67. The delegation of the United States of America, as co-Chair, provided an overview of the main conclusions and recommendations of the EWG, which had focused on four aspects of histamine: (i) control guidance; (ii) susceptible species; (iii) safety limit; and (iv) sampling plans.

68. The delegation highlighted that the EWG:

a) had determined the need to include more complete guidance on the control of scombrotoxin/histamine in CAC/RCP 52-2003 and to incorporate in the Code a revised list of fish species susceptible to scombrotoxin or histamine formation (see table 2.3 of the FAO/WHO Expert Meeting Report);

b) had not reached consensus on the need to revise the safety limits for histamine but recommended consulting the Committee on Contaminants in Foods (CCCF) on appropriate health-based limits based on adverse-event thresholds and uncertainty presented in the FAO/WHO Expert Report; and

c) had determined the need to develop sampling plans and provided three options for consideration.

69. The representative of FAO, referring to CRD12, clarified that:

a) the issue of uncertainty factors in the histamine safety limit for individuals with higher histamine sensitivity had been considered by the FAO/WHO expert meeting but, since there was no data available for this category of the population, the meeting included it under “Research needs and recommendations for future studies”;

b) apart from providing a histamine limit, the expert meeting also provided other options for histamine risk management, such as working on operational limit;

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[19] CL 2015/1-FFP; Comments of Costa Rica, European Union (CX/FFP 15/34/9 rev.1); India, Norway, the United States of America (CX/FFP 15/34/9 Add.1); Canada, Nigeria, Senegal, the United States of America , African Union (CX/FFP 15/34/9 Add.2); Kenya (CRD13); and the Proposal on the Appendix on MAP, prepared by Norway (CRD18).

[20] CX/FFP 15/34/10; Information from FAO (CRD12); Comments of Brazil, Kenya, Morocco, Nigeria, Senegal, Thailand, African Union (CRD11); Ghana (CRD20); and the United States of America (CRD22).

c) the experts had pointed out that the appropriate selection of the sampling plan criteria could considerably improve the timeliness and cost-effectiveness of the sampling requiring the lowest number of samples to be tested to achieve the same level of confidence; and

d) following the feedback from the EWG, the FAO/WHO histamine sampling tool had been modified to give more flexibility in terms of level of protection, maximum number of samples to be tested and range of "m".

70. The representative further noted that histamine formation occurred in fish due to microbial action, histamine control was a hygiene issue, and histamine limits were listed in the hygiene section of several standards for fish and fishery products. As histamine was not like other chemical contaminants, CCFH could be considered the most appropriate reference of this topic.

Discussion

71. The Committee had a general discussion on the recommendations of the EWG. In summarizing the discussion, the Chairperson noted that there was a high level of consensus on:

a) the need to revise the guidance in various sections of the CAC/RCP 52-2003, including a revised list of susceptible species, with the proposed removal of salmon from the list;

b) maintaining both current limits (decomposition and safety) and revisiting the safety limits as additional knowledge and information became available;

c) keeping histamine as the major indicator and to consider other biogenic amines when further evidence became available;

d) the need to develop sampling plans, with a preference for Option 3, which was to define a sampling plan or more than one sampling plan for different purposes; and

e) the need to see the issue of histamine as a whole and not to separate the work on guidance on control measures and sampling plans.

Conclusion

72. The Committee agreed to:

a) develop more specific guidance in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) and to include a revised list of susceptible species;

b) to maintain both current limits (decomposition and safety) and to revisit the safety limits when further knowledge and information became available;

c) provide the necessary alignment of the sampling plans across the relevant standards for fish and fishery products, acknowledging that the FAO/WHO histamine sampling tool provided a sound basis for further development, and the discussion paper (CX/FFP 15/34/10) and discussion at CCFFP34 constituted valuable sources of information for further work; and

d) develop sampling plans for different purposes. (In doing so, the Committee should bear in mind that when sufficient safety control measures were implemented in the entire food chain, especially early in the process and controls at the end of the chain demonstrate that the measures have worked, increasing the sample size would not necessarily increase accuracy nor safety of products; and ensure that sampling plans are risk-based, practical, feasible and not adding a burden to producers while still ensuring food safety.)

73. The Committee further agreed to discuss the modality for carrying out such new work under agenda item 10b.

74. The Committee noted that FAO would consider requests for technical assistance in applying the histamine sampling tool.

OTHER BUSINESS AND FUTURE WORK (Agenda item 10)

New Work Proposal on a Standard for Fresh Chilled Pirarucú Fillet or Whole Fish (Agenda item 10a)[21]

75. The Committee agreed to discontinue consideration of this matter, noting that no document had been submitted.

[21] CX/FFP 15/34/11.

Discussion paper on the future of the Committee (Agenda item 10b)[22]

76. The Chairperson recalled that at the present session work had been finalized on all items in the Step Procedure; the issues related to nitrogen factors (Agenda item 7) and the appendices to CAC/RCP 52-2003 (Agenda item 8) had been resolved; the only matter that had been identified for new work was the development of guidance and sampling plans for histamine (Agenda item 9); and no new requests for further work had been submitted. In his consideration, the volume of outstanding work did not justify convening regular sessions of CCFFP.

77. The Chairperson opened the discussion on the future of CCFFP inviting the Committee to take into consideration the two options presented in the discussion paper: (i) that CCFFP be adjourned *sine die* and outstanding work referred to appropriate committees; or (ii) that specific items of work be conducted/completed by correspondence.

Discussion

78. The Committee generally agreed that the new work on histamine (i.e. guidance on control of histamine and sampling plans) should be developed as a single set of work; that CCFFP was the most appropriate forum for conducting such work; and that, if conducted in another committee, it might not receive the same attention and priority, or be diluted in broader issues, such as the control of histamine in food in general.

79. A number of delegations held that such work should be carried out in physical meetings, in the interests of effectiveness and efficiency, and that the possibility of holding physical meetings should therefore be kept open. Others held that conducting such work outside of CCFFP could contribute to strengthening the fish-related expertise of other committees. It was also noted that working by correspondence would not preclude the possibility of establishing a PWG to facilitate the work of the Committee, and that the host Government could assess the need and take the relevant decision.

Conclusion

80. The Committee agreed to:

a) continue working by correspondence, as the amount of outstanding work did not warrant physical sessions of CCFFP;

b) start new work on the (i) revision of the *Code of Practice for Fish and Fishery and Fishery Products* (CAC/RCP 52-2003) to provide complete guidance on scombrotoxin/histamine control, and (ii) to develop new sampling plans for histamine in relevant standards for fish and fishery products, basing work on the discussion paper prepared for and the discussion at the session (Agenda item 9);

c) request Japan and United States of America to prepare a project document for the new work on the revision of the *Code of Practice for Fish and Fishery and Fishery Products* (CAC/RCP 52-2003) and the development of sampling plans for histamine for submission to the Executive Committee and Codex Alimentarius Commission via the Codex Secretariat; and

d) establish an EWG, led by Japan and the United States of America and working in English only, that, subject to the approval of new work, would develop such a document as described above for comments at Step 3, noting the possibility for the host Government to convene a PWG.

DATE AND PLACE OF NEXT SESSION (Agenda item 11)

81. The Committee agreed to suspend its cycle of physical meetings and to continue its work by correspondence.

[22] CX/FFP 15/34/12.

SUMMARY STATUS OF WORK

Subject Matter	**Step**	**Action by**	**Document Reference in REP 16/FFP**
Draft Code of Practice for Processing of Fish Sauce	8	Governments CAC39	Para. 18 Appendix III
Proposed draft Code of Practice on the Processing of Fresh and Quick Frozen Raw Scallop Products	5/8	Governments CAC39	Para. 24 Appendix IV
Proposed draft Code of Practice for Fish and Fishery Products (Section on Sturgeon Caviar)	5/8	Governments CAC39	Para. 29 Appendix V
Sampling plans in the *Standard for Live Abalone and for Raw, Fresh Chilled or Frozen Abalone for Direct Consumption or for Further Processing* (CODEX STAN 312-2013); *Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish* (CODEX STAN 311-2013); and *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014)	-	Governments CAC39	Para.8
Amendments to Food Additive Provisions in Standards for Fish and Fishery Products	-	Governments CAC39	Para. 56 Appendix VI
Amendments to Section 7.4 *Estimation of fish content* of the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989)	-	Governments CAC39	Para. 63a Appendix VII
Amendment to Section 11 – *Processing of salted and dried salted fish* of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003)	-	Governments CAC39	Para. 66a Appendix VIII
Appendices 1 – 11 to the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003)	discontinued	CAC39	Para. 66b
Proposal for a standard for fresh chilled pirarucú fillet or whole fish	discontinued	-	Para. 75
New work on guidance for histamine control in the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003) and sampling plans for histamine in standards for fish and fishery products	1/2/3	CAC39 eWG (Japan and USA) CCFFP	Paras 72 and 80

Appendix I

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APPENDIX II

REPLIES OF CCFFP34 TO THE STRATEGIC PLAN IMPLEMENTATION

Replies of CCFFP34 is shown in **Bold and Underlined** font.

Strategic Goal	Objective	Activity	Expected Outcome	Measurable Indicators/Outputs
1: Establish international food standards that address current and emerging food issues.	1.1: Establish new and review existing Codex standards, based on priorities of the CAC	1.1.1: Consistently apply decision-making and priority-setting criteria across Committees to ensure that the standards and work areas of highest priority are progressed in a timely manner.	New or updated standards are developed in a timely manner	- Priority setting criteria are reviewed, revised as required and applied. - # of standards revised and # of new standards developed based on these criteria.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** Does the Committee use any specific criteria for standards development? **The Committee uses the "Criteria for the Establishment of Work Priorities" in the Procedural Manual, as criteria for standards development.** Does the Committee intend to develop such criteria? **No as for now. The Committee could develop specific criteria in future, if the need arises.**				
	1.2: Proactively identify emerging issues and Member needs and, where appropriate, develop relevant food standards.	1.2.1: Develop a systematic approach to promote identification of emerging issues related to food safety, nutrition, and fair practices in the food trade.	Timely Codex response to emerging issues and to the needs of Members.	- Committees implement systematic approaches for identification of emerging issues. - Regular reports on systematic approach and emerging issues made to the CCEXEC through the Codex Secretariat.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** How does the Committee identify emerging issues and members needs? **Emerging issues identified by Members, other committees or FAO/WHO are brought to the attention of the Committee.** Is there a systematic approach? Is it necessary to develop such an approach? **Currently, there is no systematic approach; however, there may be a need to develop one should the current process found to be insufficient.**				
		1.2.2: Develop and revise international and regional standards as needed, in response to needs identified by Members and in response to factors that affect food safety, nutrition and fair practices in the food trade.	Improved ability of Codex to develop standards relevant to the needs of its Members.	- Input from committees identifying and prioritizing needs of Members. - Report to CCEXEC from committees on how standards developed address the needs of the Members as part of critical review process.
Included in question to 1.2.				
2: Ensure the application of	2.1: Ensure consistent use	2.1.1: Use the scientific advice of the joint	Scientific advice consistently taken	-. # of times the need

risk analysis principles in the development of Codex standards.	of risk analysis principles and scientific advice.	FAO/WHO expert bodies to the fullest extent possible in food safety and nutrition standards development based on the "Working Principles of Risk Analysis for Application in the Framework of the Codex Alimentarius".	into account by all relevant committees during the standard setting process.	for scientific advice is: - identified, - requested and, - utilized in a timely manner.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** Does the committee request scientific advice in course of its work, how often does it request such advice? Does the committee always use the scientific advice, if not, why not? **The Committee had requested scientific advice from FAO/WHO. For example:** • **The Joint FAO/WHO Expert Consultation on the "Public health risks of histamine and other biogenic amines in fish and fishery products" held in July 23-27, 2012; and** • **The Expert Group on *Salmonella* in bivalves, physical meeting held in October 21-21 2011.** **The Committee uses the scientific advice it has requested, but not all the subjects handled by the Committee need scientific advice.**				
		2.1.2: Encourage engagement of scientific and technical expertise of Members and their representatives in the development of Codex standards.	Increase in scientific and technical experts at the national level contributing to the development of Codex standards.	- # of scientists and technical experts as part of Member delegations. - # of scientists and technical experts providing appropriate input to country positions.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** How do members make sure that the necessary scientific input is given into country positions and that the composition of the national delegation allows to adequately present and discuss this position? What guidance could be given by the Committee or FAO and WHO? **Prior to developing and advancing a country's position, Members engage national scientific and technical expertise from within and outside government. Delegations include experts who have technical knowledge and expertise to participate in the discussions. CCFFP believes that there is no need for specific guidance from FAO/WHO at this point.**				
		2.1.3: Ensure that all relevant factors are fully considered in exploring risk management options in the context of Codex standard development.	Enhanced identification, and documentation of all relevant factors considered by committees during the development of Codex standards.	- # of committee documents identifying all relevant factors guiding risk management recommendations. - # of committee documents clearly reflecting how those relevant factors were considered in the context of standards development.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** How does the Committee ensure that all relevant factors have been taken into account when developing a standard and how are these documented? **The Committee considers all relevant factors provided in the Procedural Manual and also ensures that "Working Principles for Risk Analysis" is consistently applied when exploring risk management**				

options. The relevant discussion is captured in reports of the Committee or its working groups.				
		2.1.4: Communicate the risk management recommendations to all interested parties.	Risk management recommendations are effectively communicated and disseminated to all interested parties.	- # of web publication/ communications relaying Codex standards. - # of media releases disseminating Codex standards.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** When taking a risk management decision, does the committee give guidance to members how to communicate this decision? Would more consideration of this be helpful to members? **Communication of the risk management recommendations are done through standards, guidelines, and other related texts, which are posted on the Codex website. The Committee does not give specific guidance to Members on how to communicate this decision.**				
3: Facilitate the effective participation of all Codex Members.	3.1: Increase the effective participation of developing countries in Codex.	3.1.5: To the extent possible, promote the use of the official languages of the Commission in committees and working groups.	Active participation of Members in committees and working groups.	- Report on number of committees and working groups using the languages of the Commission
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** Is the use of official languages in working groups of the committee sufficient? What are the factors determining the choice of languages? **The use of official languages in working groups of the Committee is sufficient. The Committee tries to use as many official languages to the extent possible. The Committee determines the choice of language based primarily on the availability of resources. The Committee uses English for electronic working groups. All physical working groups held immediately prior to a session are held in English, French and Spanish.** How could the situation be improved? **Promoting the co-chairing arrangements might facilitate the use of other official language than English.**				
	3.2: Promote capacity development programs that assist countries in creating sustainable national Codex structures.	3.2.3: Where practical, the use of Codex meetings as a forum to effectively conduct educational and technical capacity building activities.	Enhancement of the opportunities to conduct concurrent activities to maximize use of the resources of Codex and Members.	-. # of activities hosted on the margins of Codex meetings.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** Does the Committee organize technical capacity activities or other activities in the margins of Committee sessions? If yes – how many and with which topics have been organized in the past. If no – could this be useful and what topics could be addressed? **Seminar for the first -time delegates are conducted in the margins of the plenary meeting.** **CCFFP have also held side events of topics of relevance, i.e. FAO histamine sampling tool.**				
4: Implement effective and efficient work management systems and practices.	4.1: Strive for an effective, efficient, transparent, and consensus based standard setting process.	4.1.4: Ensure timely distribution of all Codex working documents in the working languages of the Committee/ Commission.	Codex documents distributed in a more timely manner consistent with timelines in the Procedural Manual.	- Baseline Ratio (%) established for documents distributed at least 2 months prior to versus less than 2 months prior to a scheduled meeting. - Factors that

				potentially delay the circulation of documents identified and addressed. - An increase in the ratio (%) of documents circulated 2 months or more prior to meetings.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** Does the Committee have a mechanism in place to ensure timely distribution of documents? What could be done to further improve the situation? **Clear and workable timelines are agreed in advanced between the Codex secretariat, host secretariat and leads of working groups or members responsible for the development of working documents.** **Norway as host is committed to providing translation of working documents in a timely manner.** **All members are encouraged to respect deadlines.**				
		4.1.5: Increase the scheduling of Work Group meetings in conjunction with Committee meetings.	Improved efficiency in use of resources by Codex committees and Members	- # of physical working group meetings in conjunction with committee meetings, where appropriate.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** Does the Committee hold physical working groups independent of Committee sessions? If yes – why is this necessary? **Physical Working Groups are mainly scheduled to be held in conjunction with sessions of the Committee.**				
	4.2: Enhance capacity to arrive at consensus in standards setting process.	4.2.1: Improve the understanding of Codex Members and delegates of the importance of and approach to consensus building of Codex work.	Members and delegates awareness of the importance of consensus in the Codex standard setting process improved.	- Training material on guidance to achieve consensus developed and made available in the languages of the Commission to delegates. - Regular dissemination of existing material to Members through Codex Contact Points. - Delegate training programs held in association with Codex meetings. - Impediments to consensus being achieved in Codex identified and analyzed and additional guidance developed to address such impediments, if necessary.
Question to the Committee: Is this activity relevant to the work of the Committee? **YES** Are there problems with finding consensus in the Committee? If yes – what are the impediments to consensus? What has been attempted and what more could be done?				

CCFFP has experienced some difficulties in the past in finding consensus when developing standards and also discussing the need for new work proposals. The Committee tries to address these issues by making the best use of eWG, pWG and/or in-session working groups, and especially for the new work proposal by respecting the relevant provisions of the Procedural Manual. Every effort is also made to ensure the provision of information in advance of meetings to allow sufficient time for discussion.

APPENDIX III

DRAFT CODE OF PRACTICE FOR PROCESSING OF FISH SAUCE

(at Step 8 of the Procedure)

Text to be included in Section 2 of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003).

2.X Fish Sauce

Fish Sauce A translucent, not turbid liquid product with a salty taste and fish flavour obtained from fermentation of a mixture of fish and salt.

Section to be included after Section 16 Processing of Canned Fish, Shell Fish and Other Aquatic Invertebrates of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003).

SECTION X – PROCESSING OF FISH SAUCE

This Section has been developed primarily for use 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, 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, and the optional addition of other ingredients. 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, parts of fish (by-product) and other ingredients may be used in the fermentation process. Raw fish and parts of fish shall be in a good condition, suitable for human consumption. Salt is an essential ingredient in fish sauce production in order to support the growth of halophilic microorganisms that produce effective fermentation, and prevent growth of bacterial pathogens and other undesirable microbial activity, yielding a high quality, safe fish sauce product.

This Section addresses the general processing steps and technical guidance to be employed by fish sauce manufacturers, which could vary by country. Potential hazards and defects at each processing step, starting from the reception of raw material and ending with final product distribution, are identified. In addition, each processing step includes technical guidance for controlling the identified hazards and defects that help ensure consumer safety and product quality. Nevertheless, consistent with HACCP principles, each processor should conduct a hazard analysis of its own operations and product to ensure all hazards are identified and properly controlled.

General considerations of hazards and defects

Hazards

The raw material used in the fermentation to make fish sauce may include both freshwater and marine fish. Some marine fish, such as mackerel, sardines or anchovies, pose a risk of scombrotoxin formation. Fish may be contaminated with undesirable microorganisms, including pathogenic bacteria, thus it is necessary to control raw material on the harvest vessel in compliance with Sections 3 and 4 of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003).

Icing or refrigeration shortly after death of the fish is a common means of preventing undesirable microbial growth and activity on harvest vessels and prior to achieving adequate salt penetration and concentration in the fish at the processing facility. However, immediate salting of fish on board the harvest vessel along with icing or refrigeration may be used for the control of microbiological contamination and decomposition.

A large amount of salt is used in fish sauce processing. Water Phase Salt concentrations of 20 per cent or higher should be achieved and maintained throughout the fermentation to prevent growth and activity of undesirable microorganisms, including pathogens.

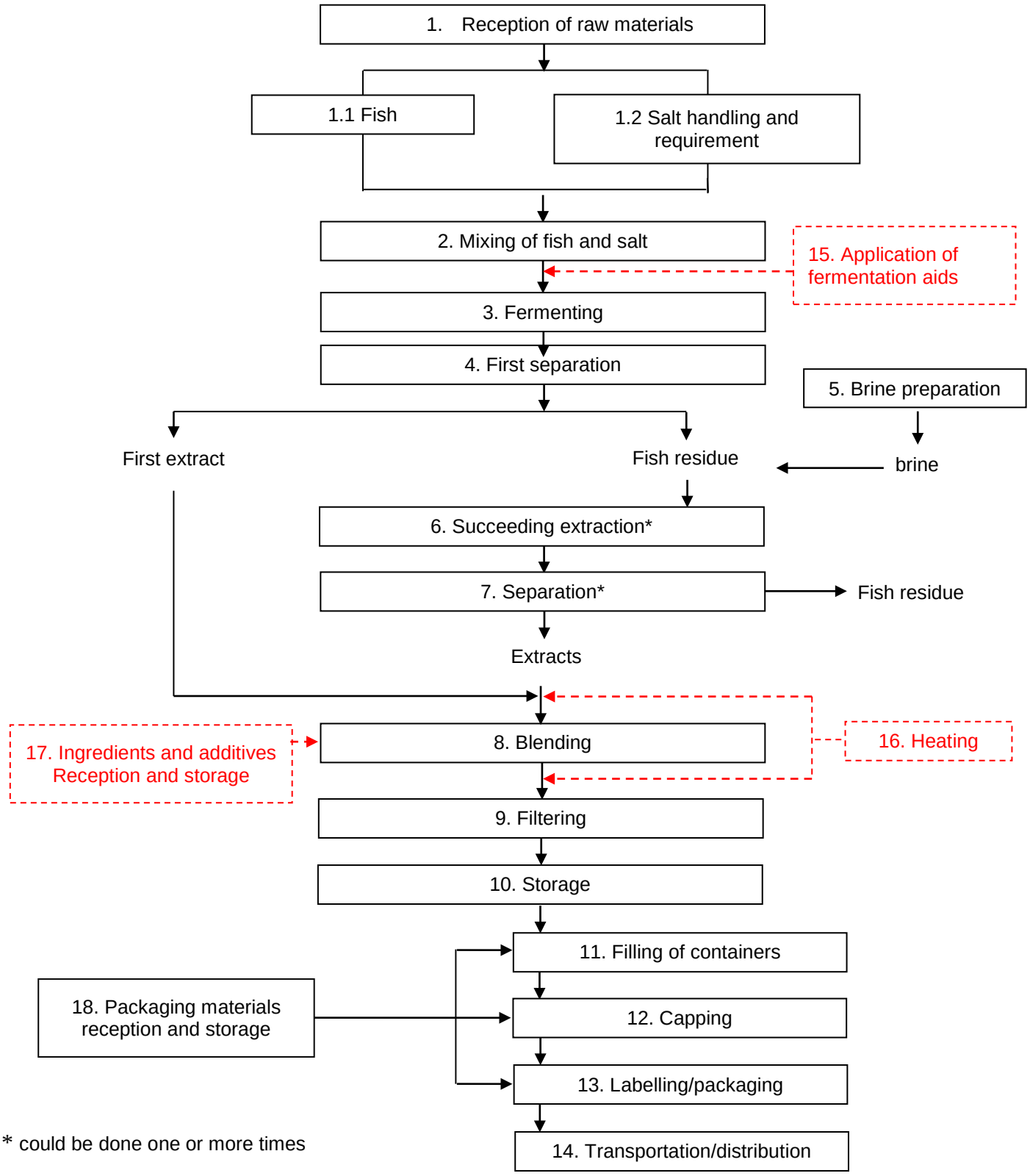
Defects

The odour and taste of fish sauce depends on the free amino acids generated from the fermentation process and the optional addition of extracts that contain water with fewer amino acids. The level of free amino acids generated from the fermentation process varies according to type of fish used, ratio of fish to salt, temperature during fermentation, and fermentation time. Controls of these factors and proper blending of brine extracts and other ingredients are therefore necessary to obtain fish sauce products with desirable odour and taste.

Example of a flow chart of fish sauce processing

This flow chart is for illustrative purposes 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 done one or more times

Dashed lines indicate an optional step

X.1 Reception of raw materials

X.1.1 Fish

Potential hazards: scombrotoxin (histamine), microbiological contamination, biotoxins, chemical contamination (including pesticides and veterinary drug residues), physical contamination

Potential defects: decomposition, physical contamination

Technical guidance:

- Raw materials receiving controls should include the following characteristics where applicable to the identified hazards and defects:
  - For the control of microbial pathogens, scombrotoxin fish poisoning and decomposition;
    - As appropriate, harvest vessel, transportation and storage records documenting that the fish were chilled and maintained at 3°C or below; or
    - As appropriate, harvest vessel and transportation records documenting that the fish were chilled and maintained between 3 °C and 10 °C with the combination of mixing with salt to ensure water phase salt at 10 per cent or higher;
  - Histamine analysis;
    - Histamine verification sampling should be periodically performed using a sample size large enough to provide some assurance (other than documentary records) that harvest vessel cooling and/or salting controls are effective;
  - Organoleptic characteristics, (e.g. appearance, odour, texture) and chemical criteria (e.g. total volatile basic nitrogen (TVB-N));
    - Chemical contaminant criteria (e.g. heavy metals, pesticide residues and nitrates)*;*
    - microbiological criteria (to prevent the processing of raw material containing microbiological toxins) for fish with risk;
    - Veterinary drug residues criteria (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.
- To control the *Clostridium botulinum* hazard, in addition to the chilling or salting controls above, uneviscerated fish greater than 12 cm in length that have not been gutted on the harvest vessel, should be gutted on arrival at the processing facility:
  - Fish should be gutted efficiently, without delay and with care to avoid contamination;
  - Gutting is considered complete when the intestinal tract and internal organs have been removed;
  - Clean seawater or potable water should be used.
- After reception raw material should remain chilled until salted.
- Fish should be rejected if there is evidence that they may 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.

X.1.2 Salt handling and 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 sulfate, magnesium sulfate and chloride as impurities. Solar salt may be stored at least two months before using to obtain a good taste of fish sauce.
- Salt used should be inspected to ensure that it is clean, not previously used, free from foreign matter and foreign crystals, and shows no visible signs of contamination with dirt, oil, bilge or other extraneous materials.
- The size of the salt granules used should be carefully considered. Medium-size salt crystals should be used. If the crystal size used is too small, the outer skin of fish will rapidly loose moisture and salt burn can occur which will prevent salt penetration into the fish. Consequently, the inside of fish can become decomposed. If the crystal size is too large salt will penetrate too slowly, and fish might become decomposed before the preservation effect of salt occurs.
- Salt should be transported and stored dry and hygienically covered in salt bins, storerooms, containers or in plastic sacks.

X.2 Mixing of fish and salt

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

Potential defects: decomposition, physical contamination

Technical guidance:

- Fish and salt should be mixed thoroughly by trained personnel or machines to ensure the proper contact of salt to fish 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 per cent by weight. The common ratios of fish to salt by weight are 3:1, 5:2 and 3:2.
- Fish should attain 20 per cent water phase salt, or ≤ 0.85 water activity in the centre of the largest fish within the appropriate time period for the target pathogen and at ambient temperature.
- Refer to Section 11 for further information about salting fish.

X.3 Fermenting

Potential hazards: physical and chemical contamination (including heavy metals)

Potential defects: undesirable odour and taste, incomplete fermentation

Technical guidance:

- Care should be taken to ensure the cleanliness of the fermentation area and tanks.
- Fermentation tanks should be designed and constructed to permit easy cleaning and disinfection before each use.
- Fermenting tanks should be made from non-hazardous material and be able to prevent product contamination, such as by being resistant to rust and corrosion due to salt that may cause heavy metal contamination.
- Fermentation period at ambient or controlled temperature, typically 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 may be shorter.
- Colour, clarity, aroma (odour) and taste criteria, along with chemical criteria may be monitored to determine the end of the fermentation process.

X.4 First separation

Potential hazards: unlikely

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

Technical guidance:

- Liquid and solid (fish residue) should be completely separated.
- The extract (liquid) should be translucent, not turbid.

X.5 Brine preparation

Potential hazards: unlikely

Potential defects: undesirable odour and taste

Technical guidance:

- Brine used for brine extractions of fish residues should be freshly prepared from potable water and food grade salt and should be saturated.

X.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 requirements in the *Standard for Fish Sauce* (CODEX STAN 302-2011) are fulfilled.

X.7 Separation

Refer to Section X.4

X.8 Blending

Potential hazards: microbiological contamination, scombrotoxin (histamine), unsafe unauthorized additives, allergens

Potential defects: ingredient measurement errors, unauthorized food additives, incorrect pH, incorrect labelling.

Technical guidance:

- Total Nitrogen (TN) of fermentation and extract batches should be analyzed before blending. Total nitrogen, amino acid nitrogen content and pH 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 appropriate 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 with *Class Names and the International Numbering System for Food Additives* (CAC/GL 36-1989).
- Before blending, chemical properties, essential quality factors and histamine should be monitored according to the *Standard for Fish Sauce* (CODEX STAN 302-211), and the results should be recorded. Batches exceeding histamine requirements should be discarded.
- Care should be taken to ensure that labelling is in accordance with Section 4.2 of the *General Standard for the* Labelling *of Prepackaged Foods* (CODEX STAN 1-1985), especially for known allergens.

X.9 Filtering

Potential hazards: unlikely

Potential defects: foreign matter and turbidity

Technical guidance:

- An appropriate filtering system should be checked regularly and properly maintained.

X.10 Storage

Potential hazards: physical and chemical contamination

Potential defects: foreign matter

Technical guidance:

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

X.11 Filling of 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:

- Filling machines should be kept clean to prevent contamination.
- Filling machines should be regularly checked to prevent failure in the filling of container.
- Defective containers should not be used.

X.12 Capping

Potential hazards: unlikely

Potential defects: loose plastic matters, broken caps, foreign matters, leaking containers

Technical guidance:

- After capping containers should be checked for proper seal and leakage.

X.13 Labelling/packaging

Potential hazards: allergens

Potential defects: incorrect labelling

Technical guidance:

- Refer to Sections 8.2.3
- Care should be taken to ensure that labelling is in accordance with Section 4.2 of the *General Standard for the* Labelling *of Prepackaged Foods* (CODEX STAN 1-1985), especially for known allergens.

X.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 and damage of the packaging materials should be avoided.
- Cartons should be applied to avoid the damage of containers.
- Also refer to Section 17.4.

X.15 Application of fermentation aids (optional)

Potential hazards: microbiological contamination

Potential defects: improper fermentation, undesirable flavour/odour

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 microbiological contamination.

X.16 Heating (optional)

Potential hazards: unlikely

Potential defects: over-heating

Technical guidance:

- Adequate temperature and time combination should be applied.

X.17 Ingredients and additives reception and storage (optional)

Potential hazards: chemical, physical and microbiological contamination

Potential defects: loss of quality characteristics

Technical guidance:

- Refer to Sections 8.5.1 and 8.5.2.

X.18 Packaging materials reception and storage

Potential hazards: chemical and physical contamination

Potential defects: misdescription, loss of packaging integrity

Technical guidance:

- Refer to Sections 8.5.1 and 8.5.2
- 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 302-211).
- The containers should be made with material that is high salt content resistant and will not release any harmful substances for human health.
- Packaging materials including caps should be randomly and regularly checked for defects and cleanliness.
- Packaging materials should be stored in a dry and clean place under hygienic conditions.

APPENDIX IV

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

(at Step 5/8 of the Procedure)

Text to be included in Section 2 of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003)

2.X Fresh an quick frozen raw scallop products

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.

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.

Quick frozen scallop meat or quick frozen roe-on scallop meat with added water and/or a solution of water and phosphate "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 of the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014), and a solution of water and/or phosphates and optionally 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 shell.

Roe Is the scallop gonad(s) containing the ovary and/or testis.

Viscera Is comprised of all the internal organs excluding the roe.

Section to be included after Section 7 Processing of Live an Raw Bivave Molluscs of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003)

SECTION X - PROCESSING OF FRESH AND QUICK FROZEN RAW SCALLOP PRODUCTS

In the context of recognizing controls at individual processing steps, this Section provides examples of potential hazards and defects and describes technical guidance, 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 HACCP and/or DAP plans 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 Section 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.

This Section applies to scallop products defined in the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014), including fresh or quick frozen scallop meat; fresh or quick frozen roe-on scallop meat; and quick frozen scallop meat or quick frozen roe-on scallop meat with added water and/or solutions of water and phosphates; and covers harvesting through land-based processing operations.

Refer to Section 3 which outlines the minimum requirements for good hygienic practices for a harvesting vessel and processing establishment prior to the application of hazard and defect analysis.

X.1 Identification of hazards and defects

This Section describes the main hazards and defects that may be associated with scallop products.

Refer also to Section 5.3.3.

X.1.1 Hazards

Refer also to Section 5.3.3.1. When marketing scallop products, all products should meet the relevant contaminant and hygiene provisions outlined in the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014). Where marketing of roe-on scallop meat is concerned, this product should meet the contaminants and relevant hygiene provisions outlined in the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008) and the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014).

X.1.1.1 Marine biotoxins

Scientific data has shown that when algal blooms producing marine biotoxins[1] are present in harvest areas, toxins may accumulate at a hazardous level in the viscera and roe. Therefore, for roe-on scallop meat products, preventive measures should be in place in accordance with the *Standard for Live and Raw Bivalve Molluscs* (CODEX STAN 292-2008).

With respect to scallop meat products, marine biotoxins are not reasonably likely to present a hazard. While the hazard analysis will consider marine biotoxins a potential hazard, this hazard will be excluded or included based upon the species and the available country specific scientific evidence for toxins in that species. During shucking to produce scallop meat, incomplete removal of the viscera and roe may introduce biotoxin health hazards. If marine biotoxins are an identified hazard in the meat of the species then biotoxin control measures should be in place.

If a hazard analysis based on information from monitoring of the harvesting area or from biotoxin screening indicates that toxins are present in the viscera/whole body analysis, control measures should be in place to confirm that scallop products are safe for human consumption e.g. further testing of meat or roe-on scallops or controls ensuring complete removal of viscera and/or roe and any other measures that the Competent Authority may require.

X.1.2 Defects

X.1.2.1 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 fibres 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 and potentially hazardous, such as the grinding of teeth on sand and silt while chewing.

X.1.2.2 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 a period 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 controls should be in place by the producer and processor in order to avoid water uptake or limit any water uptake to that which is technologically unavoidable.

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 percentage of water indicated on the label (to avoid unfair trade practice or consumer fraud).

The use of a solution of water and phosphate, or added water alone, is only permitted in quick frozen scallop products.

X.2 Processing operations

The commercial harvest practices of scallops are variable. Shucking can occur on board scallop vessels equipped for such operations or in land-based processing facilities. Scallop fishing may be either short (typically 1-2 days) or long (typically 3-15 days).

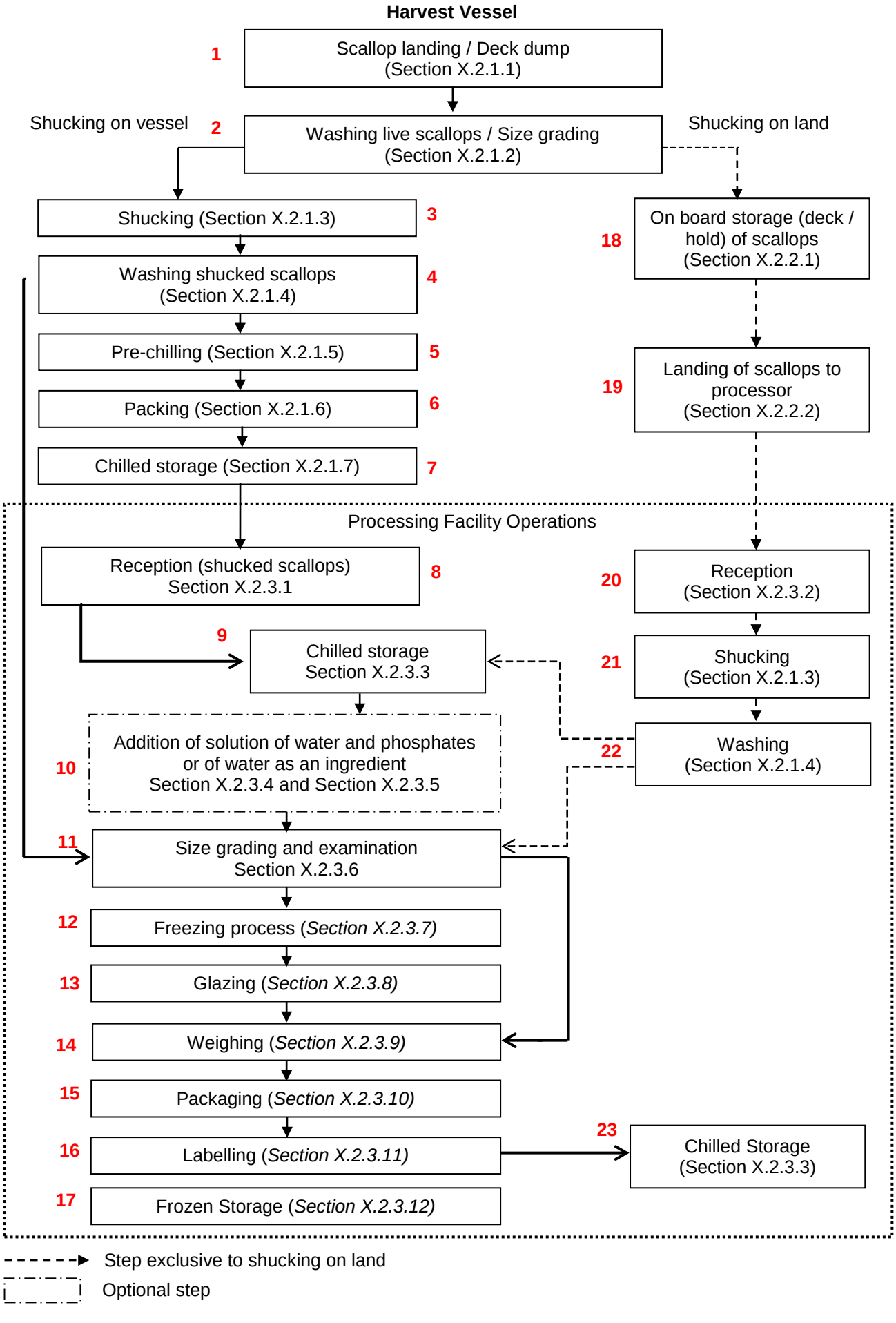
[1] Marine biotoxins: e.g. paralytic shellfish poisoning toxin (PSP); amnesic shellfish poisoning toxin (ASP); diarrhetic shellfish poisoning toxin (DSP).

When scallops are shucked in land-based facilities the harvest vessel voyages are always short in order to maintain the scallops in good condition until shucking. Using this practice, scallops are landed on board harvest vessels, and chilled and stored under temperature control.

When scallops are shucked on board harvest vessels, the voyages can be short or long. Using this practice, the scallops are landed on board harvest vessels, shucked, washed, pre-chilled, drained and bagged, then stored in iced, or refrigerated, or frozen storage until the scallop vessel has landed on shore.

Figure X.1 Example of a flow chart for the production of scallop products

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.



X.2.1 Vessel operations (shucking on vessel)

This Section is designed to cover the handling and processing of fresh Scallop Meat and Roe-on Scallop Meat on harvest vessels where the scallops are shucked on-board the vessel.

X.2.1.1 Scallop landing / deck dump (Processing Step 1)

Potential hazards: microbiological contamination; biotoxins and chemical contamination

Potential defects: physical damage, dead scallops

Technical guidance

- Refer to Section 7.3.
- Scallops showing evident signs of death or damage should be disposed of in a proper manner. Dead scallops can be identified through sensory evaluation, covering characteristics such as shell gaping, lack of response to percussion, sour odour, and/or viscera exposed outside the shell, picking of muscle or mantle, evident signs of decomposition, or other effective methods to assess viability.
    - Rough handling of live scallops should be avoided to minimize stress and injury that could lead to the death of scallops prior to processing.

X.2.1.2 Washing live scallops / size grading (Processing Step 2)

Potential hazards: microbiological,chemical and physical contamination

Potential defects: foreign matter, physical damage

Technical guidance:

- Refer to Section 7.3
- Washing should be carried out using pressurized clean sea water or salt water made from potable water. If salt water other than sea water is used it should be prepared from potable water and of three per cent of food grade salt to minimize the uptake of moisture. The salinity of the salt water should be monitored.
- Scallops should be sorted and graded at this point.

X.2.1.3 Shucking (Processing Steps 3, 21)

Potential hazards: physical contamination, marine biotoxins; microbiological contamination

Potential defects: remaining viscera; remaining roe (in the case of Scallop Meat); dead or damaged scallops, foreign matter, cuts and tears in the flesh

Technical guidance:

- Refer to Section 7.8.1
- Scallops should be shucked as soon as possible after harvest.
- For shucking on vessel or land, dead scallops observed during shucking should be disposed of in a proper manner because the time of death is unknown and the quality of the meat and roe may be unacceptable. Dead scallops can be identified through sensory evaluation, covering characteristics such as shell gaping, lack of response to percussion, sour odour, and/or viscera exposed outside the shell, picking of muscle or mantle, or other effective methods to assess viability.
- For Scallop Meat, care should be taken to ensure that the viscera and roe are completely removed in order to reduce the risk of contamination with biotoxins and pathogens associated with the viscera.
- For Roe-on Scallop Meat, care should be taken to ensure that the viscera are completely removed.
- Care should be taken to ensure that workers' hands, shucking tables, containers and knives are properly cleaned and disinfected.
- Workers should be trained so as to avoid damage to scallops.
- The shucked scallops should proceed immediately to the washing step to minimize their exposure to ambient temperatures above 4 °C.

X.2.1.4 Washing shucked scallops (Processing Steps 4, 22)

Potential hazards: shell fragments / foreign matter, marine biotoxins

Potential defects: objectionable matter; foreign matter; excess water uptake

Technical guidance:

- Immediately after shucking, clean sea water or salt water made from potable water should be used to wash scallops to remove remains of viscera, shell fragments, sand, and foreign matter such as debris.
- During washing, scallops should be gently agitated and separated from each other in order to allow the removal of viscera remains, shell fragments and other foreign matter such as sand.
- If salt water other than sea water is used it should be prepared from potable water and three per cent 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 time between the water and scallops should be monitored and limited to minimize water uptake to that which is technologically unavoidable.
- Washed scallops should be adequately drained.
- After washing, the shucked scallops should be immediately pre-chilled, packed and refrigerated or iced and kept at the adequate temperature (between 0 °C and 4 °C).

X.2.1.5 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 scallops should be employed directly after shucking and washing to reduce the core temperature prior to being placed in vessel chilled storage. This step can minimize the amount of ice melt and consequently freshwater contact with the scallops during chilled storage. Rapid chilling will also minimize subsequent drip loss.
- Pre-chilling should include the immersion of the scallops in refrigerated seawater (clean seawater cooled by a suitable refrigeration system in fixed tanks chilled by mechanical refrigeration) or in 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 that which is technologically unavoidable.
- Water used for pre-chilling should be periodically replaced to minimize the bacterial load, maintain salinity, and ensure functional water temperature (i.e. ≤ 0 °C).

X.2.1.6 Packing (Processing Step 6)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: damaged scallops, foreign matter/filth, excess water uptake

Technical guidance:

- Shucked scallops should be stored in clean containers or bags made of a suitable material appropriate to be in contact with food.
- Documentation should be maintained to allow traceability of scallop batches from the harvest area, in accordance with the jurisdictional requirements. Also refer to Sections 7.10 and 3.7 as applicable.
- Storage containers/bags should not be too large, should be appropriately filled and not over-stacked in order to facilitate cooling and to prevent scallops from being damaged.

X.2.1.7 Chilled Storage (Processing Step 7)

Potential hazards: microbiological contamination

Potential defects: decomposition; excess water uptake; physical damage

Technical guidance:

- Where ice is used, containers/bags of scallops should be surrounded by sufficient finely divided ice and stored scallops should be examined regularly to ensure sufficient ice cover of the product.
- Where ice is used, measures should be taken that avoid or limit water uptake to that which is technologically unavoidable (e.g. shorter voyages, rapid and complete precooling, effective holding area insulation, impermeable containers, impervious film between ice and the container).
- The chilled storage compartment and / or storage containers should be adequately drained so that freshwater from the melted ice does not stay in contact with the product.
- Temperatures should be monitored to ensure that the stored scallops remain at a temperature between 0 °C and 4 °C.
- Care should be taken to prevent scallop damage during chilled storage. Storage containers should be identified by harvest date and other relevant product information to ensure proper utilization of the scallops at the land-based processing facility.
- The duration of shucking on vessel 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 on board chilled storage locations) should be considered to facilitate proper utilization of the scallops.

X.2.2 Vessel operations (shucking on land)

This Section covers the handling and storage of live scallops on board harvesting vessels where shucking is done in the land based processing facility. The common steps for vessel operations and subsequent land based processing for scallops shucked on land are shown in the right branch of the example flow diagram (Figure X.1).

X.2.2.1 On board storage (deck / hold) of scallops (Processing Step 18)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: decomposition; physical damage; stress through thermal shock

Technical guidance:

- Refer to Section 7.3.
- Scallops stored on deck for short periods of time can be hosed down periodically using clean seawater to help lower temperatures in warm ambient conditions.

X.2.2.2 Landing of scallops to processor (Processing Step 19)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: Physical damage

Technical guidance:

- Refer to Section 7.3 as well as closely related guidance in Step 8 (X.2.3.1).
- During landing scallops should be unloaded without undue delay and not be subject to excessive physical shock through rough handling.
- Transportation units should be clean, free of contamination and temperature controlled where necessary.
- Appropriate documentation should be completed to comply with any regulatory requirements.

X.2.3 Processing facility operations

This Section covers the processing of scallop products as delineated in the example flow diagram (Figure X.1).

X.2.3.1 Reception (shucked scallops) (Processing Step 8)

Potential hazards: marine biotoxins, microbiological, chemical and physical contamination

Potential defects: decomposition; excess water uptake; parasites; objectionable matter; foreign matter

Technical guidance:

- Product specifications commonly include the following provisions:
  - Sensory characteristics such as appearance, flavour, odour, texture, etc.;
  - Species identification;
  - Acceptable upper limit moisture content;
  - Workmanship (e.g. presence of viscera/roe);
  - Chemical contamination (e.g. heavy metals);
  - Presence of foreign matter;
  - Visible parasites.
- 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 toxin monitoring programs or end product testing. As per X.1.1.1 this consideration would also apply to scallop meat where the hazard analysis has determined that marine biotoxins are a hazard in the scallop meat.
- 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 Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014).
- Appropriate procedures should be in place for scallop handlers and appropriate personnel to verify that specifications are met. This could include, but is not limited to, inspecting the product and reviewing product information in commercial documentation.

X.2.3.2 Reception (Processing Step 20)

Potential hazards: marine biotoxins, microbiological, chemical and physical contamination

Potential defects: dead or damaged scallops; parasites; objectionable matter; foreign matter

Technical guidance:

- Refer to Section 7.6.1
- Scallops should be unloaded without undue delay and with care and adequately chilled to avoid microbiological contamination and decomposition.
- Scallops showing evident signs of death or damage should be disposed of in a proper manner. Dead scallops can be identified through sensory evaluation, covering characteristics such as shell gaping, lack of response to percussion, sour odour, and/or viscera exposed outside the shell, picking of muscle or mantle, evident signs of decomposition, or other effective methods to assess viability.
  - Rough handling of live scallops should be avoided to minimize stress and injury that could lead to the death of scallops prior to processing.
- Product specifications commonly include the following provisions:
  - Evident signs of death;
  - Broken shells;
  - Species identification;
  - Chemical contamination (e.g. heavy metals);
  - Presence of foreign matter;
  - Visible parasites.

- 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 toxin monitoring programs or end product testing. As per X.1.1.1 this consideration would also apply to scallop meat where the hazard analysis has determined that marine biotoxins are a hazard in the scallop meat.
- 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 Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014).
- Appropriate procedures should be in place for scallop handlers and appropriate personnel to verify that specifications are met. This could include, but is not limited to, inspecting the product and reviewing product information in commercial documentation.

X.2.3.3 Chilled storage (Processing Steps 9, 23)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: decomposition, physical damage

Technical guidance:

- Refer to Section 7.6.5.2
- Stock rotation schemes should be used to ensure proper utilization of the scallop products. For scallops packed in containers, their identification tag facilitates the determination of the harvest date.
- Scallop products should be stored between 0^{o}C and 4^{o}C. The temperature should be monitored during chilled storage.
- Product should be stacked in a manner that facilitates adequate and uniform temperature distribution to all parts of the stored product.
- If freshwater ice is used to chilled scallops, care should be taken to provide adequate drainage and minimize water uptake (See Section X.2.1.7). Any measurable absorbed water from ice should be properly measured and labelled.

X.2.3.4 Addition of a solution of water and phosphate (Optional) (Processing Step 10)

Potential hazards: microbiological and chemical contamination, use of unapproved or non-food grade additives

Potential defects: incorrect application of formulation of phosphate solution, excess water uptake; off-flavours and textures, decomposition; inaccurate measurement and labelling of percent added phosphate solution

Technical guidance:

- Food grade phosphates should be used in compliance with the requirements of the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014).
- Addition of phosphate solutions (phosphates and water) is an optional step, and results in a different product requiring different descriptive labelling.
- The quantity of phosphate solution added to scallops (for the production of quick frozen products only) 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 labelling purposes.
- Refer to Sections 8.5.1 and 8.5.2 for guidance on the reception and storage of ingredients.

X.2.3.5 Addition of water (Optional) (Processing Step 10)

Potential hazards: microbiological and chemical contamination

Potential defects: inaccurate measurement and labelling of percentage added water

Technical guidance:

- The quantity of water added to scallops as an ingredient (for the production of quick frozen products only) should be limited to the lowest possible level.
- The weight of added water and scallops should be controlled and accurate in order to calculate the percentage added water for labelling purposes.

X.2.3.6 Size grading and examination (Processing Step 11)

Potential hazards: microbiological contamination

Potential defects: decomposition, improper size variation, parasites, physical contamination (filth)

Technical guidance:

- Size grading of scallops is typically undertaken through mechanical graders of various degrees of sophistication. There is a possibility of scallops becoming trapped in the bars of the graders so that regular inspection and cleaning is required to prevent “carry-over” of old scallops.
- Grey or black adductor meat, which indicates that the scallop was dead at the time of shucking and is likely decomposed and may present a consumer health hazard, should be removed from the lot.
- Scallops with an objectionable level of parasites should be culled from the lot.
- Containers of graded and examined scallops should be kept cool to ensure that the internal temperature is kept between 0 ^{o}C and 4^{o}C.
- Exposure to ambient temperatures above 4^{o}C should be minimal and monitored.

X.2.3.7 Freezing Process (Processing Step 12)

Potential hazards: unlikely

Potential defects: texture deterioration, freezer burn

Technical guidance

- Refer to Section 8.3.1.

X.2.3.8 Glazing (Processing Step 13)

Potential hazards: unlikely

Potential defects: dehydration

Technical guidance

- Refer to Section 8.3.2.
- When scallops are individually quick frozen, glaze is usually applied. If scallops are block frozen glaze is not commonly applied (block freezing could occur after the packaging step).

X.2.3.9 Weighing (Processing Step 14)

Potential hazards: unlikely

Potential defects: incorrect net weight

Technical guidance:

- Refer to Section 8.2.1
- 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.2.3.10 Packaging (Processing Step 15)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: misdescription, loss of quality characteristics of packaging materials

Technical guidance:

- Refer to Sections 7.6.4.2 and 8.5.2.
- For fresh scallops and scallops intended to be block frozen, scallops should be adequately drained before packing into cartons.

X.2.3.11 Labelling (Processing Step 16)

Potential hazards: unlikely

Potential defects: incorrect labelling; inaccurately declared added phosphate solution or added water

Technical guidance:

- Information on the labels should be in compliance with the *General Standard for the Labelling of Pre-Packaged Foods* (CODEX STAN 1-1985) and the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014).
- When a solution of water and phosphate is used in the process or water is added as an ingredient in quick frozen scallops, this shall be declared on the label in accordance with the *Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014). Also refer to Section X.2.3.4 or Section X.2.3.5

X.2.3.12 Frozen Storage (Processing Step 17)

Potential hazards: unlikely

Potential defects: dehydration; decomposition; development of rancid flavours and odours; loss of nutritional quality

Technical guidance:

- Refer to Section 8.1.3
- The time to development of rancid flavours and odours for the packaging and frozen storage conditions should be determined to assure that frozen product is distributed with adequate remaining shelf life.

APPENDIX V

PROPOSED DRAFT CODE OF PRACTICE FOR PROCESSING OF STURGEON CAVIAR

(at Step 5/8 of the Procedure)

Text to be included in Section 2 of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003)

2.X Sturgeon caviar

Fish egg Non-ovulated eggs separated from the connective tissue of ovaries. Ovulated eggs may be used from aquacultured sturgeons.

Caviar The product made from fish eggs of the *Acipenseriae family* by treating with food grade salt.

Section to be included after Section 16 Processing of Canned Fish, Shell Fish and Other Aquatic Invertebrates of the *Code of Practice for Fish and Fishery Products* (CAC/RCP 52-2003)

SECTION X – PROCESSING OF STURGEON CAVIAR

General considerations:

In the context of recognizing controls at individual processing steps, this Section provides examples of potential hazards and defects and describes technal guidance that can be used to develop control measures and corrective actions. At a particular step, only the hazards and defects that 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 HACCP and DAP analysis. However, within the scope of this Section, it is not possible to give details of critical limits, monitoring, record-keeping and verification for each of the steps as these are specific to particular hazards and defects, and to the process used.

This Section applies to products covered by the *Standard for Sturgeon Caviar* (CODEX STAN 291-2010), and covers the production of caviar, by extraction of non-ovulated eggs and the production of caviar from ovulated eggs by induction of ovulation using natural means as well as by the use of authorized products. Potential hazards and defects that may be introduced at a processing step are identified in this Section, a summary of major defects and additional prerequisites programs are listed below:

Microbial hazards: Ovaries remain sterile as long as they are located in the belly cavity. Contamination may occur through contact with hands, equipment and utensils, air, water, additives, fish skin and guts. Therefore, implementation of good hygienic practices (Section 3), use of potable or clean water and regular monitoring are very important. Time/ temperature control (shortest possible processing time under cold chain conditions) followed by rapid transfer to cold area will reduce the risk of microbial growth and related toxin production.

Proteolytic and non-proteolytic *Clostridium botulinum* are spore forming microbial hazards which should be controlled in packed caviar. These pathogens are controlled by an adequate quantity of salt (product salt content ≥ 3g/100g; ≥ 5 per cent salt in the water phase; a water activity of < 0.97) and cold storage, (temperatures of ≤ 4 °C). Other controlling factors shown to prevent *Clostridium botulinum* growth and toxin production in the caviar can be used when shown to be effective by scientific studies. In addition to the control of *C. botulinum*, countries producing caviar should ensure that the process used (e.g. pasteurization step, use of permitted food additives, percentage salt, microbiological testing, temperature controls) will control non-spore forming microorganisms (e.g. *Salmonella*, *Listeria monocytogenes*).

Chemical hazards: Contaminants such as heavy metals, pesticides, oil derivatives, residues of veterinary drugs, including hormones, need to be considered. Technical guidelines mentioned in Section 6 should be considered. Potential chemical hazards can also come from the water used for washing fish eggs and from other processing steps. Therefore, potable or clean water should be used for this purpose. Contaminants from the salt and additives may also introduce chemical hazards.

Physical hazards: Sharp and hard fish body fragments, glass and metal inclusion (from utensils and packaging materials) can be introduced. The introduction of these hazards should be controlled. The control measures should be monitored and verified.

Defects: potential defects could be classified in three categories:

1- Development of chemical decomposition due to temperature abuse during caviar production process, handling and storage. This can be prevented by controlling time and temperature.

2- Fat tissues, ovarian follicles and blood clots in caviar (from slaughtered sturgeon), could be avoided by proper bleeding, careful sieving and ovarian washing.

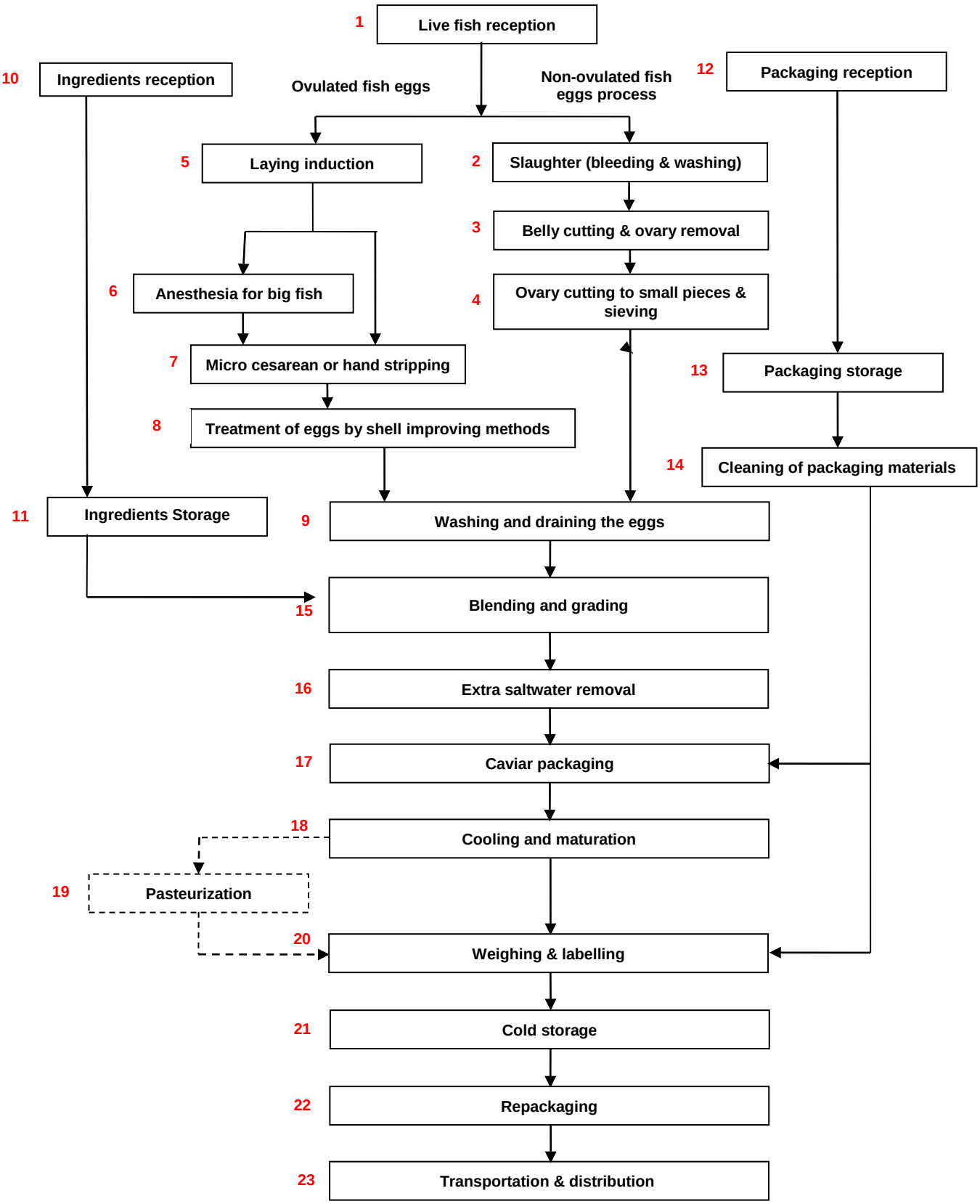
3- A number of factors can have an effect on physico-chemical and sensory properties of caviar; for example; eggs breakage, shell loosening, eggs softening or hardening as a result of overpressure on caviar and temperature abuse. Impure salt or additives, dust, smoke and aromatics in detergents or disinfecting agents can be absorbed by caviar and affect flavour and taste.

This code provides guidance for the common steps used for processing caviar as shown in the Example Flow Chart for Caviar Production (Figure x.1).

Figure x.1 Example flow chart for caviar production

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.

References correspond to relevant Sections of the Code



X.1 Live fish reception (Processing Step 1)

Potential hazards: chemical contamination (e.g. oil pollutants, heavy metals, pesticides, drugs residue)

Potential defects: decomposition, physical damage

Technical guidance:

- Refer to Sections 6.1, 6.2 and 6.3.
- Farmed fish should be harvested from growing areas where water quality should comply with Section 6.1.2.
- Fish handling should be undertaken in a manner to avoid stress (e.g. direct sunlight, high temperature, oxygen depletion) and contamination.
- In order to prevent the mortality of live fish which could result in decomposition of fish eggs, fish should be handled with care, stored in clean (filtered), oxygenated water and rapidly prepared for ovary removal.
- Live fish should be transported to a processing establishment quickly without causing physical damage.
- Training should be provided to persons who harvest, handle or receive fish.
- All documents related to health status of farmed fish such as veterinary drug or medicated feed dosage and period of treatment as well as feed composition should be reviewed at the reception points. For example, it should be ensured that the fish has been subjected to the proper withdrawal time for the specific products in question e.g. antibiotics or hormones.
- To facilitate traceability / product tracing of the fish, a record keeping system should be in place including a name and address of the farm sites (in case of farmed fish). If fish is kept out of water, the period of time should be short and the places used for this purpose should be clean.
- In the case of fresh dead fish, the fish should be stored under refrigeration or in cold clean water.

X.2 Slaughter (bleeding and washing) (Processing Step 2)

Potential hazards: microbiological contamination

Potential defects: blood remaining in fish organs

Technical guidance:

- Stunning may be used to reduce stress after fish are harvested. It should be done by a skilled person and in accordance with the technical guidelines established by the OIE in order not to harm or damage the fish or eggs.
- As soon as the live fish have been slaughtered the fish should be bled to prevent blood dispersion into the eggs.
- Fish should be bled by cutting gills in both sides or by cutting the tail.
- Bleeding process should be fully completed before ovary removal.
- After bleeding is completed, fish should be washed with potable or clean water to clean all residual blood leftover from surface and reduce the risk of contaminating the eggs.
- Suitable facilities for hygienic waste disposal should be available in bleeding site.

X.3 Belly cutting and ovary removal (Processing Step 3)

Potential hazards: microbiological and physical contamination

Potential defects: physical damage to the eggs, off flavour, off odour, decomposition

Technical guidance:

- Prior to cutting, the belly part (around cutting area) should be fully brushed with potable or clean water to remove all foreign matter (e.g. sand and blood) and to reduce microbial load on the skin.
- All equipment/utensils used for cutting the belly, such as tables, knives, bowls used for ovary transfer and storage should be cleaned and disinfected.

- Cleaning and disinfection agents used for hand washing and on equipments should not affect the flavour and odour of the eggs.
- Belly cutting should be done by trained and skilled personnel using an appropriate method to preclude any contamination with viscera and damage to the eggs.
- All utensils that come in contact with fish eggs should not be used for other purposes and should be carefully cleaned, disinfected and stored in a proper place to avoid any contamination.
- Knives that are used for belly cutting should be distinct from those used for ovary cutting.
- If appropriate, the personnel performing the abdominal incision should be different from that in charge of cutting the ovaries.

X.4 Ovary cutting to small pieces and sieving (Processing Step 4)

Potential hazards: microbiological contamination

Potential defects: physical damage to the eggs, off flavour and off odour, eggs with bad consistency

Technical guidance:

- Prior to cutting to small pieces, ovaries could be placed in cold potable or clean water or cold potable or clean water with added salt to improve consistency.
- To prevent microbial contamination:
  - all caviar processing steps should be performed within areas set apart from belly cutting and gutting areas in order to prevent possible microbial cross-contamination.
  - all utensils and work surfaces should be cleaned and disinfected. Cleaning and disinfection agents used should not affect the flavour and odour of the eggs.
  - staff should be trained and have appropriate experience in cutting and sieving.
  - sieves should be washable and made from suitable material. Mesh size should be matched with egg size.
- Ovaries should be cut into small pieces to improve the sieving process and reduce friction among eggs.
- Sieving should be performed in a manner that minimizes damage to the eggs to the extent possible while removing ovary follicles and other undesirable matter (fat and blood).
- The ambient temperature and duration of exposure to the ambient temperature should be controlled and monitored to prevent microbial growth.

X.5 Laying induction (Processing Step 5)

Potential hazards: chemical contamination (residues of veterinary drugs), use of unapproved drugs

Potential defects: quality deterioration

Technical guidance:

- If hormones are used to induce ovulation (or to assist in the release of eggs), the hormones should have undergone regulatory assessment and be approved for use for the purpose of food production by the competent authorities having jurisdiction.
- Hormone dosage and treatment time should be applied in accordance with fish size and manufacturer's instructions.
- Eggs should only be harvested after the appropriate withdrawal period, following the injection of the hormone has been completed.

X.6 Anaesthesia for big fish (Processing Step 6)

Potential hazards: chemical contamination (residues of veterinary drugs), use of unapproved drugs

Potential defects: physical damage to the eggs, off flavour and off odour, quality deterioration

Technical guidance:

- If using electric shock, it should be done by skilled personnel with allowed voltage to minimize stress to fish and physical damage to eggs.

- If anaesthetics are used, their use must be approved for sturgeon intended for human consumption by the competent authorities having jurisdiction.
- Anaesthetic dosage and treatment time should be applied in accordance with fish size and the manufacturer's instructions.
- Refer to Section 6.3.2.

X.7 Micro caesarean or hand stripping (Processing Step 7)

Potential hazards: microbiological contamination

Potential defects: physical damage to the eggs, foreign matter, off flavour and off odour

Technical guidance:

- Prior to cutting, belly area should be appropriately brushed and washed with potable or clean water to remove all foreign matters (sands and blood) and reduce microbial load.
- Cleaning and disinfection agents used for hand washing and on equipment should not affect the flavour and odour of eggs.
- Belly-cutting and the extraction of the eggs should be done by skilled personnel to minimize contamination with fish guts and faecal matter and reduce physical damage to the eggs.
- Hand stripping should be performed gently taking into account the anatomical position and direction of the oviduct in order to release the eggs quickly.

X.8 Treatment of eggs by shell improving methods (Processing Step 8)

Potential hazards: chemical contamination (e.g. use of texturizing agents), microbiological contamination, drug residue

Potential defects: damage to the egg texture, off flavour and off odour, quality deterioration

Technical guidance:

- Shell texturizing agents are not permitted in accordance with Section 4 of the *Standard for Sturgeon Caviar* (CODEX STAN 291-2010)
- Treatment of eggs by shell improving methods should occur in a manner that does not result in chemical or microbiological contamination and growth, and does not damage the eggs nor alter flavour, odour or cause quality deterioration.

X.9 Washing and draining the eggs (Processing Step 9)

Potential hazards: microbiological and chemical contamination

Potential defects: quality deterioration (damage to texture, off flavours and off odours), residues of undesirable matter (fat, blood and ovary remnant).

Technical guidance:

- The water used for washing the eggs should be potable or clean, free of any off odour and taste and it should be cold enough to prevent a loss in the texture quality. Salt may be added to the water in order to prevent water uptake by the eggs.
- The eggs should be washed until they are free from all foreign matter.
- The eggs should be drained using a sieve to avoid water remaining in fish eggs which may impact the final weight at packaging.
- Draining should be performed in a chilled cold room or in a temperature-controlled environment away from any source of contamination.

X.10 Ingredients reception (Processing Step 10)

Potential hazards: microbiological, chemical and physical contamination (impurities), non permitted additives

Potential defects: quality deterioration, foreign matter

Technical guidance:

- Refer to Section 8.5.1.

- Additives should be used in compliance with requirements mentioned in Section 4 of the *Standard for Sturgeon Caviar* (CODEX STAN 291-2010).
- The ingredients should be inspected to ensure that they are clean and show no visible sign of contamination with dirt, oil or other extraneous materials.
- Ingredients should be sourced from reliable suppliers, received with appropriate documentation about their composition and verified against the specifications requested.
- Salt used for caviar should be in compliance with the *Standard for Food Grade Salt* (CODEX STAN 150-1985).
- Salt impurities such as magnesium (Mg^{2+}) and calcium (Ca^{2+}) can affect the taste of the caviar and the penetration of sodium chloride into the eggs.
- Granule size of salt crystals and permitted additives should be tiny to allow for rapid dissolution and absorption into the eggs and to prevent damage to the eggs.

X.11 Ingredients storage (Processing Step 11)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: loss of effectiveness, moisture absorption, dust and foreign matters.

Technical guidance:

- Refer to section 8.5.2.
- Salt and additives should be packed and protected from chemical pollutants and foreign matters such as dust that may affect safety, odour and other sensory characteristics.
- Suitable procedures and controls should be in place to prevent exposure of ingredients to insects and pests.
- Storage area and packaging materials used for additives and salt should comply with Section 3.
- All stored additives and salt should be kept with labels with the name, expiry date and storage requirements.

X.12 Packaging reception (Processing Step 12)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: improper quality of packaging materials (material, paint coating, construction, sealing, corrosion). Inaccurate or misleading label information, contaminated packaging materials, foreign matter inclusion.

Technical guidance:

- Refer to Section 8.5.1.
- All packaging materials such as metal or plastic cans, glass jars and rubber bands should be resistant to the components of caviar especially salt and additives and be able to preserve the product during its shelf-life without any quality loss.
- All packaging materials should be verified prior to use by trained personnel to ensure that specifications are met and are not damaged or contaminated.
- Any non-compliant items should be rejected and all corrective measures should be recorded.
- Prior to their application, labels should be verified to ensure that all information declared meets, where applicable the *General Standard for the Labelling of Pre-Packaged Foods* (CODEX STAN 1 - 1985) and labelling provisions of the *Standard for Sturgeon Caviar* (CODEX STAN 291-2010).
- Packaging materials and labels should be sourced from reliable suppliers and accompanied by appropriate documentation on the specifications and composition.

X.13 Packaging storage (Processing Step 13)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: quality deterioration, physical damage, foreign matter inclusion

Technical guidance:

- Refer to Section 8.5.2.
- Packaging materials and labels should be stored in dry and clean area to avoid any chemical and microbial contamination.
- Storage area should be clean and free of insects and pests.
- Trained personnel should periodically monitor the storage environment and records should be kept.

X.14 Cleaning of packaging materials (Processing Step 14)

Potential hazards: microbiological, chemical and physical contamination

Potential defects: damage of containers

Technical guidance:

- The cleanliness, integrity and safety of packaging materials should be monitored prior to use, to prevent cross-contamination of the caviar.
- Cleaning and disinfection should be performed outside of the processing area. Controls should be done at the reception step and related records should be checked.
- Cleaning and disinfection of packaging materials should be done by trained personnel with potable or clean water and permitted detergents and disinfectants.
- The effectiveness of the cleaning and disinfection of packaging materials should be validated, and revalidated after any changes of the procedures, e.g. change of disinfectants, cleaners.

X.15 Blending and Grading (Processing Step 15)

Potential hazards: microbiological and physical contamination (e.g. glass and metal inclusion)

Potential defects: foreign matters, additive misuse

Technical guidance:

- The quantity or weight of eggs, salt and as applicable, additives should be measured adequately with calibrated equipments to ensure that the appropriate percentage of salt and additives are met.
- Additives should be used in compliance with the *Standard for Sturgeon Caviar* (CODEX STAN 291-2010).
- Additives should be used under conditions of good manufacturing practices in compliance with Section 3 of the *General Standard for Food Additives* (CODEX STAN 192-1995).
- The ingredients should be verified prior to use to ensure they are free from hazardous glass or other foreign matters.
- To prevent the growth and toxin production by non-proteolytic *Clostridium botulinum*, the quantity of salt added should result in at least 5% water phase salt or a water activity of < 0.97.
- The ingredients and additives should be blended uniformly with the eggs.
- The ambient temperature, humidity, and the duration of exposure to the ambient temperature, should be controlled and monitored so that it does not affect the homogeneous distribution of ingredients and additives and to prevent microbial growth.
- Grading and blending should be done by trained personnel.

X.16 Extra saltwater removal (Processing Step 16)

Potential hazards: microbiological contamination

Potential defects: quality deterioration due to improper saltwater removal

Technical guidance:

- Extra saltwater removal (sieving) should be done in a manner that does not damage the quality of caviar.
- Extra saltwater removal should be performed by trained personnel.

- The salt content of final product should be equal to or above 3g/100g and below or equal to 5g/100g (≥ 5 per cent in the water phase or a water activity of <0.97).
- The ambient temperature and duration of exposure to the ambient temperature should be controlled and monitored to prevent microbial growth.

X.17 Caviar packaging (Processing Step 17)

Potential hazards: microbiological contamination

Potential defects: oxidation, physical damage, off flavour, egg discoloration due to corrosion of container's epoxy coatings, improper coding, rusting

Technical guidance:

- All packaging materials should be verified prior to use to ensure that they are not contaminated and are free from physical damage. These materials should be dry.
- The cans/jars should be filled to capacity to minimize the air space but should not put pressure on the caviar.
- Vacuum and sealing of cans or jars should be performed by trained personnel to ensure that air is fully removed from cans/jars to inhibit the growth of aerobic micro-organisms as well as fat oxidation.
- During the vacuum sealing process, the cans/jars should be kept clean from salt water that leaves the cans/jars.
- The ambient temperature and duration of exposure to the ambient temperature should be controlled and monitored to minimize microbial growth by maintaining caviar temperature ≤ 4 ºC.
- The primary coding should be verified by trained personnel to ensure that it is legible, accurate and permanent.

X.18 Cooling and maturation (Processing Step 18)

Potential hazards: microbiological contamination

Potential defects: decomposition, quality deterioration

Technical guidance:

- Packaged caviar should be stored in an appropriate manner prior to final cold storage (for example in a refrigerator at a temperature between 2 °C and 4 °C for 24 hours) upon packaging to facilitate salt absorption, equilibrium and maturation (equal salt distribution in caviar, giving enough time for saltwater removal) and also to minimize microbial growth.
- Laboratory checks should be performed for proper caviar salt content (e.g. by water phase salt determination or by water activity measurement and weight as appropriate) after maturation is complete.
- Cooling system should be cleaned and equipped with thermometer and thermograph to frequently monitor and record caviar temperature.
- Cooling system should be frequently calibrated to ensure accuracy and efficiency.

X.19 Pasteurization (optional step) (Processing Step 19)

Potential hazards: microbiological contamination

Potential defects: taste and flavour change, hardening of caviar grains

Technical guidance:

- Pasteurization process should be performed and monitored by trained personnel to ensure process specifications are followed and the equipment is functioning appropriately.
- The containers should be sealed hermetically prior to pasteurizing in order to prevent post-processing contamination.
- Caviar cans/jars should be cooled to lower temperature (0 °C to 4 °C) immediately after pasteurization to prevent germination, growth and toxin production of spore forming microorganisms and prolonged heating of proteins which might affect taste and texture.

- Pasteurization time and temperature should be determined in relation to can/jar volume, shape and material, as well as weight of caviar in cans and type of pasteurization equipment used for process to ensure required temperature is applied on the caviar for a suitable period of time.
- All thermal equipment and monitoring devices should be regularly checked and calibrated based on a schedule to ensure accuracy.

X.20 Weighing and labelling (Processing Step 20)

Potential hazards: unlikely

Potential defects: incorrect labelling and weighing

Technical guidance:

- Information printed on the labels should be in compliance with the *General Standard for the Labelling of Pre-Packaged Foods* (CODEX STAN 1-1985) and the *Standard for Sturgeon Caviar* (CODEX STAN 291-2010).
- The cans/jars should be weighed to ensure the quantity of caviar filled meets weight declared on the label.
- Net weight, refrigeration instructions and a maximum shelflife for caviar should be clearly labelled.
- Caviar cans/jars should not be described or presented on any label in a manner that is false or misleading to consumers.
- Labels should be monitored for accuracy by trained personnel.

X.21 Cold storage (Processing Step 21)

Potential hazards: microbiological contamination

Potential defects: freezing, decomposition and quality deterioration

Technical guidance:

- The product should be held at cold storage temperatures between -4 ºC and 0 ºC. Care should be taken to avoid temperatures below -5 °C which will cause freezing and quality deterioration. Normally freezing or frozen storage is not permitted, unless it can be demonstrated that quality deterioration is avoided.
- The caviar cold storage room should be cleaned and disinfected based on a permanent cleaning and disinfection schedule.
- The chilled storage facility should have a temperature monitoring device and preferably a continuous recording unit to monitor and record ambient temperatures properly.
- The temperature monitoring system should be supplied with an alarm to alert any fluctuations from allowed limits.
- All time/temperature monitoring and record systems should be calibrated regularly through a permanent schedule to ensure accurate and precise performance.
- Containers of caviar should be periodically checked regarding for loss of vacuum or rusting for cans and any affected containers should be rejected.

X.22 Repackaging (Processing Step 22)

See Sections X.17 and X.20.

X.23 Transportation and distribution (Processing Step 23)

Potential hazards: microbiological contamination

Potential defects: decomposition, physical damage to the caviar cans/jars

Technical guidance:

- Refer to Section 17.
- Proper handling and vehicle conditions should be followed to prevent physical damage to caviar cans/jars.

- Caviar temperature should be monitored during loading to make sure the temperature is between – 4 °C and 0 °C.
- Temperature of vehicle storage cabin should be maintained between – 4 °C and 0 °C.
- The duration of caviar exposure to surrounding temperatures above 2 °C should be monitored to prevent temperature abuse and pathogen growth.
- Products should be transported in a way that allows cool air to circulate easily around cans/jars and that protects them from physical damages.
- Product cabin should be completely insulated and clean. It should be cleaned and disinfected according to a regular disinfection schedule.
- The storage cabin should be equipped with a thermometer and a thermograph to frequently monitor and record the storage temperature.
- Handling should be done by trained personnel.

APPENDIX VI

AMENDMENTS OF FOOD ADDITIVE PROVISIONS IN STANDARDS FOR FISH AND FISHERY PRODUCTS

(For adoption)

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

The tables below only include amendments. The full list of the food additives are in the corresponding standards.

***Standard for Quick Frozen Blocks of Fish Fillets, Minced Fish Flesh and Mixtures of Fillets and Minced Fish Flesh* (CODEX STAN 165-1989)**

Antioxidants		
INS Number	**Additive Name**	**Maximum Level in Product**
304	Ascorbyl palmitate	1**000 m**g/kg
In Minced Fish Flesh Only		
Thickeners		
410	Carob bean ~~(Locust bean)~~ gum	GMP
407	Carrageenan ~~and its Na, K, NH4salts (including Furcelleran)~~	GMP

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

Antioxidants		
INS Number	**Additive Name**	**Maximum Level in Product**
304	Ascorbyl palmitate	1**000 m**g/kg
In Addition, for Minced Fish Flesh Only		
Thickeners		
410	Carob bean ~~(Locust bean)~~ gum	GMP
407	Carrageenan ~~and its Na, K, NH4salts (including Furcelleran)~~	GMP
Food Additives for Breaded or Batter Coatings		
Flavour Enhancers		
621	Monosodium **L-**glutamate	GMP
622	Monopotassium **L-**glutamate	
Colours		
160b(i)	Annatto extracts**,** bixin-based	25 mg/kg ~~expressed~~ **(**as bixin ~~or norbixin~~**)**
160b(ii)	Annatto extract**,** ~~(~~norbixin-based~~)~~	**25 mg/kg (as norbixin)**
160a(i)	~~β-carotene (Synthetic)~~ **beta-Carotenes, synthetic**	100 mg/kg singly or in combination
160a(ii)	**beta-Carotenes, vegetable**	
160a(iii)	**beta-Carotenes, Blakeslea trispora**	
160e	~~β-apo-carotenal~~ **Beta-po-8'-carotenal**	
Thickeners		
410	Carob bean ~~(Locust bean)~~ gum	GMP
407	Carrageenan ~~and its Na, K, NH4salts (including Furcelleran)~~	GMP
465	Methyl_ethyl_cellulose	GMP
Emulsifiers		
471	~~Monoglycerides~~ **Mono- and di- glycerides** of fatty acids	GMP
~~**Modified Starches**~~		
1401	Acid treated starch~~es~~	GMP
1402	Alkaline treated starch~~es~~	

1404	Oxidized starches	
1410	Monostarch phosphate	
1412	Distarch phosphate ~~esterified with sodium trimetaphosphate; esterified with phosphorus oxychloride~~	
1413	Phosphated distarch phosphate	
1414	Acetylated 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 **di**starch phosphate	

***Standard for Salted Atlantic Herring and Salted Sprat* (CODEX STAN 244-2004)**

Acidity Regulators, antioxidants		
INS Number	**Additive Name**	**Maximum Level in Product**
300	Ascorbic acid	GMP
330	Citric acid	GMP
~~**Antioxidants**~~		
~~200-203~~	~~Sorbates~~	~~200 mg/kg (expressed as sorbic acid)~~
Preservatives		
210-213	Benzoates	200 mg/kg ~~(expressed~~ as benzoic acid~~)~~**, singly or in combination**
200-203	**Sorbates**	**200 mg/kg (as sorbic acid), singly or in combination**

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

Preservatives		
INS Number	**Additive Name**	**Maximum Level in Product**
~~200~~ **200-203**	~~Sorbic acid~~ **Sorbates**	200 mg/kg singly or in combination ~~expressed~~ as sorbic acid,
~~201~~	~~Sodium sorbate~~	
~~202~~	~~Potassium sorbate~~	

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

Sequestrants		
INS Number	**Additive Name**	**Maximum Level in Product**
452**(i)**	~~Polyphosphates~~ **Sodium polyphosphate**	**2200 mg/kg (as phosphorus),** ~~5 g/kg expressed as P2O5~~, singly or in combination
452(ii)	**Potassium polyphosphate**	
452(iii)	**Sodium calcium polyphosphate**	
452(iv)	**Calcium polyphosphate**	
452(v)	**Ammonium polyphosphate**	
Flavour enhancers		
621	Monosodium **L-**glutamate	~~Limited by~~ GMP

Standard for Canned Shrimps or Prawns **(CODEX STAN 37-1981)**

Colours		
INS Number	**Additive Name**	**Maximum Level in Product**
124	Ponceau 4R **(Cochineal red A)**	30 mg/kg in the final product, singly or in combination
Sequestrant		
385**-386**	~~Calcium disodium EDTA~~ **Ethylene diamine tetra acetates**	250 mg/kg (**as anhydrous calcium disodium ethylenediaminetetraacetate)**
Acidity Regulator		
338	~~Orthophosphoric~~ **Phosphoric** acid	~~850 mg/kg~~ **540 mg/kg as phosphorus**

Standard for Canned Tuna and Bonito **(CODEX STAN 70-1981)**

~~**Thickening**~~ **Thickeners** ~~**or**~~ **and Gelling Agents** (for use in packing media only)		
INS Number	**Additive Name**	**Maximum Level in Product**
407	Carrageenan ~~and its Na, K, and NH4 salts (including furcelleran~~	GMP
466	Sodium carboxymethyl_cellulose **(cellulose gum)**	GMP
Modified Starches		
1401	Acid treated starch~~es (including white and yellow dextrins)~~	GMP
1402	Alkaline treated starch~~es~~	
1412	Distarch phosphate ~~esterified~~	
1420~~/1421~~	Starch acetate	
1442	Hydroxypropyl **di**starch phosphate	
Acidity Regulators		
260	Acetic acid, **glacial**	GMP
~~**Natural Flavours**~~		
~~Spice oils~~		~~GMP~~
~~Spice extracts~~		
~~Smoke flavours (Natural smoke solutions and extracts)~~		
For Canned Tuna and Bonito Only		
Acidity Regulators		
450**(i)**	Disodium diphosphate	~~10 mg/kg expressed as P_2O_5,~~ **5 mg/kg as phosphorus** (includes natural phosphate)[1]

Only natural flavouring substances, natural flavouring complexes and smoke flavourings are permitted in products covered by this Standard and should be used in accordance with the *Guidelines for the Use of Flavourings* (CAC/GL 66-2008).

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

Acidity Regulators		
INS Number	**Additive Name**	**Maximum Level in Product**
330	Citric acid	GMP
338	~~Orthophosphoric~~ **Phosphoric** acid	~~10 mg/kg expressed as P_2O_5,~~ **5 mg/kg (as phosphorus),** singly or in combination (includes natural phosphate)1
450**(i)**	Disodium diphosphate	
Sequestrants		
385**-386**	~~Calcium disodium EDTA~~ **Ethylene diamine tetra acetates**	250 mg/kg (**as anhydrous calcium disodium ethylenediaminetetraacetate)**
Flavour enhancers		

[1] See para. 47 of this report.

621	Monosodium **L-**glutamate	GMP

***Standard for Canned Sardines and Sardine-Type Products* (CODEX STAN 94-1981)**

~~Thickening~~ Thickeners ~~or~~ and Gelling Agents (for use in packing media only)		
INS Number	**Additive Name**	**Maximum Level in Product**
407	Carrageenan ~~and its Na, K, and NH4 salts (including furcelleran)~~	GMP
466	Sodium carboxymethyl_cellulose **(cellulose gum)**	
1401	Acid treated starch~~es~~	GMP
1402	Alkaline treated starch~~es~~	
1412	Distarch phosphate ~~esterified with sodium trimetaphosphate; esterified with phosphorus oxychloride~~	
1442	Hydroxypropyl **di**starch phosphate	
260	Acetic acid, **glacial**	GMP
~~Natural Flavours~~		
~~Spice oils~~		~~GMP~~
~~Spice extracts~~		
~~Smoke flavours (Natural smoke solutions and extracts)~~		

Only natural flavouring substances, natural flavouring complexes and smoke flavourings are permitted in products covered by this standard and should be used in accordance with the *Guidelines for the Use of Flavourings* (CAC/GL 66-2008).

***Standard for Canned Finfish* (CODEX STAN 119-1981)**

~~Thickening~~ Thickeners ~~or~~ and Gelling Agents (for use in packing media only)		
INS Number	**Additive Name**	**Maximum Level in Product**
407	Carrageenan ~~and its Na, K, and NH4 salts (including furcelleran~~	GMP
466	Sodium carboxymethyl_cellulose **(cellulose gum)**	
Modified Starches		
1401	Acid treated starch~~es (including white and yellow dextrins)~~	GMP
1402	Alkaline treated starch~~es~~	
1412	Distarch phosphate ~~esterified~~	
1420~~/1421~~	Starch acetate	
1442	Hydroxypropyl **di**starch phosphate	
Acidity Regulators		
260	Acetic acid, **glacial**	GMP
~~Natural Flavours~~		
~~Spice oils~~		~~GMP~~
~~Spice extracts~~		
~~Smoke flavours (Natural smoke solutions and extracts)~~		

Only natural flavouring substances, natural flavouring complexes and smoke flavourings are permitted in products covered by this standard and should be used in accordance with the Guidelines for the Use of Flavourings (CAC/GL 66-2008).

***Standard for Fresh and Quick Frozen Raw Scallop Products* (CODEX STAN 315-2014)**

Humectant / Sequestrant / ***Acidity Regulator / Stabilizer***

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

APPENDIX VII

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)

(For adoption)

(Replace Current Section 7.4)

7.4 Estimation of Fish Content

AOAC Method 996.15. **(End Product Method)**

Calculation:

% Fish Content = (Wd/Wb) X 100 + Adjustment Factor*

Wd = weight of debattered and/or debreaded test unit

Wb = weight of battered and/or breaded test unit

*Raw Breaded Frozen Coated Fish and Fishery Products: 2.0%

*Batter-dipped Frozen Coated Fish and Fishery Products: 2.0%

*Precooked Frozen Coated Fish and Fishery Products: 4.0%

Reference: J. AOAC Int. 80, 1235(1997)

Other Methods

(1) Chemical Analysis Method (Nitrogen Factor End-Product Method)

Appropriate in cases where there is reason to doubt the composition of the fish core (i.e., appears to contain non-fish ingredients). Except for fully cooked products, this method requires confirmation with the AOAC Method 996.15., or with Method #2 (Determination of Fish Content) in conjunction with investigation at the processing plant when determining product compliance with the labelling provisions in this Standard. This method should trigger in-factory investigation (e.g. raw ingredient recipe checks) when suspect products are identified.

The percentage fish content, corrected for the non-fish flesh nitrogen contributed by the carbohydrate coating, is calculated as follows.

$$\%\text{Fish} = \frac{(\%\ \text{total nitrogen} - \%\ \text{non - fish flesh nitrogen}}{\text{N factor}^*} x100$$

*appropriate N (nitrogen) factor

The non-fish flesh nitrogen is calculated as follows:

% non-fish flesh nitrogen = % carbohydrate X 0.02

Where the carbohydrate is calculated by difference:

% carbohydrate = 100 – (%water + % fat + % protein + % ash)

References

Determination of nitrogen: ISO 937:1978

Determination of moisture: ISO 1442:1997

Determination of total fat: ISO 1443:1973

Determination of ash: ISO 936:1978

Average nitrogen factors to be used for fish flesh for specific fish species used as raw material for the product can be found at the following website:

http://www.globefish.org/seafood-nitrogen-factors.html

http://www.fao.org/fishery/topic/1514/en

The uncertainty of each nitrogen factor should be taken into account from the statistical data presented with the published nitrogen factor (e.g. 2 standard errors about the mean).

(2) Determination of Fish Content During Production

The fish content of a fish finger (fish stick) is calculated by using the following equation

$$\%\text{Fish Content} = \frac{\text{Weight of ingoing fish}}{\text{Weight of final product}} x100$$

For most products, therefore, the fish ingredient weight is that of the raw ingredient. Any figure placed or declared on a product label would be a typical quantity reflecting the producer's normal manufacturing variations, in accordance with good manufacturing practice."

APPENDIX VIII

AMENDMENTS TO SECTION 11 PROCESSING OF SALTED AND DRIED SALTED FISH OF THE *CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS* (CAC/RCP 52-2003)

(For adoption)

Second paragraph of introductory part

This section applies to fresh, salted and dried salted fish of the following species, all belonging to the Gadidae family, Cod (*Gadus morhua*), Pacific cod (*Gadus macrocephalus*), Polar cod (*Boreogadus saida*), Greenland cod (*Gadus ogac*), Saithe (*Pollachius virens*), Ling (*Molva molva*), Blue ling (*Molva dypterygia*), Tusk (*Brosme brosme*), Haddock (*Gadus aeglefinus/Melanogrammus aeglefinus*), Forkbeard (*Phycis blennoides)* and Pollock (*Pollachius pollachius*) intended for human consumption.