codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

JOINT OFFICE: Viale delle Terme di Caracalla 00153 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

ALINORM 10/33/18

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Thirty-third Session
Geneva, Switzerland, 5 -9 July 2010

REPORT OF THE THIRTIETH SESSION OF THE CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS

Agadir, Morocco
28 September – 2 October 2009

Note: *This document incorporates Circular Letter CL 2009/29-FFP*

codex alimentarius commission

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

JOINT OFFICE: Viale delle Terme di Caracalla 00153 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

CX 5/35 **CL 2009/29-FFP**
October 2009

TO: Codex Contact Points
Interested International Organizations

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

SUBJECT: **Distribution of the Report of the 30th Session of the Codex Committee on Fish and Fishery Products (ALINORM 10/33/18)**

A. MATTERS FOR ADOPTION BY THE 33rd SESSION OF THE CODEX ALIMENTARIUS COMMISSION

Draft Standards and Related Texts at Step 8 of the Procedure

1. Draft Code of Practice for Fish and Fishery Products (Lobsters and Crabs and relevant Definitions) (para. 27 and para. 47, Appendix II);
2. Amendment of Section 2.1 General Definitions in the Code of Practice for Fish and Fishery Products (para. 30, Appendix III); and
3. Draft Standard for Sturgeon Caviar (para. 68, Appendix V).

Governments wishing to propose amendments or comments on the above documents should do so in writing in conformity with the Guide to the Consideration of Standards at Step 8 (see Procedural Manual of the Codex Alimentarius Commission) to the above address **before 31 March 2010**.

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

4. Proposed Draft Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish (para. 98, Appendix VI); and
5. Proposed Draft Standard for Fish Sauce (para. 144, Appendix IX).

Governments wishing to propose amendments or comments on the above documents should do so in writing in conformity with the Guide to the Consideration of Standards at Step 5 (see Procedural Manual of the Codex Alimentarius Commission) to the above address **before 31 March 2010**.

B. REQUEST FOR COMMENTS

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

6. Proposed Draft Amendment to Section 3.4.5.1 Water of the Code of Practice for Fish and Fishery Products (para. 27, Appendix IV);
7. Proposed Draft Standard for Quick Frozen Scallop Adductor Muscle Meat (para. 114, Appendix VII); and
8. Proposed Draft Revision of the Procedure for the Inclusion of Additional Species in Standards for Fish and Fishery Products (para. 123, Appendix VIII).

Governments wishing to submit comments should do so in writing to the above address **before 30 September 2010.**

SUMMARY AND CONCLUSIONS

The summary and conclusions of the 30th Session of the Codex Committee on Fish and Fishery Products are as follows:

Matters for adoption by the Commission:

The Committee:

- advanced to Step 8 the Draft Code of Practice for Fish and Fishery Products (Lobsters and Crabs and relevant Definitions) (para. 27, Appendix II); the Amendment to Section 2.1 General Definitions of the Code of Practice for Fish and Fishery Products (para. 30, Appendix III); and the Draft Standard for Sturgeon Caviar (para. 68, Appendix V); and
- advanced to Step 5 the Proposed Draft Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish (para. 98, Appendix VI); and the Proposed Draft Standard for Fish Sauce (para. 144, Appendix IX).

Other matters of interest to the Commission:

The Committee agreed to return to Step 3:

- Proposed Draft Amendment to Section 3.4.5.1 Water of the Code of Practice for Fish and Fishery Products (para.27, Appendix IV);
- Proposed Draft Standard for Quick Frozen Scallop Adductor Muscle Meat (para. 114, Appendix VII); and
- Proposed Draft Revision for the Inclusion of Additional Species in Standards for Fish and Fishery Products (para. 123, Appendix VIII).

agreed to return to Step 2 for redrafting, circulation at Step 3 and further discussion at the next Session of the Committee:

- Draft List of Methods for the Determination of Biotoxins in the Standard for Raw and Live Bivalve Molluscs (para. 80);
- Proposed Draft Code of Practice for Fish and Fishery Products (Other Sections including Smoked Fish) (para.82);
- Proposed Draft Standard for Fresh/Live and Frozen Abalone (*Haliotis* spp.) (para. 133); and
- Proposed Draft Amendment to the Standard for Quick Frozen Fish Sticks (Nitrogen Factors) (para.150).

agreed to hold at Step 4, the Proposed Draft Code of Practice for the Processing of Scallop Meat pending progress on the development of the Proposed Draft Standard for Quick Frozen Scallop Adductor Muscle Meat (para. 102) and to consider further food additive provisions in standards for fish and fishery products at its next session, based on proposals by an electronic working group (para. 152).

Matters of interest to Other Committees and Task Forces

Codex Committee on Food Additives (CCFA)

The Committee confirmed that the annatto extracts approved for use in the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* should be bixin- and norbixin-based and agreed that the current maximum level should be changed to 25mg/kg for both bixin- and norbixin-based annatto extracts (para. 11).

Matters of Interest to FAO/WHO

The Committee agreed to request FAO/WHO to undertake a risk assessment to determine whether there is a significant public health risk on *Salmonella* associated with consumption of bivalves and to evaluate whether criteria for *Salmonella* are meaningful to ensure adequate consumer health protection (paras 14-16).

TABLE OF CONTENTS

LIST OF APPENDICES

INTRODUCTION

1. The Codex Committee on Fish and Fishery Products held its 30th Session in Agadir, Morocco from 28 September to 2 October 2009, at the kind invitation of the Government of Morocco. The Session was chaired by Dr Bjørn Røthe Knudsen, Regional Director of the Norwegian Food Safety Authority. The Session was attended by 218 delegates representing 78 Member States, one Member Organization (EC) and 1 international organization. The complete list of participants is attached to this report as Appendix I.

OPENING

2. The session was opened by Mr. Akhanouch Aziz, Minister of Agriculture and Fisheries, who highlighted the achievements of the Committee in the perspective of the Codex objectives and its relevance in the framework of the WTO SPS and TBT Agreements. Noting the high participation of African countries in the present session, he stressed the relevance of Codex work in the Region and the need for active participation of developing countries.

3. The Minister highlighted the economic importance of the fisheries sector in Morocco, the need to ensure sustainable development in this area, and the recently approved Strategy for the development of the sector. He also recalled that Morocco had taken several measures in recent years to optimize the efficiency of food safety control at the national level, with the involvement of all stakeholders. The Minister recalled the importance of consumer confidence and of traceability to ensure food safety throughout the food chain and wished delegates all success in their work.

4. The Chairperson in his opening remarks expressed appreciation to the Government of Morocco for co-hosting the session of the Committee.

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

5. The Committee adopted the Provisional Agenda as the Agenda for the Session. On the proposal of the Delegation of Japan to consider the amendment of the definition for clean water in the Code of Practice for Fish and Fishery Products under Item 15, Other Business and Future Work, it was agreed that this could be more appropriately discussed under Agenda Item 3 on the Draft Code of Practice for Fish and Fishery Products (sections on lobsters or crabs, respectively).

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

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

7. The Committee noted the information presented in CX/FFP 09/30/2 and CX/FFP 09/30/2-Add. 1, CRD 2 and 16 including the recommendation from the Executive Committee for the Committee to expedite its work on the Standards for Sturgeon Caviar, Smoked Fish and Quick Frozen Scallop Adductor Muscle Meat.

8. In particular, the Committee commented and/or made decisions as follows:

Model Certificates

9. The Committee considered the request from the 32nd Session of the Commission to consider the revision of the Model Certificate for Fish and Fishery Products to ensure consistency with the recently adopted Generic Model Certificate.

---

1 CX/FFP 09/30/1; CRD 1 (Division of competence between the European Community and its Member States).

2 CX/FFP 09/30/2, CX/FFP 09/30/2-Add.1, CRD 2 (Discussion Paper on Sampling Plan for *Salmonella* in Live Bivalve Molluscs), CRD 3 (Comparison Between Draft Generic Model Official Certificate (Annex to the Guidelines for Design, Production, Issuance and Use of Generic Official Certificates and the Model Certificate for Fish and Fishery Products, prepared by Canada), CRD 16 (Information on Recent FAO/WHO Work in the Area of Fish and Fishery Products).

10. The Committee noted the need to limit the number of certificates used in international trade and considered a proposal that the Generic Model Certificate be revised to include specifics related to fish and fishery products and to revoke the Model Certificate for Fish and Fishery Products. The Committee noted that the comparison in CRD 3 provided a good basis for consideration of those matters specific to fish and fishery products to be included in the Generic Model Certificate and agreed that a Circular Letter would be issued requesting comments on the list of matters specific to fish and fishery products in the Model Certificate for Fish and Fishery Products that could be incorporated into the Generic Model Certificate for further consideration by the next session and possible forwarding to the CCFICS.

Annatto extracts

11. The Committee confirmed that the annatto extracts approved for use in the *Standard for Quick Frozen Fish Sticks (Fish Fingers), Fish Portions and Fish Fillets – Breaded or in Batter* (CODEX STAN 166-1989) should be bixin- and norbixin-based and agreed that the current maximum level should be changed to 25mg/kg for both and to inform the Committee on Food Additives accordingly.

OIE Update on OIE Standard-setting Activities relevant to aquatic animal issues

12. The Committee noted the concern raised by a delegate on the extended mandate of the OIE Aquatic Animal Health Standards Commission to include animal production food safety issues associated with aquatic animals, since food safety concerns were not the same as for terrestrial animals and that the Codex codes of practice, for example, the section on aquaculture production in the Code of Practice for Fish and Fishery Products, provided adequate guidance in relation to food safety. The Representative of the FAO informed the Committee that FAO had had similar concerns, but having participated in the development of the Aquatic Animal Health Code could confirm that it dealt more with food safety issues directly related to animal health. The Secretariat informed the Committee that it participates in the OIE Working Group on Animal Production Food Safety, thereby ensuring cooperation between the two organizations in order to avoid duplication of work and that the next meeting of this working group would be informed of the work of Codex committees of relevance to OIE or any concerns raised.

Matters from FAO/WHO

Guidelines on Aquaculture Certification

13. The Representative of FAO, in presenting information on FAO/WHO work in the area of fish and fishery products as presented in CRD 16, highlighted the development of the FAO Guidelines on Aquaculture Certification following requests from member countries for guidance to provide a frame to be used by certification bodies, including private standards. The Representative also informed that ISO created a technical working group on fish aquaculture which requires good coordination between the Committee and the technical working group.

Sampling Plans for *Salmonella*

14. The Committee recalled that at its last session, when finalizing the *Standard for Live and Raw Bivalve Molluscs,* it had requested scientific advice from FAO and WHO to estimate the risk mitigation for *Salmonella* in bivalve molluscs when different sampling plans and microbiological criteria are applied. The Representative of FAO informed the Committee that estimation of risk mitigation required risk assessment and since there were currently no national or international risk assessments available for *Salmonella* in bivalve molluscs, the FAO/WHO had requested Codex members to provide data on sampling plans and *Salmonella* detection from their shellfish harvesting area monitoring programmes and epidemiological data linking outbreaks of *Salmonella* to bivalve molluscs. The data received in response to this request, data from scientific literature and foodborne illness surveillance programmes were reviewed with the help of an expert on *Salmonella*. The study showed that most countries do not monitor shellfish harvesting areas for *Salmonella*, but rely on monitoring faecal contamination using indicator bacteria in shellfish meat or surrounding water. Epidemiological data showed that bivalves have rarely been involved in outbreaks of salmonellosis, suggesting that there was no particular public health problem associated with *Salmonella* in bivalve molluscs. The Representative indicated that most studies on *Salmonella* in bivalve harvesting areas

have used single samples (n = 1) and there were very limited data using multiple samples and therefore data are inadequate for the evaluation of sampling plans. The Committee was further informed that the ICMSF did not recommend microbiological criteria for *Salmonella* in bivalve molluscs and that the *Codex Guidelines on Sampling* (CAC/GL 50-2004) recommends sampling plan classification according to the nature of concern and hazard. Relating epidemiological data to these guidelines would suggest continuation of currently recommended (n = 5; c = 0) sampling plan, when there is a need for testing for *Salmonella*. Therefore the current two-class sampling plan in the *Standard for Live and Raw Bivalve Molluscs* need not be changed.

15. The Delegation of Japan, supported by several other delegations, questioned whether in view of the conclusion presented by the Representative of FAO, there was a need for criteria for *Salmonella* in the Standard, especially taking into account the guidance for the development of criteria given in the *Principles for the Establishment and Application of Microbiological Criteria for Food* (CAC/GL 21-1997) which stated that criteria should be developed only when there was a need for such criteria and that such criteria are meaningful for consumer protection.

16. The Committee agreed to request FAO/WHO to undertake a risk assessment to determine whether there is a significant public health risk on *Salmonella* associated with consumption of bivalves and to evaluate whether criteria for *Salmonella* are meaningful to ensure adequate consumer health protection, and agreed to retain the current criteria for *Salmonella* and the associated sampling plan as recommended by the FAO/WHO advice until the result of this assessment becomes available.

DRAFT CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS (LOBSTERS AND RELEVANT DEFINITIONS) (Agenda Item 3a)[3]

17. The Committee recalled that the 31st Session of the Commission had returned the section on lobsters and its relevant definitions to Step 6 for comments and further consideration by this session of the Committee following the lack of consensus on section 13.1.2 Hygiene Control Programme.

18. The Committee agreed to first consider the section 13.1.2 Hygiene Control Programme taking into account related discussions by the physical Working Group held prior to the Session on the section on crabs (Agenda Item 3b)[4] and the Joint FAO/WHO Expert Consultation on the Benefits and Risks of the Use of Chlorine Containing Disinfectants in Food Production and Food Processing[5].

19. The Representative of FAO highlighted the outcomes of the FAO/WHO Expert Consultation outlining the approach taken, data used, uncertainties, data gaps, conclusions and recommendations. The main goals of the Consultation were to consider the risk of chemical residues in food products following the use of chlorine for disinfection purposes in food production and food processing versus the benefit of lowering the risk of microbial hazards taking into consideration the relevance and feasibility of alternative approaches. A stepwise approach was taken to identify the most common disinfection practices (based on national authorised practices); identify possible health concerns due to residues in foods; review toxicological data and compare with estimated exposures; identify any possible reductions in the levels of pathogenic microorganisms. The data were limited, but the available data did not raise any health concerns due to the current practices in the use of chlorine containing disinfectants in fish processing. Laboratory studies suggested health benefits due to reduction in pathogen levels. The Consultation emphasized that disinfectant treatment of water used in food processing must not be used to mask poor hygienic practices. The Committee was informed that the Executive Summary of the report was available on the WHO website and that the detailed report was being edited and would be published by FAO/WHO soon.

20. The Delegation of Canada noted that the issue of water treatment through chlorination as covered in section 13.1.2 did not only apply to lobsters (or crabs) but also to other products covered by

---

[3] CL 2008/5-FFP, CX/FFP 09/30/3 (comments of Brazil, Cuba and Guatemala), CX/FFP 09/30/3-Add.1 (comments of Iran and Kenya), CRD 14 (comments of Philippines), CRD 21 (comments of Argentina), CRD 27 (comments of USA), CRD 29 (comments of Malaysia), CRD 31 (comments of Canada), CRD 33 (comments of Japan)

[4] CRD 4 (Report of the Physical Working Group on Crabs)

[5] CRD 16 (Information on Recent FAO/WHO Work in the Area of Fish and Fishery Products)

the Code of Practice for Fish and Fishery Products and could be more appropriately dealt with in the Code's general section on prerequisite programmes (Section 3). The Delegation therefore proposed to transfer the first bullet point of section 13.1.2 to section 3.4.5.1 Water in the section on supply of water, ice and steam (section 3.4.5), but to retain this in square brackets while requesting further guidance with respect to appropriate residual content of chlorine and the use of chlorinated water as an antimicrobial agent for fish and fishery products from the Committee on Food Hygiene (CCFH), and guidance for the Committee on Contaminants in Foods (CCCF) with respect to concerns about residue levels in fish and fishery products, respectively. The Delegation of the European Community proposed that guidance also be sought from the Task Force on Antimicrobial Resistance, however, the Secretariat clarified that the Task Force on Antimicrobial Resistance had restricted terms of reference and would not necessarily be able to respond to a request for advice, but that in any event, the Task Force would be informed of all relevant matter as was normal practice in Codex.

21. While agreeing to the proposal to transfer the first bullet point of section 13.1.2 on chlorine use for water treatment to section 3.4.5.1 Water, and to place this in square brackets, the Committee agreed not to request advice from CCFH and CCCF, until the final report becomes available to all relevant Codex Committees for their consideration and to consider this matter further at the next session of the Committee.

22. The Delegation of Brazil expressed its reservation to the decision to retain the section in square brackets as it considered that current levels of chlorine were safe and noting that the Committee had not fully taken into account the advice of the FAO/WHO expert consultation.

23. The Committee continued with a section by section consideration of the rest of the text and made the following amendments and comments.

Section 2.9 Definitions

24. The Committee agreed to revise the definition for pasteurization to more clearly indicate that the spoilage and pathogenic microorganisms being inactivated were of those of public health concern.

13.1.1 Design and Construction of Equipment and Utensils

25. The Committee agreed to delete the last bullet point of this section as the guidance provided did not provide sufficient flexibility for the use of other equipment.

13.2.1.1 Potential Hazards - Bacteria

26. The Committee noted that the JEMRA risk assessment on *Listeria monocytogenes* in ready-to-eat foods indicated that *Listeria monocytogenes* could survive in salt concentrations of up to 16% and accordingly agreed to replace 10% NaCl with 16% NaCl in paragraph 3 of this section.

Status of the Draft Code of Practice for Fish and Fishery Products (Lobsters and relevant Definitions)

27. The Committee agreed to advance the Draft Code of Practice for Fish and Fishery Products (Lobsters and relevant Definitions) to Step 8 for adoption by the 33rd Session of the Commission and the section on hygiene to the Committee on Food Hygiene for endorsement (Appendix II) and the third bullet point in section 3.4.5.1 Water for comments at Step 3 and consideration by the next session of the Committee (Appendix IV).

Section 2.1 General Definitions

Clean water

28. Following a proposal by the Delegation of Japan for the amendment of the definition of clean water due to misunderstanding on the meaning of "health quality of fish, shellfish, and their products", the Committee agreed to amend the definition of clean water to better clarify that clean water means water that should not affect the safety of fish, shellfish and their products intended for human consumption.

Microbiological contamination

29. Following the agreement of the Committee to use the term "microbiological contamination" as a potential hazard in the various sections of the Code of Practice for Fish and Fishery Products rather than to explicitly indicate whether this referred to the presence, introduction, reintroduction, survival or growth of microorganisms during the various production stages, the Committee noted that the term might not be easily understood by users of the Code. The Committee therefore agreed to develop a definition for microbiological contamination to better clarify the term.

Status of amendments to the general section of the Code (Section 2.1, definitions for clean water and microbiological contamination)

30. The Committee agreed to send to the 33rd Session of the Commission the amendment to the definition for clean water and the definition for microbiological contamination in section 2.1 General Definitions for adoption (Appendix III).

DRAFT CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS (CRABS AND RELEVANT DEFINITIONS) (Agenda Item 3b)[6]

31. The Committee recalled that the section on crabs had been returned to Step 6 for comments and further consideration by this Session and that a physical Working Group led by Brazil would meet prior to the session to consider comments received at Step 6 and to prepare proposals for consideration by the Committee.

32. The Delegation of Brazil introduced the report of the physical Working Group and informed the Committee that the working group had made considerable progress but was unable to complete its work and had considered the text up to section xx.3.18. A smaller informal group had considered the rest of the text and their proposals were also contained in CRD 4.

33. The Committee agreed to consider the proposed text in CRD 4 section by section and made the following additional amendments and comments, in addition to editorial changes.

2.XX CRABS Definitions

34. The definition for pasteurization was amended in line with an earlier decision on pasteurization in definitions for lobsters (see Agenda Item 3a).

35. The scientific species name for Dungeness crabs was inserted in the definition for shaking and the definitions for tail and tailing were deleted as these were not applicable to crabs.

xx.3.1.1 Live Crab Reception (Processing Step 1)

36. The Committee agreed to delete reference to "reception" since the defect referred to the weak or injured crabs, rather than their reception.

xx.3.1.3 Washing and Drowning or Pacifying (Processing Step 3)

37. The Committee had a discussion on whether to delete pacifying from the title as the term was not well understood or would have to be defined. It was clarified that pacifying was covered by amending the definition for insensible by introducing "pacifying through" and therefore the title was retained without change.

xx.3.1.4 Cooking (Processing Step 4)

38. Parasites and microbiological contamination were included as potential hazards in view of the inclusion of two new bullet points in the technical guidance on the need to minimize cross-contamination and sufficient cook time and temperatures to kill trematodes and to extend these changes also to section xx.3.2.4 for consistency.

---

[6] ALINORM 08/31/18 Appendix IV, CL 2008/5-FFP, CX/FFP 09/30/4 (comments of Australia, Brazil and Japan), CX/FFP 09/30/4-Add.1 (comments of Ghana), CRD 4 (Report of the Working Group on Crabs), CRD 8 (comments of Japan and USA), CRD 14 (comments of Philippines),

39. In addition, the technical guidance on the need to minimize cross-contamination by staff was amended to clearly indicate that staff involved in operations with cooked and uncooked crabs need to take steps to minimise cross contamination and to apply this change throughout the text as applicable.

xx.3.1.5 Cooling (Processing Step 5)

40. The last bullet point in the technical guidance was transferred to section xx.3.1.6 Sectioning/Meat Extraction as more appropriate.

xx.3.1.7 Shell Fragments and Viscera Fragments Removal (Processing Step 7)

41. The Committee agreed to include foreign material and shell fragments as potential hazards as it was noted that these could pose a risk to consumers in some circumstances.

xx.3.19 Primary Packaging/Sealing (Processing Step 9)

42. For consistency, the potential hazard was reflected as microbiological contamination and this change was made throughout the text where applicable.

xx.3.1.11 Cooling (Processing Step 11)

43. The second bullet point of the technical guidance was amended to better reflect requirements to meet the need to achieve an internal temperature of 4°C of the product during cooling to prevent the growth of proteolytic *C.botulinum* spores. It was clarified that an internal temperature of 4°C was sufficient to prevent growth of sporeforming spoilage microorganisms that might have survived pasteurization and proteolytic *C. botulinum* and that cooling to 4°C also serves as a double barrier to growth of non-proteolytic *C. botulinum* that may have survived the pasteurization process.

xx.3.1.13 Chilled Storage (Processing Step 13)

44. The Committee agreed to delete the square brackets and to retain the temperature of 3°C. It was clarified that in the case of chilled storage as opposed to cooling, there was a need to have a lower temperature than 4°C since chilled storage could include long-term storage. The temperature in Fahrenheit was deleted and this decision was applied throughout the document where applicable.

Figure xx.2 Example of flow chart for Chilled and Frozen Cooked Crab

45. The arrow from the step 4 cooking to step 6 sectioning was deleted in line with the technical guidance in xx.3.2.5 which states that sectioning should not be performed until the product has been adequately cooled.

xx.3.2.9 Freezing (Processing Step 9)

46. "Adequate commercial freezing equipment" in the first bullet point of the technical guidance was replaced by "appropriate freezing equipment" to allow more flexibility in the type of freezing equipment used.

Status of the Draft Code of Practice for Fish and Fishery Products (Crabs and relevant Definitions)

47. The Committee agreed to advance the Draft Code of Practice for Fish and Fishery Products (Crabs and relevant Definitions) to Step 8 for adoption by the 33rd Session of the Commission and the section on hygiene to the CCFH for their endorsement (Appendix II).

DRAFT STANDARD FOR STURGEON CAVIAR (Agenda Item 4)[7]

48. The Committee recalled that its last session had returned the Draft Standard to Step 6 for further comments and consideration by the next session, as some sections required further discussion. The Committee considered the text section by section and made the following amendments and comments

[7] ALINORM 08/31/18, Appendix V, CX/FFP 09/30/5 (comments of Australia, Egypt and Japan), CRD 9 (comments of Israel, United States)

Section 2 Description

49. In Section 2.1 Definitions the Committee discussed a proposal to delete the reference to ovulated eggs in view of the possible use of unapproved hormones for the induction of ovulation and of the significant difference in organoleptic characteristics. Some delegations pointed out that caviar from ovulated eggs were commonly produced and traded in several countries, and supported its inclusion in the standard. After some discussion, the Committee agreed to retain ovulated eggs in the definitions and to introduce additional clarification in the relevant sections concerning the differences between sturgeon caviar from ovulated and non-ovulated eggs and the specific requirements applicable to ovulated eggs.

50. In section 2.2, it was agreed that there was no need to refer to the use of additives or otherwise in the product definition as this was covered by the additives section.

51. In section 2.3 Process Definition, following the discussion on the Definition, the Committee agreed to insert provisions concerning the use of hormones in the induction of ovulation in order to clarify the process used for ovulated eggs.

52. In section 2.3.2 the text was amended to make it clear that no mixing of caviar from different sturgeon species was allowed.

Section 4 Food Additives

53. The Committee discussed whether additives should be generally prohibited in the standard, in view of earlier discussion. The Committee reiterated its earlier decision that, although a number of colours were allowed in Food Category 09.3.3 in the *General Standard for Food Additives* (GSFA), there was no technological justification for their use in sturgeon caviar and they should not be allowed, and also agreed not to allow texturising agents.

54. As regards preservatives, it was noted that boric acid was used in some countries but that it could not be allowed in the standard as no ADI had been established by JECFA. The Committee considered whether other additives, especially preservatives could be used, and, noting that Table 3 was applicable to food category 09.3.3, agreed that acidity regulators, antioxidants and preservatives in Table 3 could be used under conditions of GMP.

Section 5 Contaminants

55. Taking into account the use of hormones to induce ovulation in the case of ovulated eggs, the Committee agreed to insert a reference to the sub-section 6.3.2 Veterinary Drugs of the Code of Practice for Fish and Fishery Products – (CAC/RCP 52-2003 section 6 – Aquaculture), in particular regarding the compliance with the MRL and the withdrawal time.

Section 6 Food Hygiene

56. The Committee agreed to retain the text of sections 6.3 and 6.4 without square brackets as the provisions therein were relevant for sturgeon caviar.

Section 7 Labelling

57. In section 7.1, the Committee considered a proposal to replace the reference to the identification code with the scientific name of the species. Some delegations indicated that the identification code was currently used in trade and it was agreed to retain it with the use of the scientific name as an alternative.

58. The Committee agreed to delete the reference to the CITES requirements as they were not related to the safety and quality of the product.

59. The Committee agreed to insert specific provisions for the labelling of caviar from ovulated eggs as a new section 7.1.4 in view of its earlier discussion.

60. In section 7.2 Storage Instructions, it was clarified that “the product shall be stored under appropriate time/temperature conditions”. Some delegations pointed out requirements for storage instructions were already included in the General Standard for the Labelling of Prepackaged Foods

and therefore the section should be deleted. However other delegations proposed to retain the text as it provided useful reference in the present standard and was not in contradiction with the General Standard.

61. Several delegations proposed to delete the requirements for country of origin labelling in section 7.3 as they were covered by the general provisions in the *General Standard for the Labelling of Prepackaged Foods*. Other delegations expressed the view that mandatory country of origin labelling was necessary for the purposes of consumer information on the nature of the product, especially in view of the high value of caviar, and that it was necessary to specify the conditions in case of repackaging. It was also proposed to repeat the section of the General Standard addressing country of origin labelling. After some discussion, the Committee agreed to delete the section on country of origin and to retain the provisions on repackaging as a new section 7.3.

62. The Committee agreed to insert the standard wording for the Labelling of Non-Retail Containers in a new section (7.4) as it was consistent with other similar standards for fishery products. It was also agreed that primary containers should be labelled with the name of the species in addition to the lot.

Section 8. Sampling, Examination and Analyses

63. The Committee clarified that section 8.2 should cover only sensory examination, section 8.3 the determination of net weight, and section 8.4 the determination of salt content.

64. In section 8.2, the Committee noted a proposal to specify that the samples should be assessed by "an expert" trained in such examination. The Committee however recalled that in the *Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories* and in other standards for fish and fishery products, reference was made to "a person" trained in such examination and therefore the current wording was retained.

Section 9. Definition of Defects

65. The Committee recalled that section 9.1 Foreign matter covered matter not derived from fish, while section 9.4 was intended to cover fish tissues that should not be present in sturgeon eggs, and the section therefore was renamed "objectionable material" instead of "extraneous material". It was also clarified that such material included "secreted fat".

66. In section 9.3 Consistency and Condition, the description of the following additional defects was included: breaking up of the outer membrane, and presence of broken eggs or fluid.

Section 10. Lot Acceptance

67. The Committee agreed to add a reference to the Contaminants section and renumbered the text accordingly.

Status of the Draft Standard for Sturgeon Caviar

68. The Committee agreed to forward the Draft Standard, as amended at the present session, to Step 8 for adoption by the 33rd Session of the Codex Alimentarius Commission (see Appendix V).

DRAFT LIST OF METHODS FOR THE DETERMINATION OF BIOTOXINS IN THE STANDARD FOR RAW AND LIVE BIVALVE MOLLUSCS (Agenda Item 5)[8]

69. The Committee recalled that its last session had agreed to include a method for the determination of the saxitoxin group in the *Standard for Raw and Live Bivalve Molluscs*, and had returned all other proposed methods to Step 6. The Committee had a general discussion on the approach to the establishment of methods of analysis for biotoxins.

70. The Delegation of the European Community informed the Committee that the European Food Safety Authority (EFSA) had provided several opinions on marine biotoxins currently regulated in the EU legislation, and that the information was summarised and available on the EFSA website. The

[8] ALINORM 08/31/18, Appendix XI, CRD 14 (comments of the Philippines), CRD 30 (information of the European Community on marine biotoxins)

EFSA considered that the current levels in the EU were not sufficiently protective and should be revised and proposed levels and methods that were different from those in the Codex Standards. The EC Panel on Contaminants in the Food Chain had also considered the mouse bioassay and noted the shortcomings of this method. The EC will ask EFSA, on the basis of new consumption data provided by Member States, to revise the opinion especially for the proposed limits. The EC has not yet decided to modify any levels in its legislation before a new revision is carried out.

71. Some delegations expressed the view that if the list of methods was retained, it would not be feasible to update it regularly as scientific knowledge was evolving rapidly in this area. Other delegations indicated that methods of analysis for screening purposes should be available but that they should rather be included in a code of practice.

72. The Committee recalled that the list under consideration was a working document sent for comments and that it was intended for inclusion in the section on the determination of biotoxins when finalised, but would not remain as a separate list for information purposes.

73. In view of the difficulties to develop a list of methods, and taking into account the work of other committees on performance criteria, some delegations proposed to replace the methods with criteria that could be used by governments to select adequate methods for monitoring as well as for control purposes.

74. Other delegations indicated that although the criteria were useful and should be developed, control authorities needed reference methods and therefore a list of methods should be retained in addition to the criteria.

75. Some delegations expressed concerns at the difficulty of obtaining reference materials to perform some of the methods presented in the current list and pointed out that the methods used should be easily available, especially for developing countries.

76. The Representative of FAO recalled that the Expert Consultation on Marine Biotoxins held in 2004 had conducted a scientific review of methods of analysis for biotoxins, which should be taken into account in the development of criteria or consideration of adequate methods, and that a further update had taken place in the framework of the Conference on Molluscan Shellfish Safety held in 2009.

77. After some discussion, the Committee agreed that it would develop performance criteria and that for this purpose it could take into account the existing criteria developed by the Committee on Methods of Analysis and Sampling and included in the Procedural Manual, and that it could not decide at this stage whether specific methods would be included or not in the standard, as this required further consideration, and that the scientific guidance from FAO/WHO would be considered in the process.

78. In order to facilitate discussion at the next session, the Committee agreed to establish an electronic working group coordinated by Canada, working in English, with the following mandate:

- Review the updated documentation prepared by FAO/IOC/WHO Expert Consultation on the section on methods for biotoxin analysis and other relevant documentation as appropriate.
- Develop performance criteria for analytical methods for biotoxins, taking into account the criteria described in the Procedural Manual.
- Assess the current methods against the performance criteria with a view to revising the Table in Appendix XI.

79. In reply to some concerns about listing several methods for reference purposes, the Committee recalled that at this stage only the method for saxitoxin was included in the Standard, that only one reference method appeared in Codex standards for any specific provision and that the methods in the current working document had been listed for further discussion, and would be reviewed by the working group as indicated above.

Status of the Draft List of Methods for the Determination of Biotoxins in the Standard for Raw and Live Bivalve Molluscs

80. The Committee agreed to return the Draft List of Methods to Steps 2/3 for redrafting by the electronic working group mentioned above, comments and consideration at the next session.

PROPOSED DRAFT CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS (OTHER SECTIONS INCLUDING SMOKED FISH) (Agenda Item 6)[9]

81. The Committee recalled that due to time constraints it had not considered the section on smoked fish at its last session and had agreed that the physical working group on Smoked Fish established to meet immediately prior to this session would consider the draft Code together with the Proposed Draft Standard for Smoked Fish. The Committee was however informed that due to considerable discussion on the Standard for Smoked Fish, the physical working group had been unable to consider the Code.

Status of the Proposed Draft Code of Practice for Fish and Fishery Products (Other Sections including Smoked Fish)

82. The Committee agreed to return the section on smoked fish to Step 2/3 for redrafting by the Netherlands, circulation for comments and consideration by the next session of the Committee. The Committee also agreed to re-establish the physical working group led by The Netherlands, working in English, to meet immediately prior to the next session to consider comments and prepare proposals for consideration by the 31st Session of the Committee.

PROPOSED DRAFT STANDARD FOR SMOKED FISH, SMOKED-FLAVOURED FISH AND SMOKED-DRIED FISH (Agenda Item 7)[10]

83. The Committee recalled that its last session had agreed to return the Proposed Draft Standard to Step 3 for comments and consideration by this session and to establish a physical working group led by The Netherlands, to meet prior to this session to consider comments and prepare proposals for consideration by the session.

84. The Committee considered the revised text as presented in CRD 6 section by section and in addition to editorial corrections, made the following amendments and/or comments.

Scope

85. The Committee confirmed that reference to "further processing" covered cooking of raw smoked fish prior to consumption and that "direct consumption" included ready-to-eat product.

2. Description

86. The Committee agreed to insert a new paragraph under Description to clarify that the three products covered by the standard, smoked fish, smoke-flavoured fish and smoke-dried fish were defined separately in sections 2.1, 2.2 and 2.3.

2.1. 1 Product definition

87. The Committee agreed to transfer the last paragraph on evisceration to minimize risk of *Clostridium botulinum* to section 6.5 as more appropriate and to apply this change also to the product definition sections 2.2.1 and 2.3.1.

---

[9] ALINORM 08/31/18, Appendix VI, CL 2008/5-FFP, CX/FFP 09/30/7 (comments of the European Community), CX/FFP 09/30/7-Add.1 (comments of Ghana), CRD 10 (comments of Guatemala), CRD 14 (comments of Philippines), CRD 19 (comments of Mexico), CRD 21 (comments of Argentina), CRD 22 (comments of Thailand), CRD 25 (comments of USA), CRD 29 (comments of Malaysia)

[10] ALINORM 08/31/18, Appendix VII, CL 2008/5-FFP, CX/FFP 09/30/8 (comments of the Egypt, European Community, France and Japan), CX/FFP 09/30/8-Add.1 (comments of Ghana), CRD 6 (Report of the physical working group on smoked fish); CRD 13 (comments of New Zealand), CRD 14 (comments of Philippines), CRD 20 (comments of Japan), CRD 25 (comments of United States of America), CRD 35 (comments of Mali)

2.1.2 Process Definition (Smoked Fish)

88. The Committee agreed to clarify that smoking was usually characterized by a combination of salting, drying, heating and smoking, to accommodate some smoked products not salted prior to smoking. It was also confirmed that the products covered in Section 2 were those which were normally salted, dried, heated and then smoked and were of perishable nature, unlike products which were dried and then smoked and did not require refrigeration, which were covered by section 2.3 smoked dried fish.

2.3.1 Product Definition (Smoke-dried fish)

89. The definition was amended to make provision for some products that undergo a salting process.

4. Food Additives

90. The Committee agreed that the section on food additives would be finalized at its next session.

6.3 Parasites

91. The Delegation of Egypt in noting that freezing used to inactivate live parasites could result in a high concentration of dead parasites, thus posing a health risk to some consumers who were allergic to nematodes, proposed to indicate that dead parasites should only be permitted in the cavity or fish viscera. Another delegation was of the opinion that it was up to the national competent authorities to decide on this matter. The Committee agreed to consider this matter further at the next session.

8.7 Temperature for Thawing

92. For purposes of clarity, this section was amended to indicate that it was the frozen sample of a product that should be thawed at temperatures low enough to maintain quality and safety.

8.9 Determination of toxins of *Clostridium botulinum*

93. The Committee has some discussion on whether a method for the determination of toxins of *Clostridium botulinum* was needed in the Standard. It was indicated that determination for these toxins was not done on a routine basis and its inclusion might give the impression that products should be tested on a routine basis. It was however pointed out that section 6.5 stated that *Clostridium botulinum* toxins were not allowed in products covered by the standard and that a reference method was necessary to provide guidance to countries. The Committee therefore agreed to retain the method for determination of toxins of *Clostridium botulinum*, but to indicate that the method was not routinely performed.

8.11 Determination of Dead Parasites (renumbered 8.10)

94. The Committee agreed to insert the text from Annex III in this section and to amend the title to read, “Determination of Visible Parasites”.

Other matters on methods of analysis

95. The Committee noted that there were provisions for water activity in the Standard, yet no method was provided for and agreed that proposals for a method for water activity should be proposed to the next session for consideration.

9 Definition of Defectives

96. The Committee agreed to include a new section, 9.4 Flesh Abnormalities to provide for a definition for gelatinous condition in square brackets.

Annex 2

97. The Committee considered a proposal to make the recommendation on the need for science-based risk management less prescriptive. The Representative of FAO stressed the importance of basing risk management options on science-based risk assessment in view of the serious risk to human health of the presence of *Clostridium botulinum* toxin in the products covered by the standard. In view of this, the Committee agreed not to amend the section.

Status of the Proposed Draft Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke Dried Fish

98. The Committee agreed to advance the Proposed Draft Standard to Step 5 for adoption by the 33rd Session of the Commission and the section on hygiene for endorsement by the CCFH (Appendix VI).

PROPOSED DRAFT CODE OF PRACTICE ON THE PROCESSING OF SCALLOP MEAT (Agenda Item 8)[11]

99. The Committee recalled that its last session had briefly discussed the scope of the Code and had agreed that an electronic working group chaired by Canada would redraft the text for further comments and consideration at the next session.

100. The Delegation of Canada indicated that the code had been revised to take into account the Proposed Draft Standard for Quick Frozen Scallop Adductor Muscle Meat, as discussed at the 29th Session. The Committee noted that in view of the changes that were still under consideration in the corresponding standard, the present version of the Code may not correspond to the revised version of the Standard, that was discussed prior to the Code in the present session (see Agenda Item 9).

101. The Committee recognised that it would be difficult to revise the Code as long as there was no conclusion on the products to included in the standard and agreed to return to the Code only when the scope of the Standard had been sufficiently clarified.

Status of the Proposed Draft Code of Practice on the Processing of Scallop Meat

102. The Committee agreed to retain the Proposed Draft Code of Practice at Step 4 pending further progress on the development of the Proposed Draft Standard for Quick Frozen Scallop Adductor Muscle Meat.

PROPOSED DRAFT STANDARD FOR QUICK FROZEN SCALLOP ADDUCTOR MUSCLE MEAT (Agenda Item 9)[12]

103. The Committee recalled that its last session had agreed on the scope of the standard and use of additives, but had not considered all sections and had therefore returned the amended version of the text to Step 3 for comments and redrafting by an electronic working group chaired by Canada.

104. The Delegation of Canada indicated that the electronic working group had made good progress but noted some outstanding issues including: the addition of water and use of additives, the inclusion of fresh scallops in the standard, the presence of parasites, and the hazards from biotoxins. The Delegation informed the Committee that the in-session working group, held on 28 September, taking into account the written comments and earlier discussion, proposed to include scallops with added water and additives, and fresh scallops to the current text, addressing the differences through additional labelling provisions, rather than developing a separate standard. The Committee agreed to use the revised version presented in CRD 32 as a basis for discussion and considered specifically sections 1 and 2.

Section 1. Scope

105. The Committee recalled that whole scallops and roe on scallops were covered by the Standard for Raw and Live Bivalve Molluscs and that the present standard would cover only scallop adductor muscle meat.

106. The Committee agreed to refer to bivalve species of the *Pectinidae* family in the Scope to avoid repetition of the family name throughout the standard.

---

[11] CX/FFP 09/30/9, CX/FFP 09/30/9-Add.1 (comments of International Food Additives Council), CRD 18 (comments of Costa Rica), CRD 19 (comments of Mexico), CRD 20 (comments of Japan), CRD 23 (comments of United States)

[12] ALINORM 08/31/18, Appendix VIII, CX/FFP 09/30/10, CX/FFP 09/30/10-Add.1 (comments of Australia, Costa Rica, IFAC), CRD 19 (comments of Mexico), CRD 20 (comments of Japan), CRD 23 (comments of USA), CRD 32 (redrafted version of the standard)

107. The Committee noted a proposal to amend the title of the standard, and the Committee agreed that it would reconsider the title after addressing the nature of the products that should be covered.

Section 2. Description

108. The Committee discussed the revised product definitions applying to scallop meat without food additives (section 2.1) and with added water and additives (2.1.2).

109. The Committee considered a proposal to delete the reference to the use of additives in the product definition and to insert it in section 2.2 Process Definition, where it would be more appropriate to provide such explanations. The Committee however could not come to a conclusion and retained the titles with square brackets around the wording on food additives.

110. It was proposed to include a third category in which food additives were added but no water was added. Several delegations however pointed out that in their experience food additives were added only when water was added, and therefore no additional product description was needed. It was noted that reference could also be made to the use of "additives and/or water" as an alternative.

111. The Committee discussed a proposal to divide section 2.2 product Definition into two sub-sections: 2.2.1 with the three current paragraphs as they were of general application, and a new sub-section 2.2.2. indicating that "for products with added water, water or additives should be added according to good manufacturing practice (GMP)".

112. There was some support for this proposal but the Committee also noted a concern that this would require a definition or clarification of what was intended by GMP in this particular context, and would not solve the difficulties related to the description of the product covered by the standard. The Committee did not come to a conclusion on this proposal.

113. In reply to a proposal to convene a physical working group prior to the next session in order to facilitate the discussion, the Chair noted that another physical working group (on smoked fish) was already scheduled and that, in view of the issues to be addressed for scallops, it would be preferable to consider them thoroughly in the plenary session. The Committee welcomed the proposal of the Chair to extend the plenary session by one day in order to allow enough time for discussion of the standard and other important items on the Agenda.

Status of the Proposed Draft Standard for Quick Frozen Scallop Adductor Muscle Meat

114. The Committee agreed to return the Proposed Draft Standard, as amended at the present session, to Step 3 for comments and consideration at the next Session (see Appendix VII).

PROPOSED DRAFT REVISION OF THE PROCEDURE FOR THE INCLUSION OF ADDITIONAL SPECIES IN STANDARDS FOR FISH AND FISHERY PRODUCTS (Agenda Item 10)[13]

115. The Committee recalled that, following approval of new work on the revision of the Procedure by the 30th Session of the Commission, its last session had considered a first version of the revision and after a general discussion, had agreed to return the Proposed Draft Revision to Step 3 for comments, and consideration by a physical working group prior to its next session.

116. The Delegation of France, as Chair of the working group, informed the Committee that the working group had revised the Proposed Draft in the light of the comments received, and in particular focused on a new section at the beginning of the document to describe the process in more detail and the content of the "evidentiary dossier". The Delegation also recalled that the use of the accelerated procedure for amendments to Codex standards was mentioned in the Procedural Manual, in addition to the specific recommendation made by the Commission in this respect in 1995.

[13] ALINORM 08/31/18, Appendix X, CX/FFP 09/30/11 (comments of Australia), CX/FFP 09/30/11-Add.1 (comments of European Community, Kenya and Morocco), CRD 5 (Report of the working group held prior to the session), CRD 10 (comments of Mexico), CRD 21 (comments of Argentina), CRD 26 (comments of United States)

117. The Delegation of Canada expressed the view that the working group had not fulfilled its mandate and that a number of changes were not the result of consensus, such as the deletion of the flow diagram from Appendix I of the comments of the European Community in CX/FFP 09/30/11-Add.1. The Delegation also noted the need for a full discussion on the scope to clarify the application and identify the related principles and other questions related to the application of the accelerated procedure to the inclusion of species and the overall process for evaluating the data in the dossier.

118. The Chair of the Committee recalled that the revision had been approved by the Commission on the basis of a project document developed by the Committee, that it was of a general nature and applied to all standards and noted that the Committee could always propose amendments to the scope of the work if required, or alternatively discontinue work, and invited the Committee to consider how to proceed further. The Chair recalled that the decision to revise the inclusion procedure had been taken when the Committee reached agreement on the inclusion of *Clupea bentincki* in the *Standard for Canned Sardines and Sardine-Type Products*, the labelling in the aforementioned standard and that the revised procedure would be applied to all new applications in standards for fish and fishery products.

119. The Delegation of Morocco pointed out that the revision of the Procedure had been decided following the discussion of a new sardine species, but that it applied to all relevant standards and species; its purpose was to improve the scientific basis, transparency and fairness of the process; and the working document in CRD 5 was a basis for discussion that should be considered in more detail. Several other delegations supported this position and proposed to proceed with the revision to improve the current procedure.

120. Some delegations indicated that, while supporting further work, they did not agree with some sections of the text, especially the use of molecular data that would be difficult to apply in practice, and proposed to discuss the text in more detail.

121. Several delegations expressed the view that there was no need to proceed with the revision for the following reasons: the Committee had more substantial food safety and quality issues to address; the existing procedure could be used on a case by case basis; very few standards were concerned by the potential inclusion of species; the proposed procedure was difficult to implement; and was not likely to allow the inclusion of new species in practice. Alternatively, it was proposed to make some limited amendments to the existing Procedure in order to improve its practical application or for inclusion in the *Standard for Canned Sardines only and Sardine-Type Products*.

122. The Committee recognised that it was not possible to reach a conclusion or to consider the text in detail at the present session and therefore agreed that the document prepared by the working group (CRD 5) should be circulated for comments and consideration at the next session. The Committee invited delegations to make concrete proposals, in particular, with respect to scope and practical application of the procedure, for amendment to the text in order to facilitate consideration of this question at the next session.

Status of the Proposed Draft Revision of the Procedure for the Inclusion of Additional Species in Standards for Fish and Fishery Products

123. The Committee agreed to return the Proposed Draft Revision to Step 3 for further comments and consideration at the next session (see Appendix VIII).

PROPOSED DRAFT STANDARD FOR FRESH/LIVE AND FROZEN ABALONE (*HALIOTIS* SPP.) (Agenda Item 11)[14]

124. The Committee recalled that the proposed draft Standard had been returned to Step 2/3 for redrafting by South Africa, circulation for comments and consideration by this session of the Committee.

[14] CL 2008/14-FFP, CX/FFP 09/30/2 (comments of Australia, European Community, Japan and Mexico), CRD 11 (comments of South Africa), CRD 13 (comments of New Zealand), CRD 24 (comments of United States of America), CRD 19 (comments of Mexico)

125. The Delegation of South Africa informed the Committee that in redrafting the proposed draft standard, it had taken into account all the discussions and comments submitted at the last session and the mandate from the Committee to follow the approach of the Standard for Live and Raw Bivalve Molluscs.

126. The Committee had a general discussion on the approach taken in the document, in particular in relation to biotoxins and microbiological criteria in the section on contaminants and hygiene and handling, respectively.

Biotoxins

127. Many delegations did not support the establishment of maximum levels for biotoxins indicating that scientific data had shown that although toxins may be found in some species, that high levels of biotoxins were associated with specific abnormal events and was therefore not the norm and was associated only with certain geographic areas, under certain times and conditions; that there were no recorded illnesses associated with the consumption of abalone; and that monitoring was not feasible especially since harvesting areas were vast. These delegations therefore supported the view that competent authorities should determine the need for monitoring for biotoxins on the basis of risk assessment. Some delegations indicated that guidance on monitoring for biotoxins could be best provided in a code of practice.

128. The Representative of FAO informed the Committee that the International Conference on Molluscan Shellfish Safety in 2009 had confirmed that there was no risk associated with biotoxins in gastropods and that the working group on biotoxins (2006) had developed guiding principles for putting in place maximum levels taking into account background information from monitoring programmes which should also apply to the establishment of biotoxin levels in abalone.

129. Some other delegations noted that there was documented evidence of the occurrence of other biotoxins in addition to saxitoxin in abalone from their particular regions; that saxitoxin is considered a hazard and might be a public health concern and proposed that some guidance would be required for monitoring of these toxins and that a level could be stipulated for the saxitoxin group.

130. Taking into account the discussion, the Committee agreed that the following paragraph could be considered for section I-5.2 in addition to the proposed level for the saxitoxin group: “Abalone from some geographical areas have been found to accumulate biotoxins. It is up to the competent authority to determine whether this risk exists in any geographical areas under their control and if so, put in the necessary mechanisms to ensure abalone with the following requirements in the edible part.”

Microbiological criteria

131. Many Delegations noted that while general microbiological criteria could be applicable, the same risks associated with bivalve molluscs did not apply to abalone and they therefore did not support the classification of growing areas or the establishment of criteria for indicator organisms or *Salmonella* for assessing the safety of abalone. The Delegation of the European Community noted that it might be necessary to develop a microbiological control plan for these species since it was not completely clear that there was no risk associated with *E.coli* or *Salmonella* and that their presence could be dependent on the production area.

Conclusion

132. In view of the discussion, the Committee agreed that South Africa should redraft the proposed draft standard taking into account the discussion and the comments submitted to this session.

Status of the Proposed Draft Standard for Fresh/Live and Frozen Abalone (*Haliotis* spp.)

133. The Committee agreed to return the Proposed Draft Standard to Step 2/3 for redrafting by South Africa, circulation for comments and consideration by the next session of the Committee.

PROPOSED DRAFT STANDARD FOR FISH SAUCE (Agenda Item 12)[15]

134. The Committee recalled that the last session of the Committee had returned the Proposed Draft Standard to Step 2/3 for redrafting by the Delegation of Thailand and other interested delegations, further comments and consideration at the current session.

135. The Delegation of Thailand introduced the proposed draft standard and informed the committee that it had been prepared by Thailand and Vietnam with assistance of Germany and the United States of America. The Delegation reminded the Committee that the last session had requested that the scope be expanded to include other technologies than traditional fermentation. The delegation further informed the Committee that the issue of the histamine level could be a concern and that a background paper on estimating risk of developing histamine poisoning from the consumption of histamine in Thai fish sauce was provided in CRD 28 to support the proposed level in section 6.4. The background paper concluded that applying the current standard of 200 ppm histamine concentration or alternatively a standard of 400 ppm does not greatly affect risk to consumers. The Delegation of Vietnam confirmed that risk assessment undertaken in Vietnam had indicated that at the levels of consumption of fish sauce in Vietnam, there was no risk to human health for the level proposed and that no cases of histamine poisoning had been reported in Vietnam.

136. The Delegations of Thailand and Vietnam informed the Committee that a revised version of the proposed draft standard had been prepared taking into account all comments submitted to the session (CRD 36) and proposed that this document be considered for its discussions.

137. The Committee considered the text in CRD 36 section by section and made the following amendments and/or comments in addition to editorial changes.

Scope

138. A Delegation noted that the scope was inconsistent with 2.2 Process Definition which referred also to other ingredients that may be added and proposed to align the scope with the process definition. Some other delegations were of the opinion that the scope should simply refer to the fact the product was obtained through fermentation and that the reference to the ingredients could be covered by the process definition, but it was confirmed that the main ingredients of fish sauce were fish and salt and should be included in the scope. It was further confirmed that the "other ingredients" referred to in section 2.2 were those ingredients which could accelerate the fermentation process. The Committee therefore agreed to insert "may include other ingredients added to assist the fermentation process" at the end of the first sentence to be consistent with the process definition.

139. A Delegation noted that no provision was made for the fish species used to produce fish sauce. The Delegation of Vietnam clarified that fish sauce could be made from one species or a mixture of fish of different species and it would therefore not be practical to include this requirement in the scope.

5. Contaminants

140. In reply to a proposal to include a provision for biotoxins in this section, it was noted by the Representative of FAO that finfish do not represent a biotoxin risk. The Delegation of Vietnam noted that there was currently no documented evidence to support the inclusion of biotoxins in the Standard. Another Delegation indicated that the Committee should give further consideration to this matter and that production of fish sauce might need to be limited to those from fish species which did not accumulate biotoxins such as ciguatoxin and tetrodotoxin.

6. Hygiene and Handling

141. A proposal was considered to refer to a sampling plan for histamine in paragraph 6.4. However it was agreed to retain the provision unchanged as no sampling plan had been developed for

[15] CX/FFP 09/30/13, CX/FFP 09/30/13-Add.1 (comments of Costa Rica), CRD 12 (comments of United States of America and Japan), CRD 28 (Information Paper on Estimating the Risk of Developing Histamine Poisoning from the Consumption of Histamine in Thai Fish Sauces prepared by Thailand), CRD 34 (comments of Philippines), CRD 36 (redrafted Proposed Draft Standard for Fish Sauce prepared by Thailand and Vietnam)

histamine determination. It was noted that the Committee might consider the development of such a sampling plan for histamine in future.

8.1 Name of the product

142. To a question on whether it would be practical to require the name of the product to be preceded or followed by the common or usual name of the fish used to produce fish sauce in order to ensure traceability, it was clarified that this was only possible in cases where fish sauce was made from one fish species and that the use of the term "may" provided some flexibility on how the product should be named. With regard to the declaration of the means of production of fish sauce, it was clarified that due to the nature of these products, this type of information would allow consumers to make a choice between naturally fermented products and products produced by other means.

9.3.5 Determination of Histamine

143. The Committee agreed to retain only the reference method for histamine, AOAC 977.13.

Status of the Proposed Draft Standard for Fish Sauce

144. The Committee agreed to advance the Proposed Draft Standard to Step 5 for adoption by the 33rd Session of the Commission (see Appendix IX).

PROPOSED DRAFT AMENDMENT TO THE STANDARD FOR QUICK FROZEN FISH STICKS (NITROGEN FACTORS) (Agenda Item 13)[16]

145. The Committee recalled that its last session had agreed to postpone consideration of the nitrogen factors taking into account that further research was underway in Thailand to develop new proposals.

146. The Delegation of Thailand informed the Committee that CRD 15 presented the detailed results of the study conducted in Thailand on Tilapia from aquaculture, as this was one of the most common species used for fish sticks. It appeared that nitrogen content varied significantly depending on farm locations and types of feed, but not with the processing technique used for producing fish fillet and frozen block. As a result, the Delegation of Thailand proposed a nitrogen factor of 3 for Tilapia.

147. The Delegation of Malaysia indicated that it had conducted a similar study at the national level on Tilapia, and that it concluded on a nitrogen factor of 2.62.

148. The Delegation of the United Kingdom noted that there was a wide range of variation in the data presented by the Malaysian study and suggested that future work include a ring trial to determine any variation in laboratory procedures.

149. The Delegation of New Zealand proposed to include a nitrogen factor of 2.46 for Hoki (*Macruronus novazelandiae*) on the basis of studies carried out earlier in New Zealand and in the United Kingdom and informed the Committee that the data were available on the FAO website. The Committee however noted that no study was presented to support this proposal and that more generally it was necessary to provide information on the data collected and methodology used in order to propose new nitrogen factors. The Committee recognised that no conclusion could be reached at the present session and that nitrogen factors should be discussed further at the next session

Status of the Proposed Draft Amendment to the Standard for Quick Frozen Fish Sticks (Nitrogen Factors)

150. The Committee agreed to return the Proposed Draft Amendment to Step 2/3 for redrafting by the Delegation of Thailand, with the assistance of Malaysia, New Zealand and other interested delegations, for comments and consideration at the next session.

[16] CX/FFP 09/30/14 , CRD 13 (comments of New Zealand), CRD 15 (information on nitrogen factors from Thailand), CRD 29 (comments of Malaysia)

FOOD ADDITIVES PROVISIONS IN STANDARDS FOR FISH AND FISHERY PRODUCTS (Agenda Item 14)[17]

151. The Committee recalled that its last session had agreed to update additive provisions in the standards for fish and fishery products and that to facilitate discussion, the Secretariat would prepare a Circular Letter including current additive levels in the standards and the relevant provisions in the General Standard for Food Additives (GSFA), asking for comments on the need for amendments to the food additive sections.

152. The Committee noted that the issue of food additive provisions was a rather complex matter that could not be adequately dealt with in the current session. The Committee therefore agreed to establish an electronic working group to be coordinated by the United States of America and the European Community, working in English only, which would consider comments submitted to this session and prepare proposals for food additives in standards for fish and fishery products and to focus on the technological justification for those food additives and if necessary, propose changes to the GSFA. The Committee noted the proposal by a delegate that how other Committees addressed food additives should be examined.

OTHER BUSINESS AND FUTURE WORK (Agenda Item 15)

153. No matters were discussed under this item.

DATE AND PLACE OF NEXT SESSION (Agenda Item 16)

154. The Committee noted that the next Session was tentatively scheduled to be held in Norway in approximately 18 months time subject to confirmation by the host Government and the Codex Secretariat and that the next session would take place over 6 days preceded by the meeting of the physical working group on smoked fish.

[17] CL 2009/16-FFP, CX/FFP 09/30/15 (comments of Australia, European Community, IFAC and NATCOL)

SUMMARY STATUS OF WORK

Subject Matter	**Step**	**Action by**	**Document Reference in ALINORM 10/33/18**
Draft Code of Practice for Fish and Fishery Products (Lobsters and Crabs and relevant Definitions)	8	Governments, 33rd CAC	para. 27 and para. 47, Appendix II
Amendment of Section 2.1 General Definitions in the Code of Practice for Fish and Fishery Products	-	Governments, 33rd CAC	para. 30 Appendix III
Draft Standard Sturgeon Caviar	8	Governments, 33rd CCFFP	para 68 Appendix V
Proposed Draft Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish	5	Governments, 33rd CCFFP	para. 98 Appendix VI
Proposed Draft Standard for Fish Sauce	5	Governments, 33rd CCFFP	para.144 Appendix IX
Proposed Draft Code of Practice for the Processing of Scallop Meat	4	31st CCFFP	para. 102
Proposed Draft Amendment to Section 3.4.5.1 Water of the Code of Practice for Fish and Fishery Products	3	Governments, 31st CCFFP	para. 27 Appendix IV
Proposed Draft Standard for Quick Frozen Scallop Adductor Muscle Meat	3	Governments, 31st CCFFP	para. 114 Appendix VII
Proposed Draft Revision of the Procedure for the Inclusion of Additional Species in Standards for Fish and Fishery Products	3	Governments, 31st CCFFP	para. 123 Appendix VIII
Draft List of Methods for the Determination of Biotoxins in the Standard for Raw and Live Bivalve Molluscs	2/3	EWG led by Canada Governments 31st CCFFP	para. 80
Proposed Draft Code of Practice for Fish and Fishery Products (Other sections including smoked fish)	2/3	The Netherlands Governments 31st CCFFP	para. 82
Proposed Draft Standard for Fresh/Live and Frozen Abalone (*Haliotis* spp.)	2/3	South Africa Governments 31st CCFFP	para. 133
Amendment to the Standard for Quick Frozen Fish Sticks (Nitrogen Factors)	2/3	Thailand, 30th CCFFP	para. 150
Food Additive Provisions in Standards for Fish and Fishery Products	-	EWG led by USA and EC Governments 31st CCFFP	para. 152

APPENDIX I

LIST OF PARTICIPANTS
LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES

CHAIRPERSON / PRÉSIDENT / PRESIDENTE

Mr. Bjørn Røthe Knudtsen
Norwegian Food Safety Authority
P.O Box 383, N- 2381 Brumunddal; Norway

Tel : + 47 74 11 32 00
Fax : + 47 74 11 32 01
Email: bjrkn@mattilsynet.no

ALGERIA / ALGÉRIE/ ARGELIA

Mr Yahiaoui Mohamed Wali
Directeur Général de la Régulation
et Organisation des Activités-D G R O A
Ministère du Commerce
Cité Zarhouni Mokhtar El Mohammadia
Alger
tel: 00213 21 89 05 36
fax: 00213 89 07 73
Email : yahiaoui@mincommerce.gov.dz

Mrs Saidi Samia
Chef de Division du Contrôle de la Qualité
et de la Repression des Fraudes
tel :021 24 31 11
fax : 021 24 30 11

ANGOLA

Ms Correia Vitor Avelina
Coordenadora do Sub-Comité de
Pescado e Produtos da Pesca
Codex-Angola
Ministério das Pescas
Rua Mortala Mohamed
Ilha de Luanda
C.P. 2601
fax : 244 222 309731
Email: avevictor@hotmail.com

Ms Fernandes Da Mata Maria Filomena
1.ª Secretário Executiva Adjunta do
Codex- Angola
Ministério das Pescas
Rua Comandante Jica
Largo António Jacinto
C.P 527
tel : 244 222 519744
fax : 244 222 323427
Email: filomata57@hotmail.com

ARGENTINA/ ARGENTINE

Mr Ballesteros Omar Fabian
Supervisor
National Agrifood Health and Quality Service
tel : 54-011-42215152
fax: 54-011-41215151
Email: fballest@senasa.gov.ar
eloraar@yahoo.com.ar

Mrs Largente Maria Laura
Veterinary Inspector
SENASA
National Bureau of Animal Health and Food Quality
tel : 549 11 31 55 50 62
fax: 54 29 74 87 22 72
Email : largente@gmail.com

AUSTRALIA / AUSTRALIE

Ms Lynda Feazey
Senior Policy Officer
Australian Government Department
of Agriculture, Fisheries and Forestry
18 Marcus Clarke Stree
Canberra ACT, 2601
tel : +61 2 6272 5910
fax : +61 2 6272 4389
Email : Lynda.Feazey@daff.gov.au

Dr Eileen Gosling
Program Manager- Fish Exports
Australian Government Department
of Agriculture, Fisheries and Forestry
GPO Box 858
Canberra ACT 2601
tel : + 61 2 6272 5141
fax : +61 2 6272 3238
Email : eileen.gosling@daff.gov.au

Mrs Jayne Maria Gallagher
Manager, Product and Market Development
Australian Seafood CRC Ltd
PO BOX 26
Science Park Adelaide
Bedford Park SA 5042
tel: +61 438 336712
fax: +61 8 82017659
Email: jayne.gallagher@seafoodcrc.com

Mr Terence (Ted) David Loveday
Managing Director
Seafood Services Australia
PO Box 2188
Ascot QLD 4007
tel : +61 4 2732 3663
Email : tedloveday@seafoodservices.com.au

AUSTRIA/ AUTRICHE

Mr Ernest Holovsky
Team Leader Quality Specifications
AGES-
Austrian Agency for Health and Food Safety
A-1220 Wien, Spargelfeldstrasse 191
tel: +43 (0) 50 555 41313
fax: +43 (0) 50 555 41318
Email: ernest.holovsky@ages.at

BAHRAIN / BAHREÏN / BAHREIN

Mr AL-Aradi Jassim Saleh
Head of Quality Control
Public Commission for the Protection of Marine Ressources, Environnement and Wild Life.
General Directorate for Protection of Marine Ressource.
tel : +973 17815888
fax : +973 17728459
Email : jassim_alaradi52@yahoo.com

BRAZIL / BRÉSIL/ BRASIL

Ms Rangel Priscilla Bagnatori
Official veterinary
Ministry of agriculture , Livestock and Food Supply-MAPA
Esplanada dos ministérios, bloco D, -3o Andar-ED.SEDE
Sala 347- Brasília- DF 70043-900
tel : +55 61 3218 2968
fax: +55 61 3225 4738
Email : priscilla.rangel@agricultura.gov.br

Mr Kikuchi Lucio Akio
Director of Fish and Fisheries Inspection Division
Ministry of Agriculture
Esplanada dos ministerios 446 -A Brasilia
tel : +55 61 3218 2775
fax: +55 61 3218 2672
Email: lucio.kikuchi@agricultura.gov.br

BURUNDI

Mr Bashirwa Fidele
Director of Water, Fisheries and Aquaculture
Direction of Water, Fisheries and Aquaculture
BP 1850 Bujumbura Burundi
tel: 25722212820
Email : bashirwa44@yahoo.fr

CAMBODIA/ CAMBODGE/ CAMBOYA

Dr Hang Moeun
Deputy General Director
General Directorate of Cambodia
Import-export Inspection of goods
(CAMCONTROL),#50 E.street 144 Phnom Penh
tel:855012967836
Fax:85523426166
Email:moeunhang@yahoo.com

Dr Chhoun Chamnan
Acting Director
Departement of fisheries post-harvest technologies and quality control
fisheries administration, 168norodom blvd
P.O.Box 582,phnom penh cambodia
tel:85523224871
fax :85523224871
Email:chhounchaman@gmail.com

CANADA / CANADÁ

Mrs Mary Ann Green
Director
Canadian Food Inspection Agency
1400 Merivale Rd
Tower 2, 5th floor, room 213
Ottawa, ON K1A 0Y9
tel : 613 7736232
fax: 613 773 5959
Email: maryann.green@inspection.gc.ca

Mr Rick Grant
National Manager
Canadian Food Inspection Agency
1400 Merivale Rd
Tower 2, 5th floor, room 300
Ottawa, ON K1A 0Y9
tel : 613 773 6254
fax: 613 773 5959
Email: rick.grant@inspection.gc.com

Mr Emberley John
Advisor
Fisheries Council of Canada
900 – 170 Laurier Ave. West,
Ottawa, ON K1P 5v5
tel : 613 258 7023
Fax : 613 258 0514
Email : jemberley@explornet.com

CAPE VERDE/ CAP VERT / CABO VERDE

Mrs Lopes Maria Ivone Andrade
Advanced Technicien
General Direction of Fisheries
tel : + 238 261 28 65
fax : + 238 261 28 65
Email : mivonealopes@hotmail.com

CENTRAL AFRICAN REPUBLIC / REPUBLIQUE CENTRAFRICAINE/ REPÚBLICA CENTROAFRICANA

Mr Sana Romain-Serge
Legal Chief of Norms and Quality
Ministère du Commerce et de l'Industrie
BP: 1988 Bangui (RCA)
tel : (+236) 21 61 10 55
tél : (+236) 75 05 84 98
fax: (+236) 21 61 76 53
Email : infas@minco-rca.org
Email: sromainserge@yahoo.fr

CHILE / CHILI

Mrs Rodríguez Arizabalo Loreto Andrea
Veterinarian
Servicio Nacional de Pesca
Fisheries Health Department
Victoria N°2832, Valparaíso
tel : 56-32-2819202
fax : 56-32-2819200
Email : lrodriguez@sernapesca.cl

Mr Bacigalupo Hector
Gerente
Sociedad Nacional de Pesca
Barros Errazuriz 1954, OF.206
Providencia, Santiago
tél : 56-2-5960690
fax: 56-2-2692616
Email: secretaria@sonapesca.cl

CHINA / CHINE

Mr Wang Bin
Associate Professor
Chinese Academy of Fishery Sciences
#150 QingTa Cun, South YongDing
Road, Beijing PR China
tel : 86 10 58731710
fax : 86 10 58731710
Email : caviar@vip.sina.com

Mr Lin Hong
Professor
Dean of Food Science College
Ocean University of china
5 Yushan Road, Qingdao , China
tel : 86 532 82032203
fax: 86 532 82032389
Email : linhong@ouc.edu.cn

Mr Chen Sheng Jun
Associate Professor
South Sea Fisheries Research Institute
Chinese Academy of Fishery Sciences
#231 xingang Road West, HaiZhu District,
Guangdong. PR China.
tel : 86 20 84451442
fax : 86 20 84451442
Email : chensjun@hotmail.com

Mr Fang Jin Cen
Associate Professor
Chinese Academy of Fishery Sciences
#150 QingTa Cun, South YongDing Road, Beijing PR China
tel : 86 10 68673936
fax : 86 10 68673936
Email : fangjc0915@sina.com

Mrs Wang Lian Zhu
Professor
Yellow Sea Fisheries Research Institute
Chinese Academy of Fishery Sciences
#11 Zhanghua Road. Qingdao.ShanDong
PR China
tel : 86 532 85821813
fax : 86 532 85821813
Email : wanglz@ysfri.ac.cn

Mr Wang Tai Jian
Deputy Director General
Chinese Academy of Fishery Sciences
#150 QingTa Cun, South YongDing Road, Beijing PR China
tel: 86 10 68673948
fax : 86 10 68673948
Email : wangtj@cafs.ac.cn

COOK ISLANDS /ILES COOK/ ISLAS COOK

Mr Roi Nooroa
Snr Fisheries Officer
Ministry of Marine Resources
PO Box 85
Rarotonga
Cook Islands
tel : (682) 28-730
fax: (682) 29-721
Email : N.Roi@mmr.gov.ck

COSTA RICA

Ms. Sandi Lizano Mónica
Médico Veterinario
Servicio Nacional de Salud Animal (SENASA)
Ministerio de Agricultura y Ganadería (MAG)
Barreal de Heredia, de Jardines del Recuerdo
1km al oeste, Campus Presbitero Benjamin Nuñez
tel: 00 (506) 22 60 86 48
fax: 00 (506) 22 60 86 48
Email: msandi@senasa.go.cr
monicasandi@gmail.com

CROATIA / CROATIE / CROACIA

Mrs Petek Vesna
Competent Adviser
Ministry of Agriculture, Fisheries and Rural Development
Veterinary Directorate
Public Health Sector
Miamarska 24, Zagreb
tel: ++385 1 6106261
fax: ++385 1 610 920
Email: vesna.petek@mps.hr
peter.vesna@yahoo.com

EGYPT /ÉGYPT/ EGIPTO

Mr Aboraya Salah El Din Hussian
Professor
Cairo University
Giza, Egypt
tel : 0123199931
fax: +202 33375003
Email: aborayaaoad@yahoo.com

Mr Ashraf Ahmed Saber
engineer
Egyptian Food Industry Chamber
tél:+202 25 74 86 27
fax: +202 25 74 83 12
Email: ashraf@egyefi-org.eg

Mr Ibrahim Ahmed Mohamed Ibrahim
Standard specialist
E.O.S
Egyptian Organisation for Standardization and Quality
tel: +2018/4183313
fax: +202 22 845501
Email: ahndsmohamed@hotmail.com

EUROPEAN COMMUNITY (MEMBER ORGANIZATION) / COMMUNAUTÉ EUROPÉENNE (ORGANISATION MEMBRE) / COMUNIDAD EUROPEA (ORGANIZACIÓN MIEMBRO)

Dr Jerome Lepeintre
Administrator responsible for Codex issues
European Commission
Directorate General for Health and Consumers
Rue Froissart 101, B-1049 Brussels, Belgium
tel : (+32 2) 2993701
fax: (+32 2) 2998566
Email : jerome.lepeintre@ec.europa.eu

Dr Lennart Johanson
Legislative Officer
European Commission
Directorate Genera for health and consumers
Rue froissart 101,B-1049 Brussels belgium
tel : +32 2 2981104
fax: +32 2 2969062
Email: Lennart.Johanson@ec.europa.eu

Dr Paolo Caricato
EU Commission Official
European Commission
Brussels
tel : +32 2 2993202
fax : +32 2 2969062
Email: paolo.caricato@ec.europa.eu

FIJI

Mr David Lucas
Director Solander Pacific Ltd
PO Box178
Muai Walu Complex
Walu Bay, Suva, Fiji
tel: +679 3314819
fax: +679 3314973
Email: dave@solander.com.fj

FINLAND / FINLANDE / FINLANDIA

Mrs Maaria Hackzell
Senior Veterinary Officer
Ministry of Agriculture and Forestry,
Department of Food and Health,
P.O. BOX 30, FI-00023
Government, Finland
tel : +358400622027
fax: +358916053338
Email: maaria.hackzell@mmm.fi

FRANCE / FRANCIA

Mrs Myriam Carpentier
Head of Office
Ministère de l'Alimentation, de l'Agriculture
et de la Pêche
DGAL/SA /SDSSA/ BPMED
251 rue de Vaugirard
75732 Paris cedex 15
tel : 0033 (1) 49 55 84 90
fax: 0033 (1) 49 55 56 80
Email: myriam.carpentier@agriculture.gouv.fr

Mr Pascal Audebert
Point de Contact du Codex Alimentarius
en France
Premier Ministre-Secrétariat
Général des Affaires Européennes
2, boulevard Diderot
75572 Paris cedex 12
tel : +33 1 44 87 16 03
fax. +33 1 44 87 16 04
Email: pascal.audebert@sgae.gouv.fr

Mrs Geneviève Morhange
Adjointe au chef de bureau
Ministère de l'Economie, de l'Industrie
et de l'Emploi
Direction Générale de la Concurrence,
de la Consommation et de la Répression
des Fraudes
59 Bd Vincent Auriol 75013 PARIS
tel : 00 33 1 44 97 29 16
fax: 00 33 1 44 97 30 48
Email:genevieve.morhange@dgccrf.finances.gouv.fr

Mr Henri Loreal
IFREMER
rue de l'Ile d'Yeu- BP 21105
44311 – Nantes
tél : +33 (0)2 40 37 42 33
fax: +33 (0)2 40 37 42 05
Email : henri.loreal@ifremer.fr

Ms Laetitia Kolypczuk
IFREMER
Rue de l'île d'Yeu
BP 21105
44311 Nantes cedex 3
tel : +33(0) 2 40 37 41 52
fax :+33(0) 2 40 37 40 71
Email: laetitia.kolypczuk@ifremer.fr

Mr Droin Philippe
Technical Manager
CITPPM
44, rue d'Alésia
75682 Paris cedex 14
tel : +33(0) 1 53 91 44 51
fax: +33(0) 1 53 91 44 70
Email: pdroin@adepale.org

Mrs Litman Sonia
Chargée de mission
CITPPM
44 rue d'Alesia
75684 Paris Cedex 14
tel : + 33(0)1 53 91 44 64
fax :+ 33(0)1 53 91 44 70
Email : slitman@adepale.org

Mr Berhault Nicolas
ICIA
43, rue de l'Evangile-75018 PARIS
tel : +33 1 44 89 67 69
fax : + 33 1 40 35 47 50
Email : nberhault@gmail.com

GAMBIA / GAMBIE

Mr Njie Momodou
Principal Fisheries Officer
Fisheries Department
6, Marina Parade
BANJUL
tél : 00 (220) 4223345/ 7991789
Email : chonahamodado@yahoo.co.uk

Mr Nget Momodou Lamin.A
Principal Food Standard Officer
Ministry of Health and Social Welfare,
BANJUL, THE GAMBIA, WEST AFRICA
tel : (+220) 9902353
Email: mlab38@yahoo.com

GERMANY/ ALLEMAGNE/ ALEMANIA

Mr Morrison Cliff
Senior expert
Bundesverband der deutschen
Fischindustrie und des
Fischgrosshandels e. V.
Grosse Elbstrasse 133
22767 Hamburg
tel : +49 40 38 18 11
fax : +49 40 38 98 554
Email : info@fischverband.de

Prof. Joerg H Oehlenschlaeger
Head of Delegation
Max- Rubner -Institute, Federal research
Institute for Nutrition and Food
Palmaille 9
DE- 22767 Hamburg
tel : +494038905151
fax: +494038905262
Email : joerg.oehlenschlaeger@mri.bund.de
j.oehlenschlaeger@gmr.net

GHANA

Mr ESHUN Francis Kojo
Head, Fish Control and Export Project
Ghana Standards Board
P.O Box MB- 245
Accra
tel : 00 233 244 953 950
fax: 00233 21 501494
Email : kojshun2000@yahoo.com

Mr Manu Samuel Duodu
Regional Director of Fisheries
Ministry of Food and Agriculture
Fisheries Commission
P.O BOX M 37
Accra
tel: 00233244571903
fax: 0023321663036 / 002338126585
Email: sdmanu@yahoo.com

Mr Namoale Mii Amasah
Deputy Minister (Fisheries)
Ministry of Food and Agriculture
P.O BOX M37
Accra
tel: 00233243265338
00233208120236
fax: 0023321663036
Email: info@fischverband.de

Mr Quaatey Samuel
Director of Fisheries
Ministry of Food and Agriculture
Fisheries Commission
P.O BOX M37
Accra
tel: 00233208163412
fax: 0023321663036
Email: samquaatey@yahoo.com

GUINEA / GUINÉE

Mr Sidi Mouctar Dicko
Sécretaire Général du Ministère de la Pêche et
de l'Aquaculture
BP 307 Conakry
tel:+22430415230

Mr Bah Abdourahim
Directeur Géneral Service Industries
Industries Assurance Qualité des Produits
de la pêche et de l'Aquaculture
BP:307 Conakry
tél:+22460292374/+22464273720
Email: rahimbah13@yahoo.fr

Mrs Aribot M'mah Savané
Directrice Générale Adjointe
Ministère de la Pêche et de
l'Aquaculture / Service Industries
et Assurances-
Qualité des Produits de la Pêche
et de l'Aquaculture (SIAQPPA)
tel : (00224)60251716
64427715

Email : mahbond@yahoo.fr

GUINEA-BISSAU / GUINEE BISSAU

Mr Junior Nicolau Barbosa
Inspecteur Pêche
Ministère de la Pêche- CIPA
(Centre de Recherche de la Pêche Appliquée)
BP N° 102- BISSAU
tel : 6610795/ 521 8806
fax: 00 (245)3221019
Email: nicobaju1@yahoo.fr

GUYANA

Mr Collin James
Director of Veterinary Public Health
Ministry of Health- Veterinary Public Health unit
Guyana S.A
tel : 592 222 5643
fax : 592 222 5643
Email: carverjass@yahoo.co.uk

HONDURAS

Mr Velasquez Juan Ramón
Food Safety Head
Servicio Nacional de Sanidad
Agropecuaria (SENASA)
Boulevard Miraflores Avenida FAO,
primer piso, Tegucigalpa, Honduras.
Tel : 005042326213 Ext. 130
fax : 005042310786
Email: jvelasquez@senasa-sag.gob.hn
jrvelaz70@yahoo.com.mx

ICELAND/ ISLANDE/ ISLANDIA

Mr Sverrisson Gardar
Senior Officer
Icelandic Food and Veterinary Authority
Austurvegur 64
800 SELFOSS
tel : +354 5304800
fax : +354 5304801
Email : gardar.sverrisson@mast.is

INDIA/ INDE

Shri Intisar Anees Siddiqui
Fisheries Research and Investigation Officer
Department of Animal Husbandry, Dairying
and Fisheries
Ministry of Agriculture, Government of India
Kirshi Bhawan,
New Delhi 110001
tel: 0091 11 23388911 Extn-4481
fax: 0091 11 23097013
Email: frio4@nic.in
intisarsiddiqui@yahoo.co.in

INDONESIA / INDONÉSIE

Dr Sunarya
Deputy for Standard Aplication National
Standardization Agency of Indonesia
Codex Contact Point-Indonesia
Manggala Wanabakti Blok 4 Lt 4
Jakarta
Email : SPS@bsn.or.id

Mr Dicky Ahmad Rizaldy
3rd Secretary Economic AMD
Embassy of the Republic of Indonesia
Email : d.rizaldy@gmail.com

Ms Martha Santi Siburian
Deputy Director for Quality Standardization;
Ministry of Marine Affairs and Fisheries (MMAF)
Jl. Medan Merdeka Timur No. 16 Jakarta Indonesia
and Fisheries (MMAF)
Email: martha_santi@yahoo.com

Ms Theresia Istihastuti
Head of Section of Quality Standard
Analysis: Ministry of Marine Affairs
and Fisheries(MMAF)
Jl. Medan Merdeka Timur No. 16 Jakarta
Indonesia
tel/fax: 021 35 00149
Email: isti_theresia@yahoo.com

Mr Davi Warsyah
Head of Section of Quality Standard Implementation,
MMAF
Jl. Medan Merdeka Timur No. 16 Jakarta
Email: dwarsyah@yahoo.com

IRELAND/ IRLANDE/ IRLANDA

Mr Falvey John
Seafood Safety Manager
Sea Fisheries Protection Authority
Clogheen Park
Clonakilty
Co. Cork
tel : +353 (0) 23 8859352
fax : +353 (0) 23 8859370
Email : john.falvey@sfpa.ie

ITALY / ITALIE / ITALIA

Mr Ciro Impagnatiello
Ministero delle Politiche Agricole
Alimentarie Forestali
Via XX Settembre 20
00187 Roma
tel : +39 06 46656046
fax : +39 06 4880273
Email: c.impagnatiello@politicheagricole.gov.it

Brunella Lo Turco
Ministero delle Politiche Agricole Alimentari
e Forestal
Vie XX Settembre 20
00187 Roma
tel:+390646656041
fax:+39064880273
Email:b.loturco@politicheagricole.gov.it

Mario Pazzaglia
API Associazione Piscicoltori Italiani
Via del Perlar Verona
tel: +393355783802
Email:mario.pazzaglia@agroittica.it

JAPAN/ JAPON/ JAPÓN

Dr Toyofuku Hajime
Section Chief
Office of Food Safety
National Institute of Public Health
tel : 81 48 458 6150
fax: 81 48 469 0213
Email : toyofuku@niph.go.jp

Dr Kurokawa Kota
International Affairs Division, Food Safety
and Consumer Affairs Bureau
Ministry of Agriculture, Forestry and Fisheries
tel : 81 3 3502 8732
fax: 81 3 3507 4232
Email:kouta_kurokawa2@nm.maff.go.jp

Dr Suzuki Toshiyuki
Senior Researcher
National Research Institute of Fisheries Science,
Fisheries Research Agency
tel : +81 45 788 7630
fax: +81 45 788 5001
Email : tsuzuki@affrc.go.jp

Dr Kobayashi Hidetaka
Associate Director
Food Safety and Consumer Policy Division
Food Safety and Consumer Affairs Bureau
Ministry of Agriculture, Forestry and Fisheries
tel : 81 3 3502 5722
fax: 81 3 3597 0329
Email: hidetaka_kobayashi@nm.maff.go.jp

Mr Yamada Hideya
Director
International Affairs, Food Safety and
Consumer Policy Division
Food Safety and Consumer Affairs Bureau
Ministry of Agriculture, Forestry and Fisheries
tel : 81 3 3502 8732
fax: 81 3 3507 4232
Email: hideya_yamada@nm.maff.go.jp

KENYA

Mr Paul Kimeto
Standards Officer
Kenya Bureau of Standards
P.O BOX 54974 00200
Nairobi, Kenya
tel : +254 6948000
Email : info@kebs.org

Mr Okumu Makogola
Senior Assistant Director of Fisheries
Ministry of Fisheries Development
Directorate of Quality Assurance and Marketing
P.O BOX 58187-00200, Museum Hill
Nairobi
tel : + 2543742320
fax: +254 3743 699
Email:okumumak@yahoo.co.uk
samaki@saamnet.com

Mr Mwabwagizo Juma Hamisi
Laboratory Technologist
GovernmentChemist Department
P.O BOX 81119-80100 MOMBASA
tel : +254734746563

Email: mwabwagizo@yahoo.com

Mr Mutai Geoffrey Kiprop
Chief Food Hygiene Officer
Department of Veterinary Services,
Veterinary Research
Laboratories, P.O Kabete
Code- 00625
KAGEMI- Nairobi
tel : +254 722743520
fax: +254 20 83331273
Email : geoffreymuttai@yahoo.com

Mrs Obungu Lucy Ayugi
Principal Fisheries Officer
Ministry of Fisheries Development
Directorate of Quality Assurance and Marketing
P.O BOX 58187-00200
Nairobi
tel : +254 20 3742320
fax: +254 20 3743699
Email : lucyobungu@yahoo.com
samaki@saamnet.com

Mr Khamisa Mohamed Shueb Ayub
Managing Director
Kenya Dry Products LTD
P.O BOX 88578
Code 80100
MOBASA
tel : +254 720202010 / 202171368
fax: 254 4122200079
Email : kaizer@africaonline.co.ke

KIRIBATI

Mr Inentumoa Kairaoi
Senior Fisheries officer
Fisheries Division
MFMRD
P.O BOX 276
TARANA KIRIBATI
tel:+68678095
fax:+68628295
Email: kairaoii@fisheries.gov.ki

LIBERIA

Mr Alvin. S Jueseah
Fisheries Research Officer / Statistician
The Bureau of National Fisheries,
Ministry of Agriculture,
Republic of Liberia, Free Port of
Monrovia, Bushrod Island
tel : +2315824491
Email : alvinjueseah@yahoo.com

Mr Cooper Eric T.
Food Standards Officer
Bureau of National Fisheries
Ministry of Agriculture
Monrovia
tél : 002316857944
Email: temcooper@yahoo.com

LIBYAN ARAB JAMHIRIYA / JAMAHIRIYA ARABE LIBYENNE / JAMAHIRIYA ÁRABE LIBIA

Mr Hassan Tawfik
Head of Libyan Codex Committee on Food
from Animal Origin
Libyan National Center for Standards
and Metrology
P.O BOX 5178 Tripoli
tel: +218925037007
fax: +218214630885
Email :tawfik@maghreb.cc

MADAGASCAR

Dr Ralaimarindaza Luc Josué Dieudonné
Responsable Service Technique
Autorité Sanitaire Halieutique
2 rue Farafaty Ampandrianomby
BP 530 – Antananarivo
101 Madagascar
tel : +261 20 22 401 02
fax : +261 20 22 405 92
Email : rstash@bluelina.mg

Dr Jean Richard Rakotonomenjanahary
Veterinary Doctor (Vétérinaire Inspecteur
Officiel)
Autorité Sanitaire Halieutique
(Competent Authority on Fish and
Fishery Products)
rue Farafaty Ampandrianomby
BP 530 – Antananarivo
101 Madagascar
tel : +261 20 22 401 02
fax : +261 20 22 405 92
Email : sertechash@blueline.mg

Mr Ramiandrisoa Bernardin
Commissaire du Commerce
Ministère du Commerce
Service des Normes et Qualité

6 bis, rue Rainandriamampandry-
Antananarivo 101 Madagascar
tel : +261 331229676
Email : dnq.snor@moov.mg
ranardin@gmail.com

MALAYSIA/ MALAISIE/ MALASIA

Mr Mohari Mohamad Tamin
Director of Marketing Divison
Malaysian Fisheries Development Authority
10th floor, Menara Olimpia,
Jalan Raja Chulan, Peti Surat 12630
50200 KUALA LUMPUR
tel : +603 26177263
fax : +603 20708713
Email : mohari@lkim.gov.my

Mr Zainal A'Bidin Alip
Director of Marketing Division
Federal Agriculture Marketing Authority
Bangunan Fama Point,
Lot 17304 Jalan Persiaran 1,
Bandar Baru Selayang, 68100,
Batu Caves, Selangor,
MALAYSIA
tel: +603 61264117
fax: +603 61374766
Email: zainal@fama.gov.my

Mr Ahmad Hazizi Aziz
Director of Fisheries Biosecurity
Department of Fisheries Malaysia
3rd level, Podium 2, block 4G2,
Wisma Tani
62628 Putrajaya
tel : +603 88 704705
fax: +603 888903794
Email : ziziawaameen@yahoo.com
ahmazi01@dof.gov.my

Mrs Che Rohani Awang
Senior Principal Research Officer
Malaysian Agricultural Research
and Development Institute
Stesen Mardi Manir, Peti Surat 3,
20700 Kuala Terengganu,
Terengganu
tel : +609 6152022
fax : +609 6152042
Email : cra@mardi.gov.my

Dr Nor Ainy Mahyudin
Senior Fisheries Officer
Department of Fisheries Malaysia
3rd level, Podium 2, block 4G2,
Wisma Tani,
62628 Putrajaya
tél : +603 88704610
fax: +603 888903794
Email: norainy@dof.gov.my

Mr Mohad Khazin Hamzah
Deputy Director General
Malaysian Fisheries Development Authority
10th floor, Menara Olimpia
Jalan Raja Chulan, Peti Surat 12630
50200 Kuala Lumpur
tel : +603 2617 7000
fax: +603 2070 9285
Email: khazin@lkim.gov.my

MALAWI

Mr Kachinjika Orton Malion
Chief Fisheries Officer
Department of Fisheries
P.O BOX 593
Lilongwe
tel : +265 999 510 127
fax: +265 1 788 712
Email: kachinjika@yahoo.co.uk

MALDIVES/ MALDIVAS

Mrs Luthfy Asifa
Laboratory Technologist
Maldives Food and Drug Authority
Sosun Magu,
Male', Republic of Maldives
tel : + 960 7671352 / +960 3343534
fax: +960 3343539
Email: asifa.luthfy@heath.gov.mv
luvasi@hotmail.com

Mrs Mariyam Rizna
Scientific Officer
Maldives Food and Drug Authority
Sosun Magu.
Malé Republic of Maldives
tel:+9607707019/+9603343534
fax:+9603343539
Email:mariyamrizna@health.gov.mv
mariyam.rizna@gmail.com

MAURITANIA / MAURITANIE

Mr Ba Abou Sidi
Directeur de l'ONISPA
Office National d'Inspection Sanitaire
des Produits de la Pêche et de
l'Aquaculture (ONISPA)
Ministère des Pêches et de l'Economie
Maritime
B.P 1416 Nouadhibou
tel: +222 574 05 12 / +222 687 54 52
fax: +222 574 05 73
Email : abousidiba@yahoo.fr

Mr Aly Yahya Dartige
Chef Département chimie -microbiologie
et suivi du Milieu Aquatique
Office National d'Inspection Sanitaire
des Produits de la Pêche et de
l'Aquaculture (ONISPA)
BP 1416 Nouadhibou- Mauritanie
tel: (+222) 574 0511 /+ (222) 6970035
fax: (+222) 574 0573
email: alydartige@yahoo.fr

Mr Mohamed Lémine Bilal
Chef Antenne ONISPA- Nouakchott
Office National d'Inspection Sanitaire
des Produits de la Pêche et de
l'Aquaculture (ONISPA)
BP 1416 Nouadhibou
tel: (+222) 574 0511/+ (222) 2106061
fax: (+222) 574 0573
Email: bilal_mr@yahoo.fr

Mr. Amadou Niang
Chef Département Inspection Sanitaire
Office National d'Inspection Sanitaire
des Produits de la Pêche et de
l'Aquaculture (ONISPA)
BP 1416 Nouadhibou- Mauritanie
tel: (+222) 574 0511/+(222) 6832247
fax: (+222) 574 0573
Email: amabaicoro@yahoo.fr

MOROCCO / MAROC / MARRUECOS

Mr Najib Layachi
Head of delegation
Etablissement Autonome de Contrôle
et de Coordination des Exportations (EACCE)
72, rue Mohamed Smiha
Casablanca
tel : 00 212 5 22 30 28 02
fax: 00 212 5 22 31 51 68
Email:layachi@eacce.org.ma

Mr Abdellah Janati
Directeur des Industries de la Pêche Maritime
Ministère de l'Agriculture et de
la Pêche Maritime
Département de la Pêche Maritime
tel : 00 212 5 37 68 82 95
fax : 00 212 5 37 68 82 94
Email:janati@mpm.gov.ma

Mrs Sabah Lazraq
Chef de Division
Ministère de l'Agriculture et de
la Pêche Maritime
Département de la Pêche Maritime
tel : 00 212 5 37 68 82 71/72
fax : 00 212 5 37 68 83 24
Email: lazrak@mpm.gov.ma

Mr Abdelkrim Berrada
Responsable du comité d'organisation de la 30ème session du CCFPP
Ministère de l'Agriculture et de
la Pêche Maritime
Département de la Pêche Maritime
tel : 00 212 5 37 68 82 78
fax : 00 212 5 37 68 83 24
Email: berrada@mpm.gov.ma

Dr Amal Bekkari
Ministère de l'Agriculture et de
la Pêche Maritime
Département de la Pêche Maritime
tel : 00 212 5 37 68 82 77
fax : 00 212 5 37 68 83 24
Email:bekkari@mpm.gov.ma

Mrs Mounia El Alaoui
Ministère de l'Agriculture et de
la Pêche Maritime
Département de la Pêche Maritime
tel : 00 212 5 37 68 82 87
fax : 00 212 5 37 68 83 24
Email:malaoui@mpm.gov.ma

Dr Hommani Mohamed
Conseiller- vétérinaire
Union Nationale des Industries de la Conserve
de Poisson
7, rue el yarmouk Longchamp Casablanca
tel: 00 212 5 22 94 37 49
fax : 00 212 5 22 94 37 49
Email: unicop@menara.ma

Mr Hassan Tagafait
Chef de Département
Etablissement Autonome de Contrôle
et de Coordination des Exportations (EACCE)
72, rue Mohamed Smiha
Casablanca
tel : 00 212 5 22 30 83 39
fax: 00 212 5 22 31 51 68
Email : tagafait@eacce.org.ma

Mr Mohamed El Jamali
Président
Union Nationale des Industries de
la Conserve de Poisson
7, rue el Yarmouk
Longchamps
Casablanca
tel : 00 212 5 22 9437 49
fax: 00 212 5 22 94 37 49
Email: unicop@menara.ma

Mr Moncef Kabbaj
Membre
Union Nationale des Industries de
la Conserve de Poisson
7, rue el Yarmouk
Longchamps
Casablanca- Morocco
tel : 00 212 5 22 9437 49
fax: 00 212 5 22 94 37 49
Email: unicop@menara.ma

Mr Said Kabbaj
Membre
Union Nationale des Industries de
la Conserve de Poisson
7, rue el Yarmouk
Longchamps-Casablanca
tel : 00 212 5 22 9437 49
fax: 00 212 5 22 94 37 49
Email: unicop@menara.ma

Mr Majid Joundy
Secrétaire Général
Union Nationale des Industries de la
Conserve de Poisson
7, rue el Yarmouk
Longchamps
Casablanca
tel : 00 212 5 22 9437 49
fax: 00 212 5 22 94 37 49
Email: unicop@menara.ma

Mr Lhoussaïne Saad
Direction de la Sécurité Sanitaire des
Produits Alimentaires
Avenue Hadj Ahmed Cherkaoui
Agdal, Rabat
Email:Saad_lho@yahoo.fr

Mrs Amina El Hajjab
Direction de la Sécurité Sanitaire des
Produits Alimentaires
Avenue Hadj Ahmed Cherkaoui
Agdal, Rabat
Email:amelhajjab@yahoo.fr

Dr Abdelaziz Choukri
Direction de la Sécurité Sanitaire des
Produits Alimentaires
Avenue Hadj Ahmed Cherkaoui
Agdal, Rabat
Email:de.dvha@gmail.com

Dr Alehyane Khadija
Veterinarian Doctor
Ministry of Agriculture and Fisheries
DPSSA- DVHA
tel : 00 212 6 75 37 95 14
fax: 00 212 5 37 68 20 49

Mrs Jemaa Bardach
Direction de la Sécurité Sanitaire des Produits Alimentaires
Avenue Hadj Ahmed Cherkaoui Agdal Rabat
Email: bardachj@yahoo.fr

Mr. Maâti Benazzouz
Directeur P.I
Laboratoire Official d'Analyses et de
Recherches Chimiques LOARC
tel:+212522302196
fax:+212522301972
Email:maatibenazzouz@yahoo.fr

Dr Souad Kifani
Institut National de Recherches Halieutiques
2, Rue tiznit. Casablanca
tel: +212 522 22 02 45
fax: +212 522 26 69 67
+212 522 26 88 57
Email:kifani@inrh.org.ma

Mr Abdelghani Chafik
Chef du Departement "Qualité et Salubrité
du Milieu Marin"
Institut National de Recherches Halieutiques
2, Rue tiznit. Casablanca
tel: 05 22 29 85 31

fax: 05 22 29 85 31
Email:chafik@inrh.org.ma

Mr. Jean SIEGEL
Membre
Union Nationale des Industries de la
Conserve de Poisson
7, rue el yarmouk
Longchamp
Casablanca
tel: 00 212 5 22 94 37 49
fax : 00 212 5 22 94 37 49
Email: unicop@menara.ma

MOZAMBIQUE

Mrs Timana Ana David
Deputy Director
National Institute for Fish Inspection
Rua do Bagamoyo
N° 143, Maputo, Moçambique
fax : 258 21 315230
tel: 258 21 315228 / 21 315226 / 21 315229
tel: +258 824768750
fax: +25821315230
Email: atimana@inip.gov.mz

Mr Fernando Raúl
Head of Sanitary Licensing Department
National Institute for Fish Inspection
Rua do Bagamoyo
N° 143, Maputo, Moçambique
fax : 258 21 315230
tél: 258 21 315228 / 21 315226 / 21 315229
Email : angelaraul_mz@yahoo.com.br
tel : +258825680172
fax: +25821315230
Email : rfernando@inip.gov.mz

NAMIBIA

Mr Mvula Eino Natangwe
General Manager : Regulatory
and Consumer Protection
Namibian Standards Institution
Old Sanlam Buildingm First Floor
suite 115
11-17 Dr. Frans Indogo Street, Windhoek
tel: +264 61 386 400
fax : +264 61 386454
Email : emvula@nsi.com.na

Mr Kaakunga Riundja Ali
Chief Executive Officer: Namibian
Standards Institution
Namibian Standards Institution
Old Sanlam Buildingm First Floor
suite 115
11-17 Dr. Frans Indogo Street, Windhoek
tel: +264 61 386 400
fax: +264 61 386454
Email: kaakunga@nsi.com.na

Mr Shiimi Filimon
Statistician
Ministry of Fisheries and Marine Resources,
Pravate Bag 13355 Windhoek, Namibia
Brenden Simbwaye Square, Uland Street
tel : 00264612053082
fax: 002646124461
Email: filimonshiimi@mfmr.gov.na

NEW ZEALAND / NOUVELLE ZÉLANDE/ NUEVA ZELANDIA

Mr Jim Sim
Senior Programme Manager Animal Products
New Zealand Food Safety Authority
86 Jervois Quay, Wellington
New Zealand
tel : +64 4 894 2609
fax : +64 4 894 2643
Email : jim.sim@nzfsa.govt.nz

Mr Tony Craig
Quota Manager/Business Development Advisor
Aotearoa Fisheries Limited
C/- Level 1
Aotearoa Fisheries House
138 Halsey Street
P.O Box 445 Auckland
Email :tony.craig@afl.maori.nz

NIGERIA / NIGÉRIA

Mr. George Musa
Assistant Chief Standards Officer
Standards Organisation of Nigeria
N° 52 Lome Street
Wuse zone7
Abuja
tel: 08057346449
Email: bob_king_george@yahoo.com

NORWAY / NORVÈGE/ NORUEGA

Mr. Valset Geir
Senior Advisor
Norwegian Food Safety Authority
Head Office
P.O BOX 383, N-2381 Brumunddal
Norway
tel : +47 23216800
fax: +47 23216801
Email : geir.valset@mattilsynet.no

Mr. Bjoershol Bjarne
Senior Advisor
Norwegian Food Safety Authority
Head Office
P.O BOX 383, N-2381 Brumunddal
Norway
tel : +47 23216665
fax: +47 23216801
Email: bjbjo@mattilsynet.no

Mrs Fallebø Marit
Senior Adviser
Norwegian Food Safety Authority
Head Office
P.O BOX 383, N-2381 Brumunddal
Norway
tel : +4723216800
fax : +4755215707
Email: mafal@mattilsynet.no

Mr Helbak Ivar Andreas
Senior Adviser
Norwegian Ministry of Fisheries and
Coastal Affairs
P.O BOX 8118 Dep,
NO-0032 Oslo, Norway
tel : +47 47 23 82 99
fax: 47 22 24 56 78
Email : ivar.helbak@fkd.dep.no

Mr Knutsen Gunn Harriet
advisor
norwegian seafood federation
tel:+4799110000
fax:+4723088731
Email: gunn.knutsen@fhl.no

PAKISTAN / PAKISTÁN

Mr Hashim Ansar Alam
Deputy director
Marine fisheries departement westwharf
Fish harbour karachi pakistan
tel:0092216600274
fax:0092219214895 / 0092219214890
Email: asraralam123@hotmail.com

PAPUA NEW GUINEA / PAPOUASIE-NOUVELLE-GUINÉE / PAPUA NUEVA GUINEA

Mr. Paina Wane
Audit and Certification Officer
Papua New Guinea National Fisheries
Authority (NFA)
11th FI, Deloitte Tower
Post Office Box 2016, PORT MORESBY,
PAPUA NEW GUINEA
tel : 675 309 0444 / 675 309 0476
fax : 675 320 2061
Email : wpaina@fisheries.gov.pg

Mr Numilengi Timothy
Coordinator: Audit and Certification Unit
PNG National Fisheries Authority
11th FI, Deloitte Tower, Downtown
Post Office Box 2016, PORT MORESBY,
PAPUA NEW GUINEA
tel : 675 309 0444 / 675 309 0478
fax : 675 320 2061
Email : tnumilengi@fisheries.gov.pg

PERU/ PÉROU/ PERÚ

Mrs Maria Estela Ayala
Directora
Servicio Nacional de Sanidad Pesquera
Ministerio de la Produccion

Mr Garcia Alfredo Mesinas
ASESOR
Ministerio de la Produccion
Despacho Viceministerial de Pesquería
Calle uno oeste
N° 060- URB Corpac
Lima 27
tel : (511)6162208
fax: (511) 6162222-703
Email : agarcia@produce.gob.pe

Mr Thierry Roca-Rey
Ministro
Ministerio de Relaciones Exteriores

PHILIPPINES / FILIPINAS

Mrs Guerra Melannie
Head of Philippine Delegation
Department of Agriculture
Bureau of Fisheries and Aquatic Resources
3F PCA Bldg. Elliptical Road Diliman
Quezon city
tel : (+632) 4545863
fax: (+632) 4545863
Email : murguerra2002@yahoo.com

Mr Matubang Mark
Member of the Philippine Delegation
Bureau of Agriculture and Fisheries
Product Standards
BPI Compound, Visayas ave., Diliman,
Quezon City
tel: +632 9206131
fax: +632 4552858
Email: markmatubang@yahoo.com

POLAND / POLOGNE / POLONIA

Mrs Kolodziejczyk Monika Teresa
Specialist
Ministry of Agriculture and Rural Development
The Department of Fisheries
Wspólna Sreet N° 30
00-930 Warsaw
tel : +48 22 623 23 86
fax : +48 22 623 22 04
Email : Monika.Kolodziejczyk@minrol.gov.pl

Mrs Hillar-Walczak Jolanta
Senior Specialist
Sea Fisheries Institute in Gdynia
Kollataja Sreet N°1
81-332 Gdynia
tel : +48 58 73 56 156
fax: +48 58 73 56 110
Email : quality@mir.gdynia.pl

PORTUGAL

Ms Coutinho Maria Antonieta Cunha
Direcção Geral das Pescas e Aquicultura
Av. de Brasília
1449-030 Lisboa
tel: 00351213035992
fax: 00351213035933
Email: antonietac@dgpa.min-agricultura.pt

QATAR

Mr Maarfeya Aref
Technologist
Central Food Lab supreme
Council of health
tel:009744417676
fax:009744353769
Email: arefmarafi@hotmail.com

REPUBLIC OF THE CONGO / REPUBLIQUE DEMOCRATIQUE DU CONGO / REPÚBLICA DEL CONGO

Dr Dibwe Kalamba Floribert
Chef de Division Industries Animales
Ministère de l'Agriculture, Pêche et Elevage
Secrétariat Général
Direction de la Production et Santé Animales
tel : + 243815043580
Email : dikalambaflor@yahoo.fr

REPUBLIC OF SEYCHELLES/ REPÚBLICA DE LAS SEYCHELLES/ RÉPUBLIQUE DES SEYCHELLES

Mr Hoareau Christopher George
Chief Fish Inspector
Fish Inspection and Quality Control Unit
Seychelles Bureau of Standards
P.O Box 953, Victoria
Mahe, Seychelles
tel: +248 324768/15
fax: +248 373826
Email: vetfiqcu@seychelles.net

RUSSIAN FEDERATION / FÉDÉRATION DE RUSSIE / FEDERACIÓN DE RUSIA

Mrs Sveltana Filippova
Leading Scientist
Russian Federal Research Institute of
Fisheries and Oceanography (VNIRO)
17 V. Krasnoselskaya, Moscow 107140
RUSSIA
tel : 8 499 264 90 90
fax : 8 499 264 90 90
Email : standards@vniro.ru

Mr Yuri Ryazantsev
Leading engineer
Russian Federal Research Institute of
Fisheries and Oceanography (VNIRO)
17 V. Krasnoselskaya, Moscow 107140
RUSSIA
tel : 8 499 264 17 85
fax: 8 499 264 90 90
Email : standards@vniro.ru

SAUDI ARABIA / ARABIE SAOUDITE / ARABIA SAUDITA

Mr Ahmad Saleh Al Eyadh
General Director of Agriculture and
Environment Department
Ministry of Agriculture
Deputy of Fisheries Affairs
tel : 00966505200233
fax : 0096614055851
Email : ssek99@hotmail.com

Mr Alhowaish abdulaziz
Ministry of Agriculture
Kingdom of Saudi Arabia
Fax:+96614031722
Email: frel@moa.gov.sa

SLOVENIA / SLOVÉNIE / ESLOVENIA

Mr CENCIČ Lucijan
Sectretary
Ministry of Agriculture, Forestry and Food
Dunajska Cesta 58
1000 Ljubljana
Slovenia
tel : +386 1 478 9126
fax: +386 478 9055
Email : lucijan.cencic@gov.si

SOUTH AFRICA / AFRIQUE DU SUD / SUD ÁFRICA

Mrs Kathryn Sinclair
Senior R&D Manager
Ivrin & Johnson Limited
Davidson Street
Woodstock, 7925
Cape Town
South Africa
tel : +27 21 4407229
fax: +27 21 440 7271
Email : kathryns@ij.co.za

Mr Deon Charles Jacobs
Principal Inspector
National Regulator for Compulsory
Specifications
P.O Box 36558
Chempet
7442
tel : +27 21 526 3400
fax : +27 21 526 3451
Email : jacobsdc@nrcs.org.za

Mr Cyril Musawenkosi Ndlovu
Legal Manager
National Regulator for
Compulsory Specifications
Private Bag X25
Brooklyn 0075
Pretoria
tel : +27 12 4286114
fax : +27 12 4287112
Email : ndlovucm@nrcs.org.za

Mr Michael Jeffrey Young
General Manager
National Regulator for Compulsory
Specifications (NRCS)
P.O Box 36558
Chempet
Cape Town
7442
South Africa
tel : +27 21 5263400
fax : +27 21 5263451
Email : youngmj@nrcs.org.za

Mr Pieter Truter
Specialist
National Regulator for Compulsory Specifications
Box 36558
Chempet
Cape Town
7442
Republic of South Africa
tel : +27 21 5263400
fax : +27 21 5263451
Email: truterpj@nrcs.org.za

Mr Terry Bennett
Consultant
21, Pentz Drive
Table View 7441
Cape Town
South Africa
tel : +27 076 303 032
Email: terryben@netactive.com

SPAIN / ESPAGNE/ ESPAÑA

Da Inés Blanco Pérez
Jefa de Área
Agencia Española de Seguridad
Alimentaria y Nutrición
Ministerio de Sanidad y Política Social
C/Alcalá, n°56
28071 Madrid
tel : +34 91 338 00 64
fax: +34 913380169
Email : iblanco@msps.es

Da Lidia Perlado Hergueta
Tecnico Superior
Subdirección General de Gestion de
Riesgos Alimentarios
Agencia Española de Seguridad
alimentaria y Nutrición
Ministerio de Sanidad y Politica Social
C/ Alcela n°56
28071 Madrid
tel:+34913380713
Fax:+3491330169
Email: lperlado@msps.es

D Jesús Carrión Marcos
Jefe de Área de Comercialización Pesquera
Ministerio de Medio Ambiente, y Medio Rural
y Marino
Pº Infanta Isabel, 1,
28071 – Madrid
tel : +34 91 347 36 89
fax : +34 91 347 84 45
Email: jcarrion@mapya.es

D Juan Manuel Vieites Baptista De Sousa
Asociación Nacional de Fabricantes
de Conservas de Pescado y Mariscos
Centro Tecnico Nacional de Conservacion de
Productos de la Pesca
(ANFACO / CECOPESCA)
Carretera Colegio Universitario, 16- 36310 Vigo
tel : +34 986 46 93 01
fax: +34 986469269
Email : jvieites@anfaco.es

SRI LANKA

Mr Fernando Roshan
Executive Director / CEO
Sri Lanka Sea Foods Exporters Association
C/O Tropic Frozen Foods LTD,
N° 16/1, Tammita Road,
Negombo
tel : +94 31 22 33656
fax: +94 31 22 33348
Email : roshan_f@sltnet.lk

SUDAN / SOUDAN /SUDÁN

Ms Mohamed Amani Mustafa
Public Health Officer
Federal Ministry of Health-
Khartoum- SUDAN
Enviromental Health and Food
Control Administration
tel : 00249918250476
fax: 00249155145620
Email: amani15-Mustafa@yahoo.com

Mrs Hassan Salwa Abdelrahman
Head Fish Hatcheries Section
Ministry of Animal Resources and Fisheries
General Administation of Fisheries
Khartoum- SUDAN
tel : 00249911488216
fax: 00249183493772
Email: salabdelrahman@yahoo.com

Mr Ammar Osman Elobied
Researcher
Fisheries Research Center
Ministry of Sience and Technology
P.O Box 1489 Khartoum
SUDAN
tel : 0122977967
fax: 0153997256
Email : ammaroo@windowslive.com

SURINAME

Mrs Juliette Colli-Wongsoredjo
Director of Fish Inspection Institute
Fish Inspection Institute of the Ministry
of Agriculture, Animal Husbandry and
Fisheries Cornelis Jongbawstraat
50 – Paramaribo,
Suriname
tel : 597 472233
fax: 597 424441
Email : viskeuringsinstituut@gmail.com
julcol_2000@yahoo.com

Mr Debie Radjendre
Courdinator Agricultural Health and
Food Safety Unit
Ministry of Agriculture, Animal
Husbandry and Fisheries
tel: 00597 520291
Email: radebie@hotmail.com

SWEDEN / SUÈDE/ SUECIA

Mrs Kerstin Jansson
Deputy Director
Ministry of Agriculture
103 33 Stockholm
Sweden
tel : +46 8 405 1168
fax: +46 8 20 6496
Email : kerstin.jansson@agriculture.ministry.se

Mr Croon Lars-Börje
Chief Government Inspector
National Food Administration
Box 622
SE-751 26 Uppsala
tel : +46 18 175564
fax: +46 18 175310
Email : lbcr@slv.se

Mr Ataz Antonio
Administrator
General Secretariat of the Council of the EU
tel : 00 32 2 2814964
fax : 00 32 2 2819425
Email : antonio.ataz@consilium.europa.eu

TANZANIA / TANZANIE

Mr Claude John Shara Mosha
Chief Standards Officer (Food/
Feeds Safety and Quality)
Tanzania Bureau of Standards
P.O Box 9524 , Dar es Salaam
Tanzania
tel: +255 22 2450206 – Office
+255 713 324 495 -Mobile
fax: +255 22 245 0959
Email : cjsmoshar@yahoo.co.uk
claude.mosha@tbstz.org

Mrs Mlolwa Mwanaidi
Assistant Director, Quality and Standards
Ministry of Livestock Development
and Fisheries
tel : +255 22 286 0470/1 -Office
+255784 909292-Mobile
fax : +255 22 2860472
Email: mrmlolwa@yahoo.com

Dr Kimanya Martin Epafras
Scientific Manager of Food Evaluation
Tanzania Food and Drugs Authority
P.O box 77150
Dar ES Salaam
tel:+255754317687
fax:+255222450793
Email.mekimanya@yahoo.co.uk

Mrs Shemhina Rehema Futo
Food Premise Registration Officer
Tanzania Food and Drugs Authority
P.O box 77150
Dar ES Salaam
tel:+255787066127
fax:+255222450793
Email:rehema@hotmail.com

THAILAND / THAILANDE / TAILANDIA

Dr Yamprayoon Jirawan
Deputy Director General
Department of Fisheries
Ministry of Agriculture and Cooperatives,
Kaset-Klang, Phaholyothin Road,
Chatuchak, Bangkok
19000
tel: +66 (2) 562 0525
fax: +66 (2) 562 0561
Email: jirawany@fisheries.go.th

Mr Arkubkriya Vijak
Deputy Secretary General
National Bureau of Agricultural Commodity
and Food Standards
Ministry of Agriculture and Cooperatives,
50 Phaholyothin Rd, Ladyao,
Chatuchak, Bangkok
1900 Thailand
tel: +66 (2) 561 2277 ext 1112
fax: +66 (2) 561 3546
Email: vijak@acfs.go.th

Ms Somboonyarithi Varatip
Director, Fishery Technological
Development Division
Department of Fisheries
Ministry of Agriculture and Cooperatives,
Kaset-Klang, Paholyothin Road,
Chatuchak, Bangkok
1900 Thailand

tel : +66 (2) 561 1902
fax : +66 (2) 561 1902/ 9406200
Email : varatip98@gmail.com
varatips@fisheries.go.th

Ms Sukhumparnich Krissana
Senior Food Technologist
Fish Inspection and Quality Control Division
Department of Fisheries
Ministry of Agriculture and Cooperatives,
Kaset-Klang, Paholyothin Road,
Chatuchak, Bangkok
19000
tel : +66 (2) 558 0150 5
fax: +66 (2) 558 0134
Email: krissana_s@YAHOO.COM

Ms Deprasirtvong Kalayanee
Senior Professional Level
Food and Drug Technical Officer
Food and Drug Administration
Ministry of Public Health
Taladkwan, Muang, Nonthaburi
11000 THAILAND
tel: +66 (2) 590 7411
fax: +66 (2) 591 8460
Email: are@fda.moph.go.th

Mr Thangsombat Tust
Vice President
Thai Food Processors Association
170/21-22, 9th floor, Ocean Tower Building I
New Ratchadapisek Rd., Klongtoey,
Bangkok 10110 THAILAND
tel: +66 (2) 261 2684 6
fax: +66 (2) 261 2996 7
Email : thaifood@thaifood.org

Mrs Chomdong Wacharawan
Assistant Executive Director
Thai Frozen Foods Association
92/6 6th floor Sathorn Thani 2,
North Sathorn Road, Silom,
Bangrak , Bangkok 10500
tel : +66 (2) 235 5622-4
fax: +66 (2) 235 5625
Email: wacharawan@thai-frozen.or.th

Ms Wanasen Srianant
Research Assistant
National Center for Genetic Engineering
and Biotechnology (BIOTEC)
113 Thailand Science Park, Phaholyothin
Road, Klong 1, Klong Luang, Pathumthani
12120
tel : +66 (8) 469 97200
fax: +66 (2) 588 0066
Email: swanasen@utas.edu.au
sri-anant@biotec.or.th

Ms Bamrungbhuet Usa
Senior Standards Officer
Office of Commodity and System Standards
National Bureau of Agricultural Commodity
and Food Standards
Ministry of Agriculture and Cooperatives,
50 Phaholyothin Rd., Ladyao,
Chatuchak, Bangkok
10900 THAILAND
tel: +66 (2) 561 2277 ext 1601
fax: +66 (2) 561 3373
Email: usa@acfs.go.th

Mr Larpphon Manat
Senior Standards Officer
Office of Commodity and System Standards
National Bureau of Agricultural Commodity
and Food Standards
Ministry of Agriculture and Cooperatives,
50 Phaholyothin Rd., Ladyao,
Chatuchak, Bangkok
10900 THAILAND
tel: +66 (2) 561 2277 ext 1443
fax: +66 (2) 561 3357
Email : mlarpphon@hotmail.com

THE NETHERLANDS/ PAYS-BAS / PAISES BAJOS

Mr Gerard Lambert Roessink
Senior Scientific Officer
Ministry of Agriculture Nature and Food Quality
Food and Consumer Products Safety Authority
De Stoven 22/ P.O Box 202
7200 AE Zutphen, The Netherlands
tel : +31 575 588100
fax: +31 575 588200
Email: gerard.roessink@vwa.nl

THE SULTANATE OF OMAN / SULTANAT D'OMAN / SULTANATO DE OMÁN

Mr Aziz Bin Hamad Al Khatry
Deputy Director of Fishery Quality
Control Center
Ministry of Fisheries Wealth
Director General of Fisheries Research
Fishery Quality Control Center
tel : 00968 99329805
fax : +968 24738222

Email: aalkhatri@hotmail.com

TUNISIA

Mr Gharbi Nesrine
Médecin vétérinaire
Agence Nationale de Contrôle Sanitaire
et Environnemental des Produits A.N.C.S.E.P
tel :+216 23 16 46 46
Email : gharbinesrine1205@yahoo.fr

TURKEY / TURQUIE / TURQUÍA

Mrs Tayfun E. Derya
Veterinarian
Ministry of Agriculture and Rural Affairs
tel: +90 312 417 41 76
Email : deryat@kkgm.gov.tr

Mr Dede Huseyin
Head of section
Ministry of Agriculture and Rural Affairs
tel : +90 312 425 5013
Email : huseyind@kkgm.gov.tr

UNITED KINGDOM/ ROYAUME-UNI / REINO UNIDO

Ms Pendi Najran
Senior Policy Officer, Head of UK delegation
Food Standards Agency
Labelling , Standards and Allergy Division
125 Kingsway
London
WC2B 6NH
United Kingdom
tel: +44 (0) 20 7276 8157
fax: +44 (0) 20 7276 8193
Email: pendi.najran@foodstandards.gsi.gov.uk

Dr. Kevin Hargin
Head, Radiological Safety Unit
Food Standards Agency
125 Kingsway
London
WC2B 6NH
tel: +44 (0) 20 7276 8953
Email:
KEVIN.HARGIN@FOODSTANDARDS.GSI.GOV.UK

Mr. Cliff Morrison
AIPCE-European Fish Processors Association
Brussels, Belgium
tel: +44(0) 150 733 8342
Email: cliff.morrison@btinternet.com

UNITED STATES OF AMERICA / ETATS UNIS D'AMÉRIQUE/ ESTADOS UNIDOS DE AMÉRICA

Mrs Karen Stuck
U.S. Codex Manager
U.S.Codex Office
US Department of Agriculture
1400 Independence Ave,SW Room 48615
tel: 202 690 2057
fax: 202 690 0820
Washington, DC 20250
Email : Karen.Stuck@osec.usda.gov

Mrs Barbara McNiff
Senior International Issues Analyst
U.S Codex Office
US Department of Agriculture
1400 Independence Ave,SW Room 48615
Washington,DC20250
tel: 202 690 2719
fax: 202 720 3157
Email: Barbara.Mcniff@fsis.usda.gov

Mr Kenneth Lowery
International Trade Specialist
International Regulations and
Standards Division
Office of Scientific and Technical Affairs
Foreign Agricultural Service
U.S Department of Agriculture
1400 Independence Avenue SW
Room 5934 South Building
Washington DC 20250
tel : 202 720 5461
Email: Kenneth.Lowery@fas.usda.gov

Mr Timothy Hansen
Director Seafood Inspection Program
NOAA National Marine Fisheries Services
1315 East West Highway SSMC#3
Silver Spring.MD20910
tel : 301 713 2355
fax: 301 713 1081
Email: Timothy.Hansen@noaa.gov

Mr Donald Kraemer
Deputy Director
Office of Food Safety (HFS-300)

U.S Food and Drug Administration
5100 Paint Branch Parkway
College Park,MD20740
tel : 301 436 1700
fax: 301 436 2601
Email: Donald.Kraemer@fda.hhs.gov

Dr William Jones
Director , Division of Seafood Safety
Office of Food Safety (HFS- 325)
5100 Paint Branch Parkway
College Park, MD 20740
U.S Food and Drug Administration
tel : 301 436 2300
fax : 301 436 2601
Email: William.Jones@fda.hhs.gov

Ms Melissa Ellwanger
Chief ,Shellfish and Aquaculture Policy Branch
Office of Food Safety (HFS- 325)
US. Food and Drug Administration
5100 Paint Branch Parkway
College Park, MD 20740
tel: 301 436 2300
fax: 301 436 2601
Email: Melissa.Ellwanger@fda.hhs.gov

Mr. Paulo Almeida
Office of Catfish Inspection Programs
Food Safety and Inspection Service
U.S Department of Agriculture
1400 Independence Ave,SW Room 31625
Washington DC 20250
tel : 202 720 9866
fax : 202 720 0124
Email: Paulo.Almeida@fsis.usda.gov

Mr Clarke Beaudry
Consumer Safety Officer
Office of Food Safety HFS 325
U.S Food and Drug Administration
5100 Paint Branch Parkway
College Park, MD 20740
tel : 301 436 2300
fax: 301 436 2601
Email: Clarke.Beaudry@fda.hhs.gov

Mr Charles Lohmeyer
Special Projects Manager
Red Arrow International
633 S 20th Street Manitowoc, WI 54220
tel : 920 683 5500 ext 1114
fax : 920 769 1282
Email: c.lohmeyer@redarrowusa.com

Mr Kenny Lum
President
Seafood Products Association
1600 S.Jackson street
Seattle, WA 98144
tel: 206 323 3540
fax: 206 323 3543
Email: klum@spa-fod.org

Mr Gregory J. Morrow
Vice President and Chief Legal Officer
Contessa Premium Foods, Inc
222 West 6th Street, 8th Floor
San Pedro, CA 90731
tel : 310 832 8000
fax: 310 519 2686
Email : GMorrow@contessa.com

Dr W.Steven Otwell
Professor
Aquatic Food Products Lab
P.O Box 110375
Gainesville, FL 32611
tel : 352 392 4221
fax: 352 392 9467
Email: otwell@ufl.edu

Mr Randy Rice
Seafood Technical Program Director
Alaska Seafood Marketing Institute
311 North Franklin Street, Suite 200
Juneau, AK 99801
tel: 907 465 5567
fax: 907 465 5572
Email: RRice@alaskaseafood.org

Mrs Lisa Weddig
Director , Regulatory and Technical Affairs
National Fisheries Institute
7918 Jones Branch Dr.,Suite 700
McLean, Virginia 22102
tel : 703 752 8886
fax: 703 752 7583
Email : lweddig@nfi.org

Ms. Sue Huske
Regulatory Compliance Manager
Red Arrow Products
633 S.20th Street
Manitowoc,WI 54220
tel : 920 769 1151
fax: 920 769 1281
Email: s.huske@redarrowusa.com

URUGUAY

Mrs Medina Dinorah
Vet.Dr. Certification Unit
National Direction of Aquatic
Ressources (DINARA)
Constituyente 1497
Montevideo, Uruguay
tel : 005982 400 46 89 ext.147
fax: 005982 401 72 36
Email : dmedina@dinara.gub.uy

VIET NAM

Mr Vu Ngoc Quynh
Director of Vietnam Codex Office
General Secretary of Vietnam National
Codex Committe
Vietnam National Codex Committee
70 Tran Hung Dao street,
Hanoi, Vietnam
tel : 84 4 39426605
fax: 84 4 28222520
Email: vnquynhcodex@ycvn.gov.vn

Ms Nguyen Thi Minh Ha
Deputy Director of Vietnam Codex Office
Vietnam National Codex Committe
70 Tran Hung Dao street,
Hanoi, Vietnam
tel : 84 4 39428030
fax: 84 4 28222520
Email: nmhacodex@ycvn.gov.vn

Mrs Tran Thi Dung
Officer
Vietnam Institute of Fisheries Economics and
Planning
10 Nguyen Cong Hoan, Badinh
Hanoi, Vietnam
tel: 84 4 37715066
fax: 84 4 38345674
Email: trandungusvn@yahoo.com

ZAMBIA

Mr Timothy Phiri
Chief Fish Inspector
Department of Fisheries
P.O Box 350100
Chilanga, Zambia
tel : +260 211 278418
fax: +260 211 278618
Email : tim-phiri2005@yahoo.com

INTERNATIONAL NON GOVERNMENTAL ORGANISATIONS/ ORGANISATIONS NON GOUVERNEMENTALES/ ORGANIZACIONES NON GUBERNAMENTALES

SADC Regional Office – INFOSA – INFOPÊCHE

Mrs Arthur Luisa
Infoche SADC regional office
Windhoek Namibia
tel:+264 61 27 94 33
fax:+264 61 27 94 34
Email: Luisa.athura@gimail.com

FAO

Mr Lahsen Ababouch
Chief Fish Utilization and Marketing Service
Fish Products and Industry Division
Fisheries and Aquaculture Department
Viale delle Terme di Caralla, 00153 Rome, Italy
tel: 39 06 57054157
fax: 39 06 57055188
Email: Lahsen.Ababouch@fao.org

Mr Karunasagar Iddya
Senior Fishery Industry Officer (Quality)
Fish Utilization and Marketing Service
Fish Products and Industry Division
Fisheries and Aquaculture Department
Viale delle Terme di Carcalla- 00153 Rome
tel : +39 06 57054873
fax : +39 06 57055188
Email : Iddya.Karunasagar@fao.org

JOINT FAO/ WHO SECRETARIAT

Mrs Verna Carolissen-Mackay
Foods Standards Officier
Joint FAO/ WHO FOOD Standards Programme
Viale Delle Terme di Caracalla
00153 Rome, Italy
tel : +39 06 570 55629
fax: +39 06 570 54593
Email: verna.carolissen@fao.org

Ms Selma Doyran
Secretary, Codex Alimentarius Commission
Joint FAO/WHO Food Standards Programme
Viale Delle Terme di Caracalla
00153 Rome, Italy
tel : +39 06 570 55826
fax: +39 06 570 54593
Email: selma.doyran@fao.org

NORWEGIAN SECRETARIAT

Mrs Vigdis Veum Moellersen
Norwegian Codex Contact Point
Norwegian Food Safety Authority
P.O.Box 383, N-2381Brumunddal,
Norway
tel: 47 23 21 66 69
fax: 47 23 21 68 01
Email: visvm@mattilsynet.no

APPENDIX II

DRAFT CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS

(At Step 8 of the Procedure)

SECTION 2. DEFINITIONS FOR THE PURPOSE OF THIS CODE

2.9 LOBSTERS

Autolysis	is the breakdown or deterioration of lobster meat or viscera by means of indigenous enzymes
Black spot	is the appearance of dark pigments at the joints and injured parts of lobster segments, caused by oxidative enzyme reaction;
Butt end of the tail	is that part of the tail muscle of lobsters which extends into the cephalothorax;
Cephalothorax	is the body region of lobsters which is formed anatomically by the fusion of head and thorax;
Claw	means the pincer appendage at the end of the lobster arm;
Cooking	means boiling of lobsters in potable water, clean sea water or brine or heating in steam for a period of time sufficient for the thermal centre to reach a temperature adequate to coagulate the protein;
Deterioration	means those natural processes of quality reduction that occur after harvesting and that are quite independent of man's deliberate intervention;
De-vein	is to remove the intestine/vein from the lobster tail;
Enzymatic activity	is the catalytic action of enzymes on biochemical reactions;
Insensible	is the state of unresponsiveness as a result of pacifying through thermal, electrical, or physical process imposed on lobsters prior to cooking;
Intestine/Vein	is used in this code to mean the posterior portion of the lobster alimentary tract;
Lobster	means commercially important species in the order Decapoda, and families Nephropidae, Palinuridae or Scyllaridae or other important economic taxonomic families;
Pasteurisation	means subjecting lobster meat to heat at times and temperatures, which inactivates spoilage and pathogenic micro-organisms of public health concern without noticeable changes in appearance, texture and flavour of the product;
Pounding	refers to the holding of live lobsters in water tanks or floating crates for extended periods of time;
Shell	is the hard outer covering of lobsters;
Shucking	is the process of removing the meat from the shell and appendages of the lobsters;
Tail	is the abdomen or posterior part of the body;
Tailing	is the process of separating the tail from the cephalothorax;

Trimming	is the process of removing any signs of blood, membrane or remnants of the gut which may be attached to the shell or meat of lobsters;
Waste	means those lobster parts which remain after the meat removal operation is completed.

2.XX CRABS

Batch systems	are those processing methods where crabs are processed as bulk units;
Butchering	is the process of removing crab back shell, viscera and gills. In some fisheries it may also include the removal of walking legs and claws. Butchering may take place either before or after cooking;
Brown Meat	the edible parts of the crab, excluding the claw, leg and shoulder meat, which may include the liver and gonads or parts thereof.
Claw	means the pincer appendage at the end of the crab.
Cooking	means boiling of crabs in potable water, clean sea water or brine or heating in steam for a period of time sufficient for the thermal centre to reach a temperature adequate to coagulate the protein;
Crab	means the commercially important species of the Decapoda order in the Brachyura and Anomura sections;
Deterioration	means those natural processes of quality reduction that occur after harvesting and that are quite independent of man's deliberate intervention;
Enzymatic activity	is the catalytic action of enzymes on biochemical reactions;
Insensible	is the state of unresponsiveness as a result of pacifying through thermal, electrical, or physical process imposed on crabs prior to cooking;
Leg tips	are the third leg segments counting from the crab shell;
Pasteurisation	means subjecting crab meat to heat at times and temperatures, which inactivates spoilage and pathogenic micro-organisms of public health concern without noticeable changes in appearance, texture and flavour of the product;
Picking	refers to the process of removing meat from the crabs shell by machine or by hand;
Pounding	refers to the holding of live crabs in water tanks or floating crates for extended periods of time;
Sections	are the cleaned, eviscerated and degilled crab parts usually consisting of one half of the crab body and the attached walking legs and claw;
Shaking	refers to the industrial practice of manual meat extraction used for king, snow and Dungeness crabs *Cancer magister*. The cooked sections are processed by hitting or shaking the meat out of the shell;
Shell	the hard outer covering of crabs;
Shoulder	is the section containing meat in the body of the crab;
Shucking	is the process of removing the meat from the shell;
Trimming	is the process of removing any signs of blood, membrane or remnants of the gut which may be attached to the shell.
Waste	means those crab parts which remain after the meat removal operation is completed.

SECTION 13 - PROCESSING OF LOBSTERS

In the context of recognising controls at individual processing steps, this section provides examples of potential hazards and defects and describes technological guidelines, which can be used to develop control measures and corrective action. 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 recognised that in preparing a HACCP and/or 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 Code of Practice it is not possible to give details of critical limits, monitoring, record keeping and verification for each of the steps since these are specific to particular hazards and defects.

This section applies to lobsters in the genus *Homarus*, and to rock lobsters, spiny lobsters, and slipper lobsters in the genera *Palinurida*, and *Scyllaridea*, and to squat lobsters in the genera *Cervimundia* and *Pleuronocodes*, and the Norwegian lobster, *Nephrops norvegicus*.

13.1 GENERAL – ADDITION TO PRE-REQUISITE PROGRAMME

In addition to the pre-requisite programme outlined in Section 3 of this document, the processing facility operators are encouraged to evaluate the design and construction of their facility and the maintenance and sanitation of their operation, specific to the processing of lobsters. Consideration should be given to the following:

13.1.1 Design and Construction of Equipment and Utensils

- in batch systems the inactivation tank, cooker and cooling tank should be located adjacent to each other and may be provided with an overhead hoist or gantry provided to transfer baskets from one to the other;
- cookers should be designed to provide constant and adequate supply of heat so that all lobsters could be given the same time/temperature exposure during the cooking operation.

13.1.2 Hygiene Control Programme

- water, which has been in contact with lobsters, should not be re-used unless reconditioned to avoid taint problems;
- it is undesirable for the same workers to handle the raw as well as the cooked product. If this is unavoidable, stringent precautions should be taken to prevent cross contamination of the cooked product by micro-organisms from raw material;

13.2 General Considerations for the Handling of Lobsters

Refer to Section 4 – General Considerations for the Handling of Fresh Fish and Shellfish.

13.2.1. Potential Hazards and Defects Associated with Lobsters

Refer also to Section 4.1 Potential Hazards Associated with Fresh Fish and Shellfish and Section 5.3.3.1 Identification of Hazards and Defects.

13.2.1.1 Potential Hazards

Bacteria

Staphylococcus aureus is an aerobic or facultatively anaerobic gram positive spherical micro-organism. It is coagulase-positive and ferments glucose. Some strains can produce enterotoxins.

Staphylococcus is not found in the normal microflora on fish. The natural habitat for this organism is the skin and mucous membranes of animal and man. The presence of *Staphylococcus* on fish is an indication of post-harvest contamination due to poor personal hygiene. The organism is a poor competitor and will not multiply in fish. However, in fish or shellfish products, where the normal flora is reduced or eliminated (i.e. cooked peeled shrimp or crab meat), the presence of staphylococci indicates a potential for food poisoning.

Listeria monocytogenes is widely dispersed in the environment and foods. The organism is not exceedingly heat resistant and is killed by proper cooking. *L. monocytogenes* can grow in the presence

or absence of oxygen and can survive in salt concentrations up to 16 % NaCl. It can also endure frozen storage. An important factor in foodborne listeriosis is that the pathogen can grow to significant numbers at refrigeration temperatures when given sufficient time.

Despite the fact that a wide variety of foods may be contaminated with *L. monocytogenes*, outbreaks and sporadic cases of listeriosis are predominately associated with ready to eat (RTE) foods. Although the data is limited, surveys suggest that RTE seafood such as cooked lobster, cooked crab and smoked fish have been found to contain this bacterium.

Chemical Hazards

Veterinary Drugs

Medicated feeds or drugs may be used to control the spread of aquatic animal diseases where lobsters are maintained and fed in holding pounds. Residues of veterinary drugs in excess of recommended guidelines should be considered as a potential hazard.

Biotoxins

PSP toxins (saxitoxins) have been identified in the hepato-pancreas of lobsters.

13.2.1.2 Potential Defects

Black discoloration. Black discoloration is caused by melanin formation most commonly in the ventral tail segment joints and muscle surrounding the pericardium. It develops in the integumentary tissues and muscle surfaces, but does not occur in the muscle meat tissue. The use of sulfating agents to prevent this discoloration is a common practice and may result in unacceptable residues. The potential for residues of sulfating agents leads to labelling requirements because these chemicals are common allergens.

13.2.2 Minimise the Deterioration of Lobsters - Handling

Refer also to Section 4.3 – Minimise the Deterioration of Fish – Handling

- it is generally known that under similar conditions, the quality of lobsters deteriorate more rapidly than fish and therefore care in maintaining the lobsters live prior to processing is strongly recommended;
- since lobster legs and other appendages can be easily broken and the damage can cause the risk of infection and weakening of the lobster, care should be taken to handle live lobsters at all times;
- tanks and wells for pounding live lobsters should be so placed and constructed as to ensure survival of the lobsters;
- live lobsters should be carefully packed in clean tanks, wells, crates, open-weave bag, or in boxes covered with wet sacking and held at as low a temperature as practicable, as required of varying species;
- holding tanks are regarded as a better method of storage for long-term handling than well storage;
- the use of clean Hessian or jute bags, for transport, is preferred. Bags made of woven synthetic material should not be used;
- where bags open weave are used for transport, precautions should be taken to avoid suffocation of lobsters due to slime or mud;
- care also should be taken to maintain the necessary humidity in holding the lobsters live in bags for transport;
- species, which mutilate each other, should have the claws banded as soon as possible after catching;

- if it is not possible to keep lobsters alive until the time of processing, lobsters should be killed. Tails should be carefully separated and cleaned before freezing or cooling down to the temperature of melting ice, which should be done as rapidly as possible.

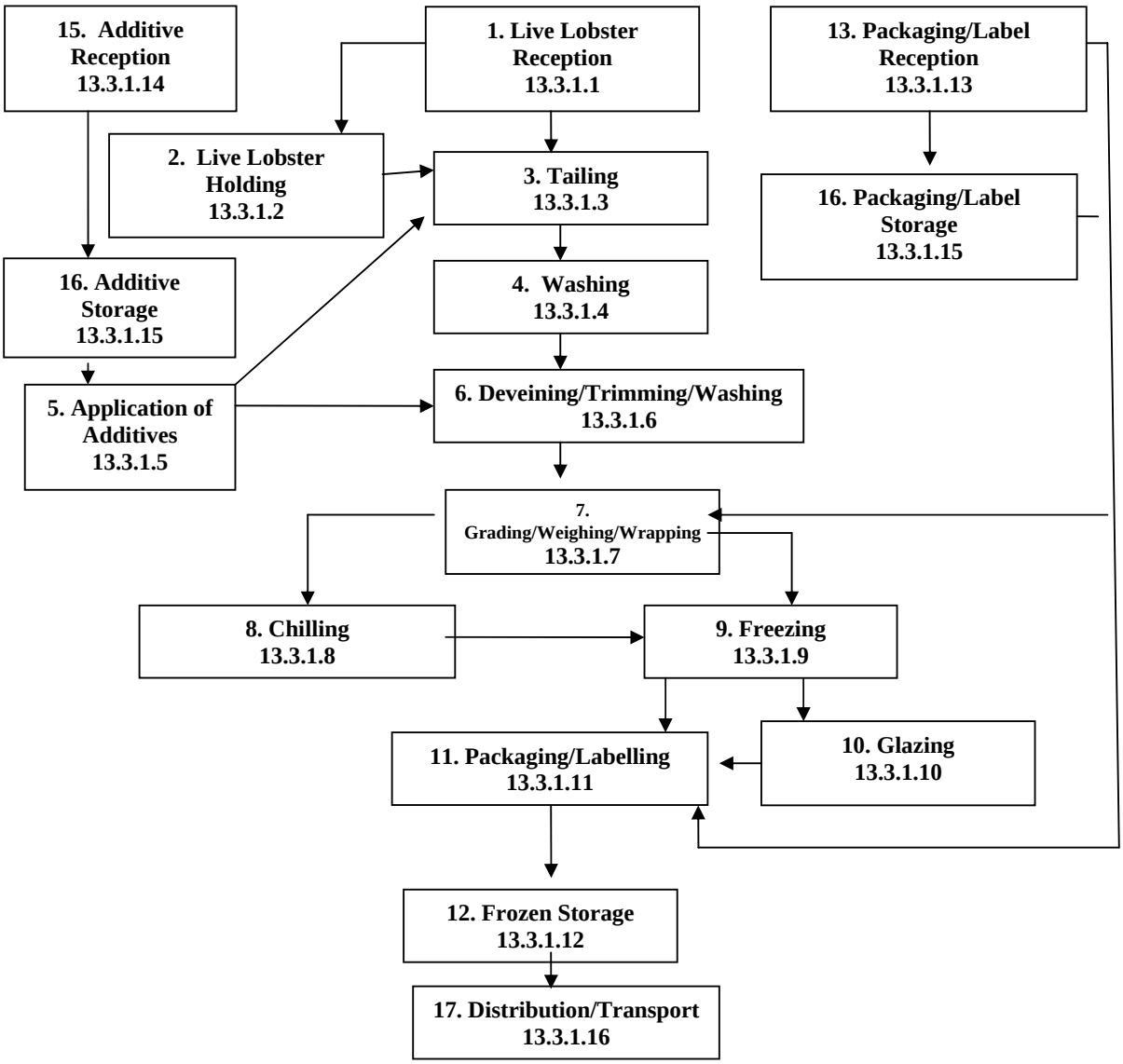
13.3 Processing Operations – Lobsters

Once a processing facility has established a pre-requisite programme (Section 3) the principles of HACCP (Section 5) can be applied to each individual process within that facility.

This section provides two examples of products derived from lobsters. Special consideration was given to elaborate on products which involve heat treatment because of their potential impact on food safety (such as post processing handling). The products and their respective flow diagrams are as follows: Frozen Raw Lobster Tails (Fig. 13.1), Chilled Cooked Whole Lobster/Chilled Cooked Lobster Meat (Fig. 13.2). To provide an appreciation for other products of lobsters, a reference has been included in Appendix A and B.

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

Figure 13.1 Example of flow chart for frozen raw lobster processing



13.3.1 Frozen Raw Lobster Tail

13.3.1.1 Live Lobster Reception (Processing Step 1)

Potential Hazards:

Potential Defects: *Weak or injured lobsters, lobster decomposition*

Technical Guidance:

- live lobsters should be inspected upon receipt to ensure that they are alive, which can be demonstrated by active leg movement and the tail of lobsters being curled lightly underneath the body when the lobster is picked up. Dead lobsters have a high probability of decomposition due to a high autolysis rate and should not be processed
- weak lobsters should be processed immediately;
- since lobster legs and other appendages can be easily broken and the damage can cause to risk of infection and weakening of the lobsters, care in handling should be applied to live lobsters at all times. The necessary skills should be acquired by lobster handlers;
- lobsters should be rejected if they are known to contain harmful or extraneous substances and/or defects which will not be eliminated or reduced to an acceptable level by normal procedures of sorting or preparation. An appropriate assessment should be carried out to determine the reason(s) for loss of control and the HACCP or DAP plan should be modified where necessary.

13.3.1.2 Live Lobster Holding (Processing Step 2)

Refer also to Section 13.2.2 – Minimise the Deterioration of lobsters – Handling, of this document. Refer also to "Section 6.1.2 – Growing Water Quality" and Section 6.3.2 Veterinary Drugs.

Potential Hazards: *Veterinary Drug Residues*

Potential Defects: *Lobster decomposition*

Technical Guidance:

- all live lobsters should be processed as soon as possible;
- storage time should be monitored where appropriate and should be as short as practical;
- to minimise damage, black discoloration (melanosis) and mortality losses during captivity, especially for the moulting stage of lobsters, over-crowding should be avoided and this can be achieved by controlling the stocking density;
- for short-term storage, live lobsters should be held in suitable containers and in land-based tanks and wells that should be supplied with running sea water, or in dry crates;
- dead whole lobsters should not be processed and should be rejected and disposed in a proper manner. An appropriate assessment should be carried out to determine the reason(s) for loss of control and the DAP plan should be modified where necessary.
- If drugs are used, appropriate withdrawal times must be followed.

13.3.1.3 Tailing (Processing Step 3)

Potential Hazards: *Microbiological contamination*

Potential Defects *Improper tailing, decomposition*

Technical Guidance:

- when lobsters are not landed alive, the tail and cephalothorax should be separated immediately after catching. This practice is strongly recommended as they are brought on board. Tails should be carefully separated and cleaned before freezing or cooling down to the temperature of melting ice, which should be done as rapidly as possible;

- tailing should be carried out as rapidly as possible.

13.3.1.4 Washing (Processing Step 4)

Refer also to section 8.1.5 – Washing and Gutting.

Potential Hazards: *Unlikely*

Potential Defects: *Poor cleaning*

Technical Guidance:

- lobster tails should be washed in plenty of running potable water, or clean sea water, or water as outlined in 13.1.2, to remove all impurities.

13.3.1.5 Application of Additives to Lobster Tails (Processing Step 5)

Potential Hazards: *The use of non-approved additives; incorrect application of Sulphites[1].*

Potential Defects: *Physical contamination, black spots due to inadequate application of Sulphites[1], incorrect application of Phosphates[1].*

Technical Guidance:

- Mixing and application of appropriate additives should be carried out by trained operators;
- Regular checks of the additive levels should be carried out.
- Tails with black spots should be discarded.
- Non-approved additives should not be allowed in the processing facility.
- sulphites should be used in accordance with manufacturer's instructions and Good Manufacturing Practice.

13.3.1.6 De-veining/Trimming/Washing (Processing Step 6)

Refer to Section 8.1.5 – Washing and Gutting

Potential Hazards: *Microbiological contamination*

Potential Defects: *Incomplete de-veining, decomposition, dark membrane attached to the shell, physical contamination*

Technical Guidance:

- the intestine should be removed immediately and consideration should be given to use methods such as ejection by water pressure, vacuum, or physical removal by appropriate utensils (such as scissors, knives or extractors);
- skills should be acquired by lobster handlers with particular attention being given to the removal of membrane and blood from the front end of the tail where the meat is exposed;
- an adequate supply of clean water orpotable water should be available for the washing of de-veined and trimmed lobster tails to ensure that no remnants of the gut or its contents remain;
- the de-veined or trimmed lobster tails should be washed and well iced or appropriately chilled in clean containers and stored in specially designated and appropriate areas within the processing facility;
- the de-veining process should be carried out quickly to prevent product spoilage. Tails waiting for de-veining should be kept on ice or refrigerated at 4ºC or less.

[1] List of additive names for "sulphites"and "phosphates"can be found in the Codex Standard for Quick Frozen Lobsters (Codex Stan. 95-1981)

13.3.1.7 Grading/Weighing /Wrapping (Processing Step 7)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Incorrect net weight, inadequate wrapping, inappropriate packaging material, incorrect grading*

Technical Guidance:

- lobster tails should be graded into species, sizes and weights for the relevant market, to assure the economic integrity of the final product;
- calibrated balances should be provided for accurate grading;
- balances should be calibrated periodically with a standardized weight to ensure accuracy;
- packaging material should be clean, sound, durable, sufficient for its intended use and of food grade material;
- the wrapping and packaging operation should be conducted in a sanitary manner to avoid contamination of the product;
- care should be taken to ensure that the front end of tail where the meat is exposed is completely wrapped to protect against dehydration;
- weights of finished packages should be monitored at regular intervals to assure that they are the proper net weight.

13.3.1.8 Chilling (Processing Step 8)

Refer to sections 4.1 – Time and Temperature Control.

Potential Hazards: *Microbiological contamination*

Potential Defects: *Decomposition*

Technical Guidance:

- for lobster tails, chilling in refrigerated sea water is not recommended because excessive salt penetration into the muscle will take place rapidly. However, refrigerated clean water systems can be used for rapid pre-cooling before freezing or storage in ice;
- chilling should take place as rapidly as possible to prevent microbiological growth and deterioration.

13.3.1.9 Freezing (Processing Step 9)

Refer to section 8.3.1 – Freezing Process

Potential Hazards: *Unlikely*

Potential Defects: *Poor texture*

Technical Guidance:

- air blast, liquid nitrogen, or other freezing methods should be rapid to produce high quality tails and to ensure that the textural qualities of the product are retained.

13.3.1.10 Glazing (Processing Step 10)

Refer to Section 8.3.2 – Glazing

Potential Hazards: *Microbiological contamination*

Potential Defects: *Incomplete glaze, foreign matter*

Technical Guidance:

- glaze water should be replaced regularly to ensure that a high bacterial load does not occur and to prevent build-up of foreign material;
- chilling of glaze water will result in a more uniform application of glaze that will better protect the product.

13.3.1.11 Final Packaging/Labelling (Processing Step 11)

Refer to Section 8.2.3 – Labelling.

Potential Hazards: *Absence of labelling of allergenic additives*

Potential Defects: *Subsequent dehydration, incorrect labelling*

Technical Guidance:

- packaging material should be clean, sound, durable, sufficient for its intended use and of food grade material;
- care should be taken to ensure that the front end of tail where the meat is exposed is completely wrapped to protect against dehydration;
- where sulphites were used in the process, care should be taken to ensure that this additive is properly declared on the label.

13.3.1.12 Frozen Storage (Processing Step 12)

Refer to Section 8.1.3 – Frozen Storage

Potential Hazards: *Unlikely*

Potential Defects: *Freezer burn, dehydration*

Technical Guidance:

- products should be properly packaged to protect against freezer burn and dehydration;
- glaze is recommended as a further measure to ensure against dehydration;

13.3.1.13 Packaging and Label Reception (Processing Step 13)

Refer to section 8.5.1 – Reception – Packaging, Labels & Ingredients

Potential Hazards: *Unlikely*

Potential Defects: *Contaminated packaging, incorrect labels*

Technical Guidance:

- packaging materials should be examined for signs of contamination;
- labels should be examined for accuracy and to adherence to applicable regulations.

13.3.1.14 Additives Reception (Processing Step 15)

Refer to section 8.5.1 – Reception – Packaging, Labels & Ingredients

Potential Hazards: *Biological, chemical and physical contamination*

Potential Defects: *Contamination, mislabelling*

Technical Guidance:

- Additive shipments should be examined to ensure that they are not contaminated and that the container integrity is sufficient;
- Additive shipments should be examined to ensure that they are the correct chemical and meet purchase specifications.

13.3.1.15 Additives, Packaging and Label Storage (Processing Steps 14 and 16)

Refer to Section 8.5.2 – Storage – Packaging, Labels & Ingredients

Potential Hazards: *Unlikely*

Potential Defects: *Contaminated additives or packaging material*

Technical Guidance:

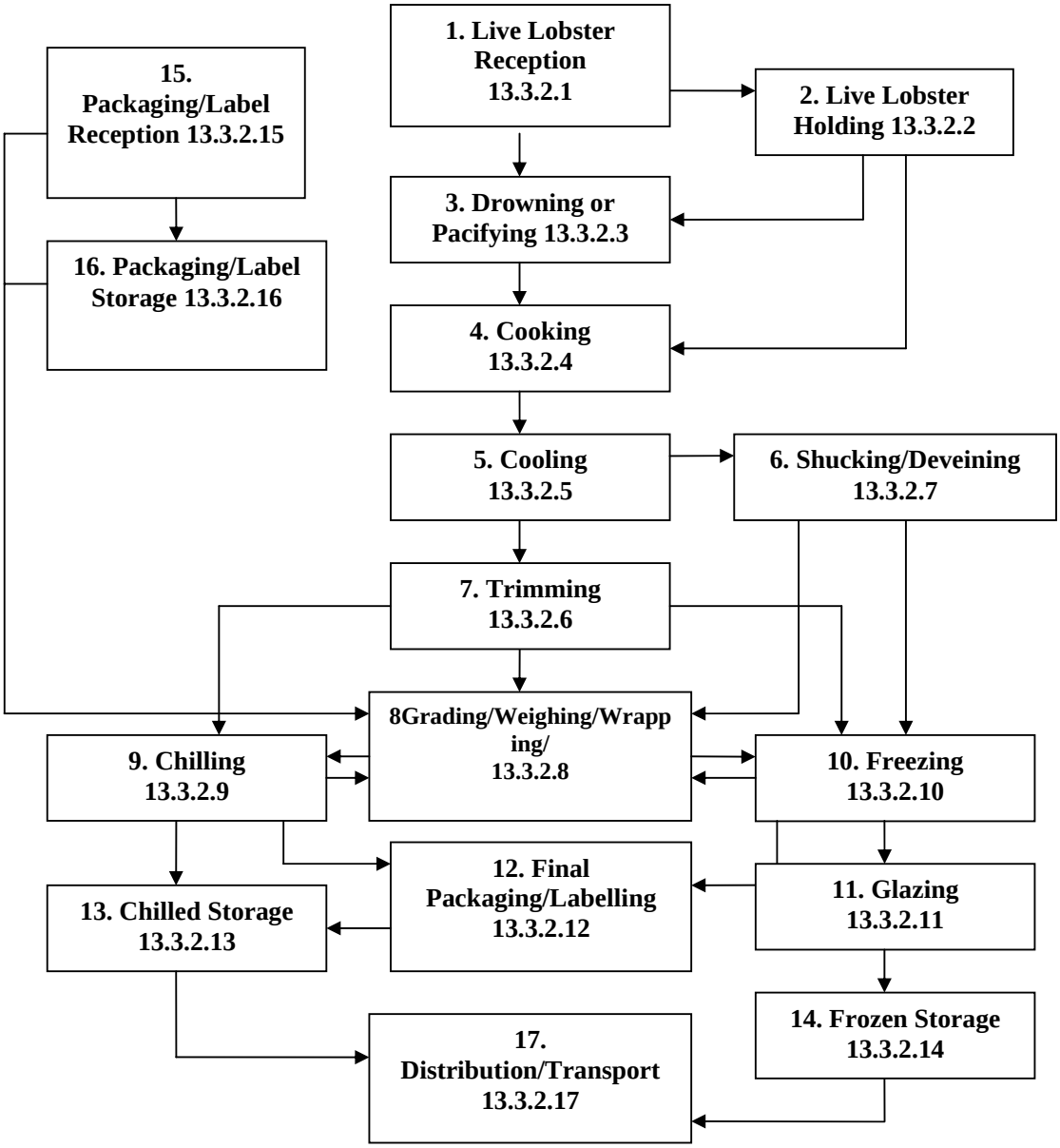
- food additives and packaging material should be protected from dust, dirt and other sources of contaminants;
- pests and insects should be excluded from the packaging storage area.

13.3.1.16 Distribution and Transport (Process Step 17)

Refer to Section 17 – Transport

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

Figure 13.2 Example of Flow Chart for Processing of Cooked Lobsters



13.3.2 Chilled and Frozen Cooked Whole Lobster and Cooked Lobster Meat

This section is designed with additional operation steps pertaining specifically to Cooked Whole Lobster and Cooked Lobster Meat.

13.3.2.1 Live Lobster Reception (Processing Step 1)

Refer to Subsection 13.3.1.1 of this document.

13.3.2.2 Live Lobster Holding (Processing Step 2)

Refer to subsection 13.3.1.4 of this document

13.3.2.3 Drowning or Pacifying (Processing Step 3)

Potential Hazards: *Unlikely*

Potential Defects: *Unlikely*

Technical Guidance:

- some species (not *Homarus*) are prepared for cooking by drowning suffocation in clean water with a low oxygen content or by immersing in chilled clean water;
- another possible process is an electric shock (pulse) in potable water, clean water or brine.

13.3.2.4Cooking (Processing Step 4)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Over / undercooking*

Technical Guidance:

- a cooking schedule for boiling or steaming should be designed which takes into consideration the appropriate parameters which can affect the cook such as time/temperature and size of the lobster;
- cooking should be carried out by appropriately trained personnel who have acquired the necessary skills to monitor and ensure that all lobsters are given the same time/temperature exposure and adequate heat penetration during the operation ;
- each cooker should be equipped with a suitable thermometer to show the cooking operation temperature. Fitting of a recording thermometer is strongly recommended. A simple device to indicate time of cooking should be supplied;
- lobsters should be cooked according to size until the shell is uniformly orange-red in colour, and depending on the product, until the meat can be easily removed from the shell. Overcooking causes the meat to shrink excessively, lower yields and undercooking makes it difficult to remove the meat from the shell.

13.3.2.5Cooling (Processing Step 5)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Unlikely*

Technical Guidance:

- cooling times should be kept as short as possible and every effort should be made to avoid contamination of the product during this period;
- cooling should be done in a proper manner, immediately after cooking, to end it uniformly throughout the batch and to avoid holding at temperatures which would encourage the growth of bacteria;
- cooling should be done in cold circulated air, running potable water or clean sea water;

- where lobsters are cooked on a continuous basis, cooling is also best done on a continuous basis;
- the same water should not be used for cooling more than one batch;
- shell removal should not be performed until the product has adequately cooled;
- care should be taken to ensure that cross contamination of cooked lobsters does not occur;
- cooked lobsters should be handled as a ready-to-eat product that has its normal microflora destroyed which can allow pathogens to proliferate.

13.3.2.6 Trimming (Processing Step 7)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Unlikely*

Technical Guidance:

- an adequate supply of clean sea water, potable water or water as outlined in section 13.1.2 should be available to remove adhering coagulate protein. Spray washing on a conveyor is sometimes sufficient but it may be necessary to brush by hand. These methods can be combined;
- all surfaces and brushes should be frequently cleaned during operation in order to minimise the microbial activity of contact surface and utensils.

13.3.2.7 Shucking, De-veining and Washing (Processing Step 6)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Presence of shell fragments*

Technical Guidance:

- the shucking and de-veining of cooked lobsters should be done quickly and carefully, in order to provide an attractive product;
- care should be taken to prevent cross-contamination of cooked product with raw lobster or any questionable material;
- depending on the vessel or processing facility product flow pattern and where a prescribed critical limit for staging time and temperature regime has been established for the control of hazards, the shucked or de-veined cooked lobster should be washed and appropriately chilled in clean containers and stored in specially designated and appropriate areas within the processing facility;
- lobster meat should be thoroughly washed on all surfaces in cold potable water, clean sea water or water as outlined in section 13.1.2.

13.3.2.8 Grading/Weighing/Wrapping (Processing Step 8)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Incorrect grading, inadequate wrapping, inappropriate packaging material, incorrect net weight*

Technical Guidance:

- lobster should be graded into species, sizes and weights for the relevant market, to assure the economic integrity of the final product;
- lobster meats should be uniform in size;
- calibrated balances should be provided for accurate grading;
- balances should be calibrated periodically with a standardized weight to ensure accuracy;

- wrapping material should be clean, sound, durable, sufficient for its intended use and of food grade material.

13.3.2.9 Chilling (Processing Step 9)

Refer to sections 4.2 – Time and Temperature Control.

Potential Hazards: *Microbiological contamination*

Potential Defects: *Deterioration*

Technical Guidance:

- chilling lobsters in refrigerated sea water is not recommended because excessive salt penetration into the muscle will take place rapidly. However, refrigerated clean water systems can be used for rapid pre-cooling before freezing or storage in ice;
- chilling should take place as rapidly as possible to prevent microbiological growth and deterioration.

13.3.2.10 Freezing (Processing Step 10)

Refer to section 8.3.1 – Freezing Process

Potential Hazards: *Unlikely*

Potential Defects: *Unlikely*

Technical Guidance:

- air blast, liquid nitrogen, or other freezing methods should be rapid to produce high quality whole lobsters and lobster meats to ensure that the textural qualities of the product are retained.

13.3.2.11 Glazing (Processing Step 11)

Refer to Section 13.3.1.10 of this document

13.3.2.12 Final Packaging/Labelling (Processing Step 12)

Refer to Section 8.2.3 – Labelling.

Potential Hazards: *Absence of labelling of allergenic additives*

Potential Defects: *Subsequent dehydration, incorrect labelling.*

Technical Guidance:

- packaging material should be clean, sound, durable, sufficient for its intended use and of food grade material;
- care should be taken to ensure that exposed lobster meats are completely wrapped to protect against dehydration.

13.3.2.13 Chilled Storage (Processing Step 13)

Refer to Section 8.1.2 – Chilled Storage

Potential Hazards: *Microbiological contamination*

Potential Defects: *Decomposition, foreign matter*

Technical Guidance:

- temperatures in chilled storage should be 4° C or less;
- product should be properly protected to avoid contamination by condensates and splashing water.

13.3.2.14 Frozen Storage (Processing Step 14)

Refer to Section 13.3.1.12 of this document.

13.3.2.15 Packaging/Label Reception (Processing Step 15)

Refer to Section 13.3.1.13 of this document.

13.3.2.16 Packaging/Label Storage (Processing Step 16)

Refer to Section 8.5.2 – Storage – Packaging, Labels & Ingredients

Potential Hazards: Unlikely

Potential Defects: Contaminated Packaging Material.

Technical Guidance:

- packaging material should be protected from dust, dirt and other sources of contaminants;
- Pests and insects should be excluded from the packaging storage area.

13.3.2.17 Distribution and Transport (Process Step 17)

Refer to Section 17 –Transport

SECTION XX[2] - PROCESSING OF CRABS

In the context of recognising controls at individual processing steps, this section provides examples of potential hazards and defects and describes technological guidelines, which can be used to develop control measures and corrective action. 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 recognised that in preparing a HACCP and/or 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 Code of Practice it is not possible to give details of critical limits, monitoring, record keeping and verification for each of the steps since these are specific to particular hazards and defects.

This section applies, generally, to commercial crabs of the *Cancer* species, king crab related species (*Lithodes* and *Paralithodes*), swimming crabs (Portunidae), *Geryon* species and snow crab species (e.g. *Chionoectes* and *Opilio*) as well as other species of marine and freshwater crabs which are similar in physical structure to the above mentioned.

XX.1 GENERAL – ADDITION TO PRE-REQUISITE PROGRAMME

In addition to the pre-requisite programme outlined in Section 3 of this document, the processing facility operators are encouraged to evaluate the design and construction of their facility and the maintenance and sanitation of their operation, specific to the processing of crabs. Consideration should be given to the following:

xx.1.1 Design and Construction of Equipment and Utensils

Refer to Section 13.1.1

xx.1.2 Hygiene Control Programme

Refer to Section 13.1.2

XX.2 GENERAL CONSIDERATIONS FOR THE HANDLING OF CRABS

Refer to Section 4 – General Considerations for the Handling of Fresh Fish and Shellfish.

xx.2.1. Potential Hazards and Defects Associated with Crabs

Refer also to Section 4.1 Potential Hazards Associated with Fresh Fish and Shellfish and Section 5.3.3.1 Identification of Hazards and Defects.

xx.2.1.1. Potential Hazards

Bacteria

Refer to Section 13.2.1.1

Chemical Hazards

Veterinary Drugs

Refer to Section 13.2.1.1

Parasites

The Food-borne trematode, *Parogonimus* in certain species of freshwater crabs eaten raw or uncooked.

Biotoxins

Biotoxins such as PSP, DSP, ASP, AZA, Tetrodotoxin and Palytoxin may be found in the viscera of certain species of crabs in certain geographical regions.

The hazards of toxins in crabs are associated with consumption of brown meat. When brown meat is

[2] Final numbering of the section to be determined

suspected of being associated with biotoxin contamination e.g. through phytoplankton monitoring or/and shellfish flesh testing, then testing of the brown meat may be carried out.

xx.2.1.2 Potential Defects

Blue discoloration. Blue discoloration is a defect in canned crab meat and also, rarely, developing in crab meat several hours after boiling and cooling of the crabs. The blue colour appears more often on the surface of the shoulder and other joint meats and in the claw meat. It appears in canned horse hair crab ("kegani") more often than in king crab. It is believed to be a result of copper containing hemocyanin in the blood (hemolymph) and may be avoided by eliminating the blood to the extent practicable in the cooking and canning process.

Another form of discoloration caused by fungus infection, particularly of snow crabs, is known as "black mat". While light infections may be physically removed, crabs with heavy infections should be culled as the shells cannot be completely cleaned and because there is tissue penetration of colourless hyphae that can affect the meat quality.

Other defects. Barnacles and other commensals including marine leeches are common defects in various crab species.

Struvites (magnesium ammonium phosphate) crystallizes from natural constituents in pasteurized crabmeat. Crystals are most likely established during the cooling step of pasteurization, and subsequently grow during storage. Pasteurized crabmeat may be treated with sodium acid pyrophosphate, which prevents struvite crystal formation by chelating magnesium. When an additive-free product is preferred, it is essential that post-heating cooling rates be rapid enough to minimize seed formation.

xx.2.2 Minimise the Deterioration of Crabs - Handling

Refer also to Section 4.2 – Minimise the Deterioration of Fish – Handling

- it is generally known that under similar conditions, the quality of crabs deteriorate more rapidly than fish and therefore care in maintaining the crabs live prior to processing is strongly recommended;
- since crab legs and other appendages can be easily broken and the damage can cause the risk of infection and weakening of the crab, care should be taken to handle live crabs at all times;
- tanks and wells for pounding live crab should be so placed and constructed as to ensure survival of the crab;
- time control is one of the most effective methods in controlling crab product processing. It is strongly recommended that all operations in crab product processing be achieved as rapidly as possible;
- good quality of crab butchered sections can be maintained by immediate cooking and chilling or freezing;
- live crabs should be carefully packed in clean tanks, wells, crates, open-weave bag, or in boxes covered with wet sacking and held at a temperature as close as possible to 0^{o}C.
- holding tanks are regarded as a better method of storage for long-term handling than well storage;
- the use of clean Hessian or jute bags, for transport, is preferred. Bags made of woven synthetic material should not be used;
- where bags open weave are used for transport, precautions should be taken to avoid suffocation of crabs due to slime or mud;
- care also should be taken to maintain the necessary humidity in holding the crabs live in bags for transport;

- species, which mutilate each other, should have the claws banded as soon as possible after catching;
- if it is not possible to keep crabs alive until the time of processing, crabs should be butchered. Sections should be carefully separated and cleaned before freezing or cooling down to the temperature as close as possible to 0^{o} C, which should be done as rapidly as possible.

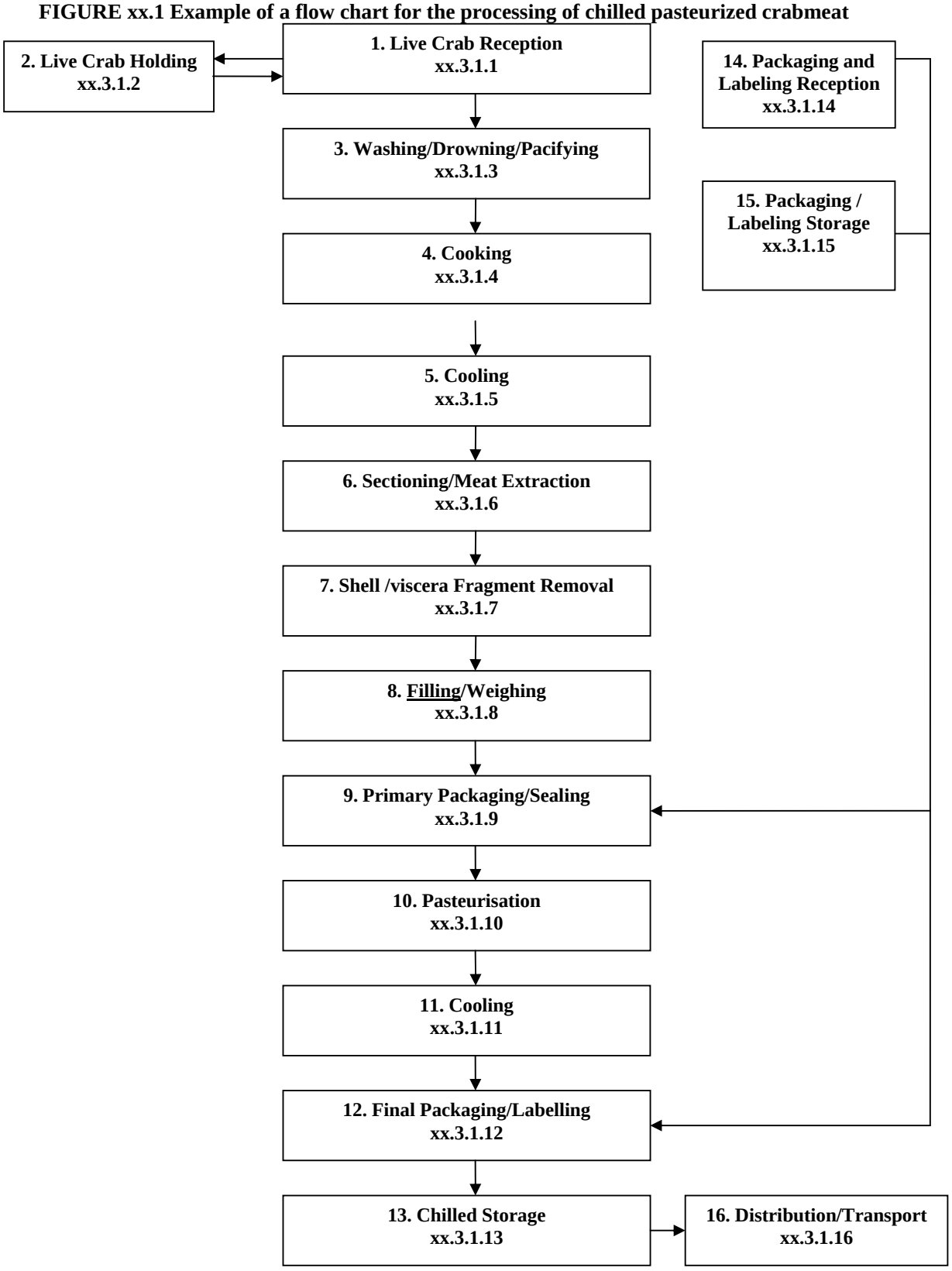
xx.2.3 Processing Operations –Crabs

Once a processing facility has established a pre-requisite programme (section 3) the principles of HACCP (Section 5) can be applied to each individual process within that facility.

This section provides two examples of products derived from crabs. Special consideration was given to elaborate on products which involve heat treatment because of their potential impact on food safety (such as post processing handling). The products and their respective flow diagrams are as follows: Chilled Pasteurized Crab Meat (Fig. xx.1) and Chilled and Frozen Cooked Crabs (Figure xx.2).

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

FIGURE xx.1 Example of a flow chart for the processing of chilled pasteurized crabmeat



XX.3.1 CHILLED PASTEURIZED CRAB MEAT

xx.3.1.1 Live Crab Reception (Processing Step 1)

Refer also to section 13.3.1.1 of this document.

Potential Hazards: *Biotoxins (for certain species)*

Potential Defects: *Weak or injured crab, crab mortality, ecto-parasites, black shell.*

Technical Guidance:

- live crabs should be inspected upon receipt to ensure that they are alive, which can be demonstrated by active leg movement.
- Training in species identification and communication in product specification should be provided to crab handlers and appropriate personnel to ensure a safe source of incoming crabs
- Where marine biotoxins are likely to be present at unsafe levels in crabs species in an area, susceptible species should be identified and kept segregated from other crabs. Risk reduction strategies (e.g. testing or evisceration) should be undertaken prior to processing. Live crabs should be sorted to remove those with defects such as ecto-parasites and black shell;
- in factories which process crabs, any dead crabs should be discarded. Where sections are processed, any defective or deteriorated parts should be removed from the lot and disposed off in a proper manner;
- weak crabs should be processed immediately.

xx.3.1.2 Live Crab Holding (Processing Step 2)

Refer also to Section 6.1.2– Growing Water Quality and Section 13.3.1.2 – Live Lobster Holding

Potential Hazards: *Unlikely*

Potential Defects: *Crab Mortality*

Technical Guidance:

- live crabs should be stored in circulated sea water and fresh water, as appropriate at temperatures of their natural environment or slightly lower, depending on the species. Some species (e.g. *Ucides cordatus cordatus*) can be stored, during short periods, without water and with or without refrigeration;
- dead crabs should not be processed and should be rejected and disposed in a proper manner.

xx.3.1.3 Washing and Drowning or Pacifying (Processing Step 3)

Potential Hazards: *Unlikely*

Potential Defects: *Loss of Legs and claws, deterioration*

Technical Guidance:

- crabs should be washed in plenty of running potable water, or clean sea water, or as defined in Section 13.1.2 to remove all impurities. For some species, scrubbing by brush may be necessary. These methods can be combined;
- crabs should be pacified or killed just prior to cooking to prevent legs and claws loss. This may be accomplished by the following methods:
    - cooling the crabs to 0ºC or lower, depending of the species;

- immersion of the crabs in potable water or clean sea water which is approximately 10-15ºC warmer than the natural environment of the species;
- piercing of the two nerve centres by means of a stainless steel skewer or rod. A rod is inserted through one of the eyes and through the vent;
- stunning the crabs by passing a weak electric current through seawater or freshwater in which the crabs are immersed;
- since spoilage in dead crabs takes place very rapidly and any delay prior to cooking may reduce the meat quality, crabs that are rendered insensible or killed should be cooked immediately.

xx.3.1.4 Cooking (Processing Step 4)

Potential Hazards: *Parasites, Microbiological contamination*

Potential Defects: *Poor texture due to overcooking, bluing discoloration due to undercooking.*

Technical Guidance:

- where the final product is to be marketed as cooked crabs in the shell or the shucked meat should be chilled to a temperature approaching 4° C. or less and either passed into the distribution chain or processed within 18 hours;
- in most cases the cooking of crabs in boiling water is preferred to steaming. Steaming has a tendency to dry the meat, resulting in the flesh adhering to the shell. Cooking utilizing continuous conveyors is recommended;
- Cooking should be carried out by appropriately trained personnel who has acquired the necessary skills to monitor and ensure that all crabs are given the same time/temperature exposure during the operation;
- adequate uniform cooking is essential because too much cooking causes excessive meat shrinkage, moisture loss, lower yields and poor texture. Too little cooking makes it difficult to remove the meat from the shell, and may cause blue discoloration;
- it is difficult to specify cooking times and temperatures generally due to differences in size, structure and physiology of the different species of crabs;
- Staff involved in the operations with cooked and uncooked crabs should take steps to minimise cross-contamination;
- cook time and temperatures should be sufficient to kill trematode parasites.

xx.3.1.5 Cooling (Processing Step 5)

Potential Hazards: *Microbiological contamination*

Potential Defects: *unlikely*

Technical Guidance:

- cooling should be done in cold circulated air, running potable water, refrigerated brine, or clean sea water;
- cooling should be completed as quickly as possible;
- the process of cooling should be done in a place without direct contact with the raw product. Care should be taken to ensure that cross contamination of cooked crabs does not occur, e.g.
  - crab cooling baskets should not be placed on the floor
  - cooling crabs should be covered or otherwise protected from condensations

- product contact surfaces should be washed and/or sanitized at regular intervals to avoid bacterial build up and contamination

- cooked crabs should be handled as a ready-to-eat product that has had it normal microflora destroyed, which can allow pathogens to proliferate;
- the same water should not be used for cooling more than one batch;
- in some species, the body cavity contains a considerable amount of water, so that adequate drainage, in an area set aside for the purpose, is desirable.

xx.3.1.6 Sectioning/Meat Extraction (Processing Step 6)

Potential Hazards: *Microbiological contamination, biotoxins*

Potential Defects: *Presence of gills and viscera or foreign material*

Technical Guidance:

- after butchering, any remaining viscera and gills should be removed. Proper cleaning at this stage particular for species at risk of biotoxins, is strongly recommended since it eliminates the risk of foreign material being included in the finished product;
- staff involved in operations with cooked and uncooked crabs, should take steps to minimize cross-contamination;
- picking or shaking operations should be carefully controlled to prevent contamination from bacteria and/or foreign materials;
- all types of meat should be picked, packaged and either chilled (internal temperature of 4.5ºC/or less) or frozen within two hours;
- depending on the vessel or processing facility product flow pattern and where a prescribed critical limit for staging time and temperature regime has been established for the control of hazards, the crab meat should be appropriately chilled in clean containers and stored in specially designated and appropriate areas within the processing facility;
- claws, leg tips and shell parts containing recoverable meat should be continuously separated, rapidly and efficiently, from waste material during the picking operation and should be kept chilled and protected from contamination;
- shell removal or sectioning should not be performed until the product has adequately cooled;
- recovery and chilling of extracted meat should be carried out continuously.

xx.3.1.7 Shell Fragments and Viscera Fragments Removal (Processing Step 7)

Potential Hazards: *Microbial contamination, foreign material and shell fragments (in some circumstances)*

Potential Defects: *Presence of viscera fragments, foreign material and shell fragments*

Technical Guidance:

- particular care should be taken to ensure that shell fragments, viscera fragments, and foreign material are removed from crab meat since they are very objectionable to consumers and in some circumstances they may be dangerous;
- to minimize time delays, the design of the meat extraction and shell fragment removal line should be continuous to permit a uniform flow without stoppages or slow-downs and removal of waste;

- depending on the vessel or processing facility product flow pattern and where a prescribed critical limit for staging time and temperature regime has been established for the control of hazards, the crab meat should be appropriately chilled in clean containers and stored in specially designated and appropriate areas within the processing facility;
- the use of an ultraviolet light could improve the detection of shell fragments in crab meat. If the ultraviolet light is used it should be in compliance with the requirements of the official authorities having jurisdiction.

xx.3.1.8 Filling and weighing (Processing Step 8)

Potential Hazards: *Overfilling of cans which can lead to survival of Clostridium botulinum spores*

Potential Defects: *Underweight cans*

Technical Guidance:

- net weight of the crab contents should not exceed the critical parameters specified in the scheduled process as incomplete heat penetration due to overweight cans could affect heat penetration;
- care should be taken to ensure that minimum net weights on the label declaration are met.

xx.3.1.9 Primary-Packaging/Sealing (Processing Step 9)

Refer to Section 8.2.3 "Labelling"

Refer to Section 16.4.2– Packing in Containers (Filling, Sealing and Coding)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Incorrect labelling*

Technical Guidance:

- packaging material should be clean, sound, durable, sufficient for its intended use and of food grade material;
- the operation, maintenance, regular inspection and adjustment of sealing machines should receive particular care;
- the sealing operation should be conducted by qualified personnel specially trained;
- packaging integrity of the finished product should be inspected at regular intervals by appropriately trained personnel to verify the effectiveness of the seal and the proper operation of the packaging machine.

xx.3.1.10 Pasteurisation (Processing Step 10)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Deterioration*

Technical Guidance:

- pasteurising of product should be carried out by appropriately trained personnel who have acquired the necessary skills to monitor and ensure that all packages are given the same time/temperature exposure during the operation;
- pasteurisation should be carried out in hermetically sealed containers;
- to prevent any possible deterioration of the product the crab meat should be pasteurised immediately after picking and packaging. It is preferable that the meat be at a temperature of approximately 18ºC when the containers are hermetically sealed to provide a slight vacuum after chilled storage temperatures;

- a time and temperature regime for the pasteurisation of different crab products should be established and should take into consideration the pasteurisation equipment and capacity, the physical properties of the crab and packaging container including their thermal conductivity, thickness, shape and temperature, to ensure that adequate heat penetration has been achieved for all containers in the lot;
- each container of crab meat should be exposed to a scheduled time and temperature that will inactivate microorganisms of public health concern that could grow during refrigerated storage, including non-proteolytic *Clostridium botulinum*;
- the water bath should be preheated to a temperature sufficient to ensure that scheduled time/temperature parameters are carried out Special concern should be given to proper water circulation within the bath and around each individual container being pasteurised. Hot water bath temperature should remain constant until processing is completed;
- once proper times and temperatures are established, they should be adhered to closely and pasteurisation processes should be standardized by accurate thermocouple measuring equipment. It is recommended that new equipment be standardized after installation and re-standardize on an annual basis or when difficulties are experienced;
- calibration and appropriate maintenance of temperature recording equipment should be performed on a regular basis to ensure accuracy.

xx.3.1.11 Cooling (Processing Step 11)

Potential Hazards: *Microbiological contamination.*

Potential Defects: *Unlikely*

Technical Guidance:

- the pasteurized container of meat should be immediately cooled after processing.
- cooling is best accomplished in an ice water bath. The size of the cooling water bath should be sufficient to allow addition of ice to cool the product to an internal temperature of 4 ºC or less as quickly as possible after pasteurisation in order to prevent the growth of *Clostridium botulinum* spores. No water agitation is required since adequate convection currents are created by differences between bath and product temperatures;
- the water used at the cooling operation should not recontaminate the product.

xx.3.1.12 Final Packaging/Labelling (Processing Step 12)

Refer to Section 8.2.3 “Labelling”

xx.3.1.13 Chilled Storage (Processing Step 13)

Potential Hazards: *Formation of Clostridium botulinum toxin.*

Potential Defects: *Unlikely*

Technical Guidance:

- the pasteurized crab meat should be moved to the chilled storage facility without undue delay;
- the pasteurized product is perishable and unless it is kept chilled at a minimum temperature of 3ºC, there is a possibility that *Clostridium botulinum* may grow and produce toxins;
- the chillroom should be equipped with a calibrated indicating thermometer. Fitting of a recording thermometer is strongly recommended;
- crates used to hold container in chilled storage should allow free passage of air currents in order to complete the cooling cycle;

- the processing facility should implement a traffic control system that will ensure that the unpasteurised product cannot be mixed with any pasteurized product.

xx.3.1.14 Packaging and Labelling Reception (Processing Step 14)

Refer to Section 8.5.1 Reception – Packaging, Labels & Ingredients

xx.3.1.15 Packaging/Labelling Storage (Processing Step 15)

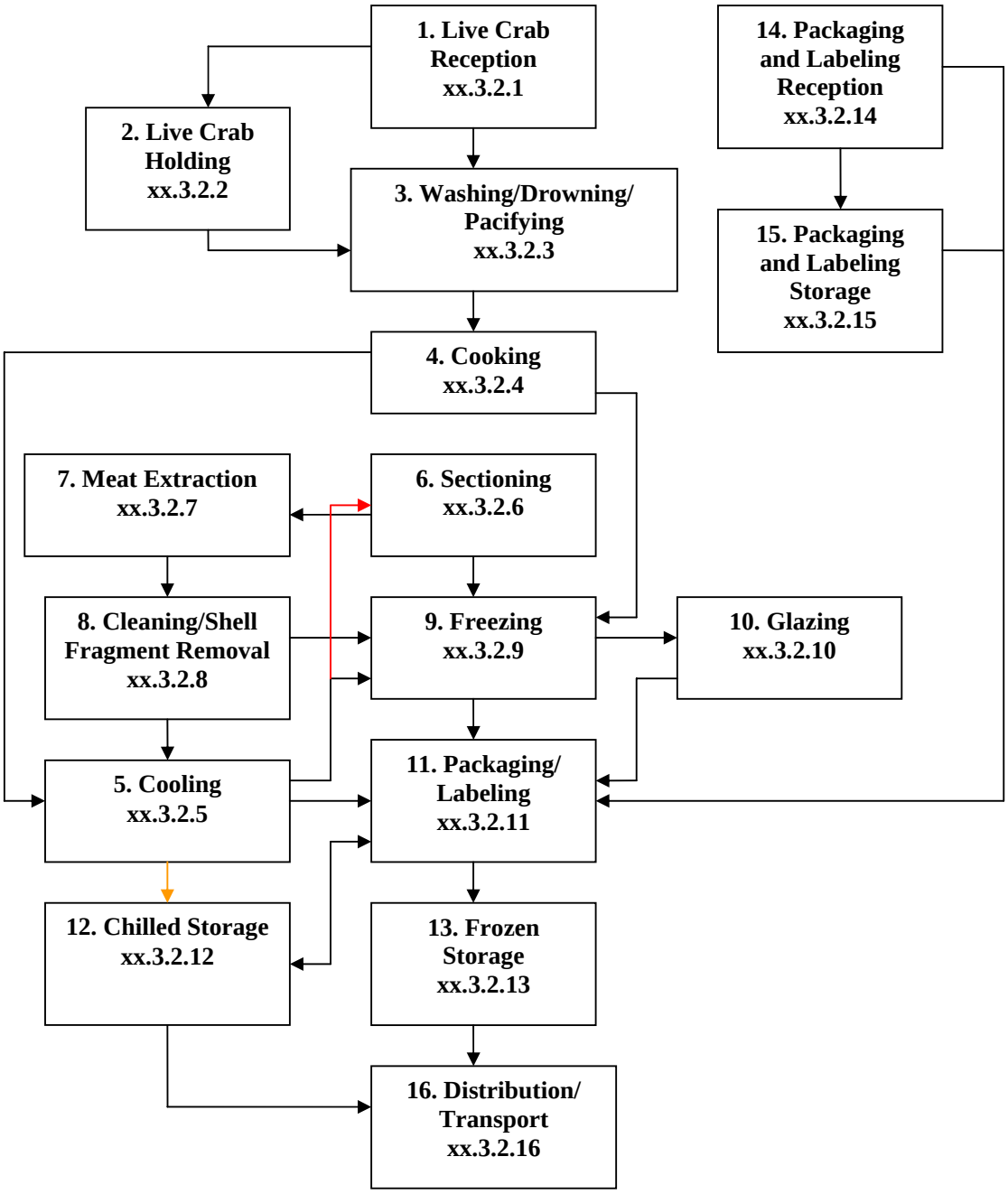
Refer to Section 8.5.2 Storage – Packaging, Labels & Ingredients

xx.3.1.16 Distribution/Transport (Processing Step 16)

Refer to Section 17 – Transport

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

Figure xx.2 Example of flow chart for Chilled and Frozen Cooked Crab



xx.3.2 Chilled and Frozen Cooked Crab

xx.3.2.1 Live Crab Reception (Processing Step 1)

Refer to section xx.3.1.1 of this document.

xx.3.2.2 Live Crab Holding (Processing Step 2)

Refer also to Section xx.3.1.2 of this document.

xx.3.2.3 Washing and Drowning or Pacifying (Processing Step 3)

Refer to Section xx.3.1.3 of this document.

xx.3.2.4 Cooking (Processing Step 4)

Potential Hazards: *Microbiological contamination, parasites.*

Potential Defects: *Over / undercooking*

Technical Guidance:

- a cooking schedule for boiling or steaming should be designed which takes into consideration the appropriate parameters which can affect the cook such as time/temperature and size of the crabs;
- cooking should be carried out by appropriately trained personnel who have acquired the necessary skills to monitor and ensure that all crabs are given the same time/temperature exposure and adequate heat penetration during the operation;
- each cooker should be equipped with a suitable thermometer to show the cooking operation temperature. Fitting of a recording thermometer is strongly recommended. A simple device to indicate time of cooking should be supplied.
- crabs should be cooked according to size, and depending on the product, until the meat can be easily removed from the shell. Overcooking causes the meat to shrink excessively, lower yields and undercooking makes it difficult to remove the meat from the shell;
- Staff involved in the operations with cooked and uncooked crabs should take steps to minimise cross-contamination;
- cook time and temperatures should be sufficient to kill trematode parasites.

xx.3.2.5 Cooling (Processing Step 5)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Unlikely*

Technical Guidance:

- cooling should be done in cold circulated air, running potable water, refrigerated brine, or clean sea water;
- cooling should be completed as quickly as possible;
- the process of cooling should be done in a place without direct contact with the raw product;
- care should be taken to ensure that cross contamination of cooked crabs does not occur, e.g.:
    - crab cooling basket should not be placed on the floor;
    - cooling crabs should not be covered or otherwise protected from condensations;
    - product contact surfaces should be washed and/or sanitized at regular intervals to avoid bacterial build up and contamination;
- cooked crabs should be handled as a ready-to-eat product that has had it normal microflora destroyed, which can allow pathogens to proliferate;

- the same water should not be used for cooling more than one batch;
- in some species, the body cavity contains a considerable amount of water, so that adequate drainage, in an area set aside for the purpose, is desirable.

xx.3.2.6 Sectioning (Processing Step 6)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Presence of gills and viscera, foreign materials*

Technical Guidance:

- after butchering, any remaining viscera and gills should be removed. Proper cleaning at this stage is strongly recommended since it eliminates the risk of foreign material being included in the finished product;
- staff involved in the operations with cooked and uncooked crabs should take steps to minimise cross-contamination;
- shell removal or sectioning should not be performed until the product has adequately cooled.

xx.3.2.7 Meat Extraction (Processing Step 7)

Potential Hazards: *Microbiological contamination*

Potential Defects: *Presence of gills, viscera or foreign material*

Technical Guidance:

- staff involved in operations with cooked and uncooked crabs, should take steps to minimize cross-contamination;
- picking or shaking operations should be carefully controlled to prevent contamination from bacteria and/or foreign materials;
- it is recommended that all types of meat are picked, packaged and either chilled (internal temperature of 4.5ºCor less) or frozen within two hours;
- depending on the vessel or processing facility product flow pattern and where a prescribed critical limit for staging time and temperature regime has been established for the control of hazards, the crab meat should be appropriately chilled in clean containers and stored in specially designated and appropriate areas within the processing facility;
- claws, leg tips and shell parts containing recoverable meat should be continuously separated, rapidly and efficiently, from waste material during the picking operation and should be kept chilled and protected from contamination.

xx.3.2.8 Shell Fragments Removing/Cleaning (Processing Step 8)

Refer to Section xx.3.1.7 of this document.

xx.3.2.9 Freezing (Processing Step 9)

Refer to section 8.3.1 – Freezing Process

Potential Hazards: *Unlikely*

Potential Defects: *Poor texture*

Technical Guidance:

- appropriate freezing equipment should be used to quickly freeze the product and minimize the crystallization of moisture in the flesh (e.g. cryogenic, blast or brine freezing systems);

- brine media in brine freezing systems should be replaced regularly to prevent the build up of contaminants, excess salt and foreign matter;
- Do not overload brine tank with excess product.

xx.3.2.10 Glazing (Processing Step 10)

Refer to section 8.3.2 – Glazing

xx.3.2.11 Packaging/Labelling (Processing Step 11)

Refer to Section xx.3.1.12 of this document

xx.3.2.12 Chilled Storage (Processing Step 12)

Refer to Section 8.1.2 – Chilled Storage.

xx.3.2.13 Frozen Storage (Processing Step 13)

Refer to Section 8.1.3 – Frozen Storage.

xx.3.2.14 Packaging/Labelling Reception (Processing Step 14)

Refer to Section xx.3.1.14 of this document.

xx.3.2.15 Packaging/Labelling Storage (Processing Step 15)

Refer to Section xx.3.1.15 of this document.

xx.3.2.16 Distribution/Transport (Processing Step 16)

Refer to Section 17 – Transport

APPENDIX III

General Definitions

(for inclusion in Section 2.1 of the Code of Practice for Fish and Fishery Products)

2.1 General Definitions

Clean Water means water from any source where harmful microbiological contamination, substances and/or toxic plankton are not present in such quantities that may affect the safety of fish, shellfish and their products intended for human consumption.

Microbiological contamination means the presence, introduction, reintroduction, growth and/or survival of pathogens of public health concern.

APPENDIX IV

Proposed Draft Amendment to the Section 3.4 of the Code of Practice for Fish and Fishery Products

(At Step 3 of the Procedure)

3.4.5.1 Water

[When an establishment has its own supply of fresh water or seawater or other water sources, and chlorine is used for water treatment, the residual content of chlorine should not exceed that of potable water]

APPENDIX V

DRAFT STANDARD FOR STURGEON CAVIAR

(At Step 8 of the Procedure)

1. SCOPE

This standard applies to granular sturgeon caviar of the fish of the *Acipenseridae* family.

2. DESCRIPTION

2.1. Definitions

The following definitions are used in this standard:

Fish eggs: 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 *Acipenseridae family*by treating with food grade salt.

2.2 Product Definition

The product is prepared from fish eggs of sturgeon fishes belonging to the *Acipenseridae* family (four genera *Acipenser, Huso, Pseudoscaphirhynchus* and *Scaphirhynchus* and hybrid species of these genera). The eggs are of about one size and evenly and characteristically coloured according to the species used. Colour can vary from light grey to black or from light yellow to yellowish grey. Brownish and greenish shades are permissible. The product is made with addition of salt and is intended for direct human consumption. The salt content of the product is equal or above 3g/100g and below or equal to 5g/100g in the end product.

2.3 Process Definition

2.3.1 The product, after suitable preliminary preparation of the caviar, shall be subject to treatment or conditions sufficient to prevent the growth of spore and non-spore forming pathogenic microorganisms and shall comply with the conditions laid down hereafter. Ovulated eggs are harvested after hormonal induction of ovulation of the female. The eggs are appropriately treated to remove adhesive layer and to harden the shell. If hormones are used to produce ovulated eggs, they should be approved for use by the competent authority having jurisdiction.

The product shall be prepared by salting fish eggs with food grade salt. During packaging, storage and retail, the product temperature is between +2 and +4°C, whereas for wholesale business, including storage and transportation, the temperatures are between 0° and –4°C. Freezing as well as frozen storage of caviar is not permitted unless the deterioration of quality is avoided.

The product shall be packed in:

- metal tins coated inside with stable food lacquer or enamel;

- glass jars;

- other suitable food-grade containers.

2.3.2 Re-packaging of the product from larger to smaller containers under controlled conditions which maintain the quality and safety of the product shall be permitted. No mixing of caviar from different sturgeon species or lots shall be permitted.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Raw Material

Caviar shall be prepared from fish eggs extracted from sound and wholesome sturgeons of biological species of the genera described in Section 2.2, which are of a quality fit to be sold fresh for human consumption.

3.2 Salt

Salt shall be of food grade quality and conform to all applicable Codex Standards.

3.3 Final Product

The product shall meet the requirements of the present Standard, when a lot examined in accordance with the requirements described in Section 10 complies with the provisions set out in Section 9.

The product shall be examined by the methods given in Section 8.

4. FOOD ADDITIVES

4.1 The use of colours and texturizing agents is not allowed.

4.2 Only those acidity regulators, antioxidants and preservatives listed in Table 3 of the Codex General Standard for Food Additives (CODEX STAN 192-1995), are permitted for use, under conditions of good manufacturing practices, in the products covered by this standard.

5. CONTAMINANTS

5.1 The products covered by this Standard shall comply with the Maximum Levels of the Codex General Standard for Contaminants and Toxins in Foods and Feed (CODEX STAN 193-1995) and the maximum residue limits for pesticides and veterinary drugs established by the CAC. In addition, the following specific provisions apply:

5.2 For caviar obtained from ovulated eggs, the treatment of the fish (e.g. with hormones) and the subsequent level of residues in the final product shall be in conformity with the relevant provisions in sub-section 6.3.2 Veterinary Drugs of the Code Of Practice for Fish and Fishery Products – (CAC/RCP 52-2003 section 6 – Aquaculture) in particular regarding the compliance with the MRL and the withdrawal time.

6. HYGIENE

6.1. It is recommended that the product covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969) and other relevant Codex Codes of Practice

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

6.3 The product shall not contain any other substance in amounts which may present a hazard to health in accordance with standards established by the Codex Alimentarius Commission.

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

7. LABELLING

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

7.1 The Name of the Food

7.1.1 For the *Acipenseridae* family, the name of the food shall be “caviar” or “caviar” completed with the usual name (Beluga for *Huso huso*, Ossetra for *Acipenser guldenstaedtii* and *Acipenser persicus*, Sevruga for *Acipenser stellatus*), in accordance with the law and custom of the country in which the product is sold, in a manner not to mislead the consumer.

7.1.2 For sturgeons having no common names, the name may be supplemented with the identification code or the scientific name of the species in accordance with Annex A.

7.1.3 For hybrids the common name shall be supplemented with the word hybrid, and the parent sturgeon species may be shown according to Annex A.

7.1.4 For caviar obtained from ovulated eggs, the product name shall be “caviar from ovulated eggs”. The labelling shall be written in such a way as to avoid any risk of misleading consumers on the nature of the product.

7.2 Storage Instruction

The labelling shall include terms to indicate that the product shall be stored under appropriate time/temperature conditions.

7.3 Repackaging

In case of repackaging of the product the facility registration code shall be identified.

7.4 Labelling of non-retail containers

Each primary container shall be labelled with the number markings of the lot and the species.

Information specified above shall be given either on the container or in accompanying documents, except that the name of the food, lot identification, and the name and address as well as storage instructions shall always appear on the container. However lot identification, and the name and address may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

8. SAMPLING, EXAMINATION AND ANALYSES

8.1 Sampling

8.1.1 Sampling of lots for examination of the product shall be in accordance with the General Guidelines on Sampling (CAC/GL 50-2004). A sample unit is the primary container.

8.1.2 Sampling of lots for examination of net weight shall be carried out in accordance with an appropriate sampling plan meeting the criteria established by the Codex Alimentarius Commission.

8.1.3 Sampling of lots for pathogenic microorganisms and parasites shall be in accordance with the Principles for the Establishment and Application of Microbiological Criteria to Foods (CAC/GL 21-1997).

8.2 Sensory Examination

Samples taken for sensory and physical/chemical examination shall be assessed by person trained in such examination and in accordance with the Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories (CAC/GL 31-1999).

8.3. Determination of Net Weight

The net weight (excluding packaging material) of each sample unit in the sample lot shall be determined by deducting the weight of the empty container from the total weight.

8.4 Determination of Salt Content

The determination of salt content is performed according to the method described in the Codex Standard for Salted Fish and Dried Salted Fish of the *Gadidae* Family of Fishes (CODEX STAN 167-1989).

9. DEFINITION OF DEFECTS

The sample unit shall be considered as defective when it exhibits any of the properties defined in Sections 9.1- 9.4.

9.1 Foreign matter

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

9.2 Odour and Flavour

The product affected by persistent and distinct objectionable odour and/or flavour indicative of decomposition, oxidation, or taste of feed (in fish reared in aquaculture), or contamination by foreign substances (such as fuel oil).

9.3 Consistency and Condition

- The presence of hard cover of caviar grains that is not easily chewable or tenuous.
- The breaking up of the outer membranes when attempting to separate the grains.
- The Presence of broken eggs or fluid.

9.4 Objectionable matter

The presence of remnants of membranes and/or secreted fat in finished caviar.

10. LOT ACCEPTANCE

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

1. The total number of defectives as classified according to Section 9 does not exceed the acceptable number of the appropriate sampling plan given in the General Guidelines on Sampling (CAC/GL 50-2004).

2. The average net weight of all sample units is not less than the declared weight, provided no individual container is less than 95% of the declared weight.

3. The Food Additives, Contaminants, Hygiene and Labelling requirements of Sections 4, 5, 6, and 7 are met.

ANNEX A

Table .1 - IDENTIFICATION CODES OF STURGEON SPECIES

Denomination of sturgeon fishes - Scientific names	Code
Huso huso	HUS
Huso dauricus	DAU
Acipenser naccari	NAC
Acipenser transmontanus	TRA
Acipenser schrenkii	SCH
Acipenser sturio	STU
Acipenser baerii baikalensis	BAI
Acipenser sinensis	SIN
Acipenser dabryanus	DAB
Acipenser persicus	PER
Acipenser brevirostrum	BVI
Acipenser fulvescens	FUL
Acipenser oxyrhynchus	OXY
Acipenser oxyrhynchus desotoi	DES
Acipenser gueldenstaedtii	GUE
Acipenser medirostris	MED
Acipenser baerii	BAE
Acipenser micadoi	MIK
Acipenser stellatus	STE
Acipenser ruthenus	RUT
Acipenser nudiventris	NUD
Pseudoscaphirhynchus fedtschenkoi	FED
Pseudoscaphirhynchus hermanni	HER
Pseudoscaphirhynchus kaufmanni	KAU
Scaphirhynchus platorhynchus	PLA
Scaphirhynchus albus suttkusi	ALB
Scaphirhynchus suttkus	SUS
Hybrids: female species code x *male species code*	YYY x XXX

APPENDIX VI

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

(At Step 5 of the Procedure)

1. SCOPE

This standard applies to smoked, smoke-flavoured and smoke-dried fish prepared from fresh, chilled or frozen raw material. It deals with whole fish, fillets and sliced- and similar products thereof. The standard applies to fish, either for direct consumption, for further processing, or for addition into speciality or minced products where fish constitutes only part of the edible contents.

It does not apply to fish treated with carbon monoxide (filtered, "clear" or 'tasteless' smoke), fish packaged in hermetically sealed containers processed to commercial sterility. Speciality or minced products as such are not included. (e.g. fish-salads).

2. DESCRIPTION

Product and process definitions for smoked fish, smoke-flavoured fish and smoke-dried fish are considered separately under this section.

2.1 SMOKED FISH

2.1.1 Product definition

Smoked fish is prepared from fish that has undergone a hot or cold smoking process. The smoke must be applied through one of the smoking processes defined in 2.1.2 and the end product must have smoked sensory characteristics.

2.1.2 Process definitions

- "Smoking" is a process of treating fish by exposing it to smoke from smouldering wood or plant materials. This process is usually characterised by an integrated combination of salting, drying, heating and smoking steps in a smoking chamber.
- "Smoking by regenerated smoke" is a process of treating fish by exposing it to smoke which is regenerated by atomizing smoke condensate in a smoking chamber under the time and temperature conditions similar to those for hot or cold smoking. Smoke condensates are products obtained by controlled thermal degradation of wood in a limited supply of oxygen (pyrolysis), subsequent condensation of the resultant smoke vapours, and fractionation of the resulting liquid products.
- "Hot smoking" is a process in which fish is smoked at an appropriate combination of temperature and time sufficient to cause the complete coagulation of the proteins in the fish flesh. Hot smoking is generally sufficient to kill parasites, to destroy non-sporulated bacterial pathogens and to injure spores of human health concern.
- "Cold smoking" is a process of treating fish with smoke using a time/temperature combination that will not cause significant coagulation of the proteins in the fish flesh but that will cause some reduction of the water activity.
- "Salting" is a process of treating fish with salt of food grade quality to lower water activity in fish flesh and to enhance flavour by any appropriate salting technology (e.g. dry salting, brining, injection salting).
- "Drying" is a process in which the moisture content in the fish flesh is decreased by exposing the fish to circulating air.
- "Packaging" is a process in which smoked fish is put in a container, either aerobically or under reduced oxygen conditions, including under vacuum or in a modified atmosphere.

- "Storage" is a process in which smoked fish is kept refrigerated or frozen to assure product safety and quality in conformity with Sections 3 and 6.

2.2 SMOKE FLAVOURED FISH

2.2.1 Product definition

Smoke flavoured fish is prepared from fish that has been treated with smoke flavours, without undergoing a smoking process as described in 2.1. The end product must have a smoked taste.

2.2.2 Process definition

- Smoke flavours are either smoke condensates or artificial flavour blends prepared by mixing chemically-defined substances in known amounts or any combination of both (smoke-preparations).
- "Smoke flavouring" is a process in which fish or fish preparations are treated with smoke flavour. The smoke flavour can be applied by any technology (e.g. dipping, spraying, injecting, soaking).
- "Packaging" is a process in which smoke-flavoured fish is put in a container, either aerobically or under reduced oxygen conditions, including under vacuum or in a modified atmosphere.
- "Storage" is a process in which smoke-flavoured fish is kept refrigerated or frozen to assure product safety and quality in conformity with Sections 3 and 6.

2.3 SMOKE-DRIED FISH

2.3.1 Product definition

Smoke-dried fish is prepared from fish that has undergone a combined smoking and drying process and may include a salting process. The smoke must be applied through a smoke-drying process traditional for the respective country or an industrial smoke-drying process and the end product must have smoke-dried sensory characteristics.

2.3.2 Process definition

- "Smoke drying" is a process in which fish is treated by combined smoking and drying steps to such an extent that the final product can be stored and transported without refrigeration and to achieve a water activity of 0.85 or less.
- "Drying" is a process in which the moisture content in the fish flesh is decreased by exposing the fish to circulating air.
- "Salting" is a process of treating fish with salt of food grade quality to lower water activity in fish flesh and to enhance flavour by any appropriate salting technology (e.g. dry salting, brining, injection salting).
- "Packaging" is a process in which smoke-dried fish is put in a container to avoid contamination and prevent rehydration.
- "Storage" is a process in which smoke-dried fish is typically kept at ambient temperature in a way to assure its safety and quality in conformity with Sections 3 and 6.

2.4 Presentation

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

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 The raw material

Smoked fish, smoke-flavoured fish and smoke-dried fish shall be prepared from sound and wholesome fish, which may be fresh, chilled or frozen, and of a quality to be sold for human consumption after appropriate preparation.

3.2 Ingredients

All ingredients used shall be of food grade quality and conform to all applicable Codex standards.

3.3 Wood or other plant material for generation of smoke

Wood or other plant material used for the generation of smoke or smoke-condensates must not contain toxic substances either naturally or through contamination, or after having been treated with chemicals, paint or impregnating materials. In addition, wood or other plant material must be handled in a way to avoid contamination (Ref CAC/RCP 68-2009).

3.4 Decomposition

The product of susceptible species shall not contain more than 10 mg of histamine per 100g fish flesh based on the average of the sample unit tested and all products in this Standard shall be free from persistent and objectionable odours and flavours characteristic of decomposition

3.5 Final product

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

4. FOOD ADDITIVES

To be elaborated.

5. CONTAMINANTS

5.1 General provisions

The products covered by this Standard shall comply with the maximum levels of the Codex General Standard for Contaminants and Toxins in Foods and Feed (CODEX STAN 193-1995).

5.2. Polycyclic Aromatic Hydrocarbons (PAH)

Smoking of fish should be done in a manner that minimises the formation of polycyclic aromatic hydrocarbons (PAH). This can be achieved by following the Codex Alimentarius Code of Practice for the Reduction of Contamination of Food with Polycyclic Hydrocarbons (PAH) from Smoking and Direct Drying Processes (CAC/RCP 68-2009).

6. HYGIENE AND HANDLING

6.1 General provisions

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

6.2 Microbiological criteria

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

6.3 Parasites

Products covered by this Standard shall not contain living parasites and particular attention needs to be paid to cold smoked or smoke flavoured products, which should be frozen before or after smoking if a parasite hazard is present (see Annex 1). Viability of nematodes and cestodes and trematodes shall be examined according to Section 8.9 and/or 8.10.

6.4 *Listeria monocytogenes*

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

6.5 *Clostridium botulinum*

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

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

6.6 Histamine

The product shall not contain histamine that exceeds 20 mg/100g fish flesh. This applies only to susceptible species.

6.7 Other Substances

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

7. LABELLING

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

7.1 Name of the Food

The name of the food must be “smoked X” if treated by the processes described in paragraph 2.1, “smoke flavoured X” if treated by the processes described in paragraph 2.2,”smoke-dried X” if treated by the processes described in paragraph 2.3, X being the common or commercial name of the species of fish used in accordance with the law or customs of the country in which the food is sold, so as not to mislead the consumer.

7.2 Additional labelling

Countries where the product is sold can determine whether the use of regenerated smoke must be indicated on the label.

7.3 Storage Instructions

The label shall declare storage instructions appropriate for the product.

7.4 Labelling of Non-retail Containers

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

However, the name and address of the manufacturer or packer may be replaced by an identification mark (e.g., plant approval number) provided that such a mark is clearly identifiable with the accompanying documents.

8. SAMPLING, EXAMINATION AND ANALYSIS

8.1 Sampling

Sampling of lots for examination of the product for quality shall be in accordance with the General Guidelines on Sampling (CAC/GL 50-2004).

A sample unit is the individually packed product or a 1 kg portion from bulk containers.

The sampling of lots for microbial analysis and parasites shall be in accordance with the Principles for the Establishment and Application of Microbiological Criteria for Foods (CAC/GL 21-1997). The number of samples to be taken for the determination of the levels of histamine in a lot, shall be determined by the Competent Authority having jurisdiction.

8.2 Sensory and Physical Examination

Samples taken for sensory and physical examination shall be assessed by persons trained in such examination and in accordance with procedures elaborated in Sections 8.4 through 8.7 and the "Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories (CAC/GL 31-1999)."

8.3 Determination of Histamine

AOAC 977.13 or other scientifically equivalent validated method.

8.4 Determination of Gelatinous Conditions

The determination of gelatinised parts of the flesh, can be performed according to the

AOAC Methods- "Moisture in Meat and Meat Products, Preparation of Sample Procedure"; 883.18 and "Moisture in Meat" (Method A); 950.46; AOAC 1990.

8.5 Determination of Net Weight

The net weight is determined as the weight of the product, exclusive of packaging material, interleaving material, etc.

8.6 Temperatures for Thawing

Frozen samples of final products shall be thawed at temperatures low enough to maintain quality and safety.

8.7 Determination of *Listeria monocytogenes*

The microbiological criteria for products in which growth of *L. monocytogenes* will not occur are based on the use of the ISO 11290-2 method. Other methods that provide equivalent sensitivity, reproducibility, and reliability can be employed if they have been appropriately validated (e.g. based on ISO 16140). The microbiological criteria for products in which growth of *L. monocytogenes* can occur are based on the use of ISO 11290-1 method. Other methods that provide equivalent sensitivity, reproducibility, and reliability can be employed if they have been appropriately validated (e.g. based on ISO 16140).

8.8 Determination of *Clostridium botulinum*

AOAC 977.26 for the detection of *C. botulinum* and its toxins in foods or other scientifically equivalent validated method. This method is not routinely performed on the product, but may be used when there is a suspicion of the presence of toxins.

8.9 Determination of the viability of parasites

Methods used for testing the viability of parasites could include the method set out in Annex I for nematodes in the Standard for Salted Herring and Sprats or other validated methods for parasites acceptable to the competent authority having jurisdiction.

8.10 Determination of visible Parasites

The entire sample unit is examined for the presence of parasites non-destructively by placing appropriate portions of the thawed (if necessary) sample unit on a 5 mm thick acryl sheet with 45% translucency and candled with a light source giving 1500 lux 30 cm above the sheet.

9. DEFINITION OF DEFECTIVES

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

9.1 Foreign Matter

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

9.2 Parasites

The presence of two or more visible parasites per kg of the sample unit detected by the method described in 8.10 with a capsular diameter greater than 3 mm or a parasite not encapsulated and greater than 10 mm in length.

9.3 Odour and Flavour

A sample unit affected by persistent and distinct objectionable odours or flavours indicative for decomposition, or rancidity, burning sensation or other sensorial impressions not characteristic of the product.

[9.4 Flesh abnormalities

A sample unit will be considered defective when more than [5%] of the sample unit by weight is affected by a gelatinous condition and/or pasty texture indicative of decomposition e.g. resulting from parasitic infestation.]

10. LOT ACCEPTANCE

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

(i) The total number of defectives as classified according to Section 9 does not exceed the acceptance number (c) of an appropriate sampling plan (AQL-6.5) in the Codex General Guidelines on Sampling (CAC/GL 50-2004);

(ii) The average net weight of all sample units is not less than the declared weight, provided there is no unreasonable shortage in any container and no individual container is less than 95% of the declared weight; and

(iii) The Food Additives, Contaminants, Hygiene and Handling and Labelling requirements of Sections 4, 5, 6 and 7 are met. For histamine no sample unit shall exceed 20mg/100g of fish flesh as per the sampling plan chosen. (Ref. Section 8.3).

ANNEX 1

Procedures sufficient to kill parasites

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

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

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

- Freezing at –20Cº at the thermal centre of the product for 24 hours (for *Anisakis* species and *Pseudoterranova decipiens* only);
- Freezing at –35Cº at the thermal centre of the product for 15 hours (all parasites)[1-4];
- Freezing at –20Cº at the thermal centre of the product for 168 hours (7 days) [1-4] (all parasites).

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

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

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

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

ANNEX 2

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

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

As an alternative to aqueous phase salt, certain time/temperature parameters can minimise the likelihood that *C. botulinum* will grow in the product. *C. botulinum* cannot grow and produce toxin at or below 3ºC or below a water activity of 0.85. Other time/temperature combinations exist that similarly control the formation of toxin. (Skinner,G.E. and Larkin, J.W. (1998) Conservative prediction of time to *Clostridium botulinum* toxin formation for use with time-temperature indicators to ensure the safety of foods. (*Journal of Food Protection* **61**, 1154-1160). Where enforcement of shelf life as well as consumer acceptance of shelf life are norms, the country may select a system that relies on the combination of existing storage temperature conditions (i.e. during transport, retail storage, and consumer storage) and shelf life limitations.

However, in countries where consumer acceptance and regulatory enforcement of shelf life are not norms, continuous monitoring, such as that provided by time/temperature integrators on consumer packages can be an important adjunct to shelf-life monitoring in the country where the product will be consumed. The necessity for time/temperature integrators exists because, unlike freezing, temperature control through refrigeration is not a visual condition and cannot be determined without an additional monitoring control.

Product Temperature During Storage	Packaging	Water Activity controlled by Aqueous Phase Salt (NaCl)	Comments
[(0°C to 3°C)]	Reduced Oxygen (including vacuum packaging and modified atmosphere Packaging*)	No maximum water activity is needed.	*C. botulinum* toxin cannot form below 3° C. Temperature monitoring is needed for each package, e.g. time temperature integrators, to ensure that the temperature does not exceed 3ºC. The country where the product is consumed may require temperature monitoring for each package to ensure that the time-temperature combination does not permit the production of Clostridium botulinum toxin.
[(>3°C to 5°C)]	Aerobically Packaged	No maximum water activity is needed. Nonetheless, where there is a reason-able possibility of severe time/ temperature abuse, the country where the product is being consumed might choose an aqueous phase salt barrier of at least 3% to 3.5% (w/w) as an additional barrier.	When these products are packaged aerobically, 5ºC is the maximum recommended storage temperature for the control of pathogens generally and for quality. In air-packaged products, aerobic spoilage organisms provide sensory signs of spoilage before the formation of toxin by *C. botulinum.* However, even in air packaging it is possible for anaerobic micro-environments to exist and toxin may form if the product is subject to severe time/temperature abuse. For that reason, the country where the product is consumed may still require aqueous phase salt as a barrier to growth of non-proteolytic strains of *C. botulinum* if there are concerns about the ability of transporters, retailers or consumers to maintain time/temperature control.
Frozen (< or = -18°C)	Reduced Oxygen (including vacuum packaging and modified atmosphere Packaging*)	No maximum water activity is needed.	*C. botulinum* toxin cannot form when product is frozen. In the absence of adequate aqueous phase salt, toxin production can occur after thawing so, labelling information about the need for the consumer to keep the product frozen, to thaw it under refrigeration, and to use it immediately after thawing, is important. The country where the product is consumed may require temperature monitoring for each package to ensure that the time-temperature combination does not permit the production of Clostridium botulinum toxin after thawing.
[(>3°C to 5°C)]	Reduced Oxygen (including vacuum packaging + modified atmosphere packaging)	Aqueous phase salt at minimum level of between 3% & 3.5% (w/w) may be selected by the country where the product is to be consumed.	Aqueous phase salt at a minimum level of between 3 and 3.5% (w/w) (aqueous phase salt) in combination with chilling will significantly delay (or prevent) toxin formation. For that reason, the country where the product is consumed may still require the higher aqueous phase salt as a barrier to growth of non-proteolytic strains of *C. botulinum* if there are concerns about the ability of transporters, retailers or consumers to maintain time/temperature control.
[>5°C to 10°C]	Reduced Oxygen	5% (w/w) Aqueous Phase Salt provides complete protection	At these temperatures or higher non-proteolytics (*C. botulinum*) are controlled when aqueous phase salt is 5% (w/w). Proteolytic strains of *C. botulinum* start growing above 10ºC, however. It should be noted that the temperature range of >5ºC to 10ºC is not recommended for smoked fish products because of the possibility of growth of other microorganisms. It is included in this Annex solely to provide information about attributes affecting *C. botulinum* toxin formation when packaging is reduced oxygen.

*As new technologies are developed, e.g. modified atmosphere with high oxygen, new controls may be defined.

APPENDIX VII

PROPOSED DRAFT STANDARD FOR FRESH AND QUICK FROZEN RAW SCALLOP ADDUCTOR MUSCLE MEAT

(At Step 3 of the Procedure)

1. SCOPE

This standard applies to bivalve species of the *Pectinidae* family fresh and_quick frozen raw scallop adductor muscle meats[1] in which the shell, viscera and roe have been removed. This standard also applies to processed scallop meat products that have added water and/or food additives. Products covered by this standard may be intended for direct human consumption or for further processing.

This standard does not apply to:

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

ii) live scallops and scallop meat in which the shell, viscera or roe are attached. These products shall meet the requirements that apply to live and raw bivalve molluscs in the Standard for Live and Raw Bivalve Molluscs (CODEX STAN 292-2008).

2. DESCRIPTION

2.1 Product definition

2.1.1 Scallop Meat [Without Food Additives]

Fresh and quick frozen raw 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

2.1.2 Scallop Meat Product Processed with Added Water [and/or Food Additives[2]]

Quick frozen raw processed scallop meat product with added water and/or food additives 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. Food additives may be added during the processing of scallop meat.

2.2 Process definition

The fresh product after any suitable preparation shall be kept at the temperature of melting ice. Product, intended to be frozen, after any suitable preparation shall be subjected to a freezing process and shall comply with the conditions laid down hereafter. The freezing process shall be carried out in appropriate equipment in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless and until the product temperature has reached -18°C or colder at the thermal centre after thermal stabilization. The product shall be kept deep frozen so as to maintain the quality during transportation, storage and distribution.

The recognized practice of repacking quick frozen products under controlled conditions which will maintain the quality of the product, followed by the reapplication of the quick freezing process as defined, is permitted.

These products shall be processed and packaged so as to minimize dehydration and oxidation.

---

[1] Hereafter referred to as scallop meat

[2] Hereafter referred to in this Standard as processed scallop meat product

2.3 Presentation

Any presentation of the product shall be permitted provided that:

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

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Scallop Meat

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

3.2 Glazing

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

NEW -3.X Added Water / Food Additives

For scallop meat products processed with added water and/or food additives, added water and/or food additives are permitted to the extent that their use is acceptable in accordance with the law or custom of the country in which the product is sold. Any water added shall be of potable quality. Only food additives as outlined in Section 4.2 are permitted.

3.3 Final Product

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

3.3.2 In order to prevent economic fraud and unfair trade practices, harvesting, storage and handling must be conducted in accordance with good manufacturing practices.

3.3.2.1 Scallop Meat [Without Food Additives]: It is not an acceptable practice to handle and/or store this product in such a manner that would result in uptake of water beyond small amounts technologically unavoidable under good manufacturing practices compared to what naturally occurs in scallops at time of harvest.

3.3.2.2 Scallop meat products processed with added water and/or food additives: Added water is permitted to the extent that it is technologically unavoidable during the application of additives under good manufacturing practices.

In order to check the conformity with this provision, a country may establish a scientifically supported criterion. Where a country has relevant scientific information on the characteristics of the scallop species it exports, it may approach an importing country to discuss the implementation of this criterion on a species by species basis.

4. FOOD ADDITIVES

4.1 Fresh and Quick Frozen Scallop Meat [Without Food Additives]

No food additives are permitted in this product.

4.2 Scallop Meat Products Processed With Added Water and/or Food Additives

Additives are allowed in quick frozen raw processed scallop meat products to the extent that their use is acceptable within the country of production and in any country to which they are exported. Additives must be applied in conformance with section 3 and with good manufacturing practices as provided in section "X" of the Code of Practice for Processing of Quick Frozen Scallop Meat and elaboration.

339i Monosodium orthophosphate

340i Monopotassium orthophosphate

340iii Tripotassium orthophosphate

341ii Dicalcium orthophosphate

450i Disodium diphosphate

450iii Tetrasodium diphosphate

450vi Dicalcium diphosphate

452i Sodium polyphosphate

452iii Sodium calcium polyphosphate

452v Ammonium polyphosphates

339iii Trisodium orthophosphate

340ii Dipotassium orthophosphate

341i Monocalcium orthophosphate

341iii Tricalcium orthophosphate

450ii Trisodium diphosphate

450v Tetrapotassium diphosphate

450vii Calcium dihydrogen diphosphate

451i Pentasodium triphosphate

451ii Pentapotassium triphosphate

452ii Potassium polyphosphate

452iv Calcium polyphosphate

542 Bone phosphate

5. CONTAMINANTS

5.1 The product covered by this Standard shall comply with the Maximum Levels of the Codex General Standard for Contamination and Toxins in Foods (CODEX/STAN 193-1995) and the maximum residue limits for pesticides and/or veterinary drugs established by the CAC.

5.2 The product shall not contain marine biotoxins [3] exceeding the limits set out in Section 5 and as sampled and analysed by methods given in Section 7of the "Standard for Live and Raw Bivalve Molluscs (CODEX STAN 292-2008)".

[3] When scallop meat is prepared in accordance with the Revised Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003) – Section X: Processing of Scallops Meat (under elaboration), marine biotoxins are not reasonably likely to present a hazard in scallop meat. While the

6. HYGIENE AND HANDLING

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

6.2 It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969) and other relevant Codex texts such as:

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

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

6.3 The products should comply with any microbiological criteria established in accordance with the Principle for the Establishment and Application of Microbiological Criteria in Foods (CAC/CL 21-1997).

6.4 The product shall not contain any other substance in amounts which may present a hazard to health in accordance with standards established by the Codex Alimentarius Commission.

7. LABELLING

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

7.1 Name of the Food

The name of the product shall be:

7.1.1 (i) "X scallops" if it conforms with the product description outlined in 2.1.1 or

(ii) " 'processed' X scallops with added water' if it conforms with the product description outlined in 2.1.2. X being the common or usual name of the species of scallops according to the law, custom and practice in the country in which the product is to be distributed in a manner not to mislead the consumer.

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

7.2 Net Contents (Glazed Products)

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

7.3 Storage Instructions

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

7.4 Labelling of Non-Retail Containers

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

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

---

hazard analysis will consider marine biotoxins as a potential hazard, this hazard will be excluded or included based upon the species and the available data for toxins in that species.

7.5 Food Additives

When food additives are applied to scallop meat they must be listed as an ingredient on the label**.**

8. SAMPLING, EXAMINATION AND ANALYSIS

8.1 Sampling

(i) Sampling of lots for examination of the product shall be in accordance with the General Guidelines on Sampling (CAC/GL 50-2004). The sample unit is the primary container, or for individually quick frozen products or bulk packaged, is at least a 1 kg portion of the sample unit.

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

8.2 Sensory and Physical Examination

Samples taken for sensory and physical examination shall be assessed by persons trained in such examination and in accordance with procedures elaborated in Section 8.3 through 8.6 and Annexes, and in accordance with the Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories (CAC/GL 31-1999).

8.3 Determination of Pieces and Count

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

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

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

8.4 Determination of Net Weight of Products Covered by Glaze

8.4.1 If the product is individually quick frozen, as soon as the package is removed from frozen temperature storage, open immediately and place the contents under a gentle spray of cold water until all ice glaze that can been seen or felt is removed.

(Alternate Thawing Method)

If the product is individually quick frozen, as soon as the package is removed from frozen temperature storage, place the product in a container containing an amount of fresh potable water of 27 ºC (80 ºC) equal to 8 times the declared weight of the product. Leave the product in the water until all ice is melted.

8.4.2 If the product is block frozen, the sample unit is thawed by enclosing it in a film type bag and immersing in water at room temperature (not greater than 35°C). The complete thawing of the product is determined by gently squeezing the bag occasionally so as not to damage the texture of the scallop meat until no hard core or ice crystals are left. Turn block over several times during thawing. The point at which thawing is complete can be determined by gently probing the block apart.

8.4.3 Weigh a dry clean sieve with woven wire cloth with nominal size of the square aperture 2.8 mm (ISO Recommendation R565) or alternatively 2.38 mm (US No. 8 Standard Screen).

(i) If the quantity of the total contents of the package is 500 g (1.1 lbs) or less, use a sieve with a diameter of 20 cm (8 inches).

(ii) If the quantity of the total contents of the package is more than 500 g (1.1 lbs), use a sieve with a diameter of 30 cm (12 inches).

8.4.4 After all glaze that can be seen or felt has been removed and the scallop meat separate easily, empty the contents of the container on the previously weighed sieve. Incline the sieve at an angle of about 20º and drain for two minutes. Weigh the sieve containing the drained product. Subtract the mass of the sieve; the resultant figure shall be considered to be the net content of the package.

8.5 Cooking Methods

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

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

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

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

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

[8.6 Examination for Parasites

Scallops are visually examined by turning them over in an adequately lighted room (where a newspaper may be read easily).]

9. DEFINITION OF DEFECTIVES

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

9.1 Deep Dehydration

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

9.2 Foreign matter

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

9.3 Odour/Flavour

Scallop meat affected by persistent and distinct objectionable odours or flavours indicative of decomposition and/or rancidity.

[9.4 Parasites

The presence of visible parasites on the near surface of the scallop adductor muscle shall not exceed 20% of individuals in the sample.**]**

[9.5 Objectionable matter

The presence of:

i) objectionable parts of the scallops (such as remains of gills, mantle, hepatopancreas, viscera and intestinal tract and roe), affecting more than 10% of the sample by weight, provided the toxicity associated with the objectionable parts of scallops have met s.5.2 of this standard;

ii) sand or other similar particles that is visible in the thawed state or detected by chewing during sensory examination, affecting more than 10% of the sample by weight**]**

10. LOT ACCEPTANCE

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

(i) the total number of defectives as classified according to Section 9 does not exceed the acceptance number (c) of the appropriate sampling plan in the General Guidelines on Sampling (CAC/GL 50-2004);

(ii) where appropriate, the total number of sample units not meeting the count designation or presentation as defined in section 2.3 does not exceed the acceptance number (c) of the appropriate sampling plan in the Guidelines on Sampling (CAC/GL 50-2004);

(iii) the scallop meat requirement of Section 3.3.2 is met;

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

(v) the Food Additives, Contaminants, Hygiene and Handling and Labelling requirements of Sections 4, 5, 6 and 7 are met.

ANNEX A

SENSORY AND PHYSICAL EXAMINATION

Complete net weight determination, according to defined procedures in Section 8.4.

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

Thaw using the procedure described in Section 8.4.1 or 8.4.2 and individually examine each scallop meat in the sample unit for the presence of foreign matter, objectionable matter, and presentation defects. Determine the weight of scallop meat affected by presentation defects.

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

Assess the scallop meat for odour and parasites as required.

In cases where a final decision regarding the odour cannot be made in the thawed state, a small portion of the sample unit (100g to 200g) is prepared without delay for cooking and the odour/flavour confirmed by using one of the cooking methods defined in Section 8.5.

APPENDIX VIII

PROPOSED DRAFT PROCEDURE FOR THE INCLUSION OF ADDITIONAL SPECIES IN STANDARDS FOR FISH AND FISHERY PRODUCTS

(At Step 3 of the Procedure)

1. This procedure only applies to the standards falling within the mandate of the Codex Committee on Fish and Fishery products, for which a list of species has been drawn up.
2. This procedure will not be applied to any species currently included in a standard.

I. SUBMISSION OF AN APPLICATION FOR INCLUSION

3. The Codex Member requesting the inclusion of an additional species in an existing Codex standard, in the form of a draft amendment to the standard, shall provide before the next session of the Committee, for comments by the Codex members, information relating to the description of the species, its resources and the economic data shown in the evidentiary dossier below, at the same time as the project document required by Part 2-1 Elaboration Procedure.
4. The information provided at this stage should enable the Committee and later on the Commission, to decide whether the request is consistent with the Codex criteria for the establishment of work priorities, and specifically:
    i) if the candidate species is described precisely enough to assess its taxonomic relationship with the species already listed in the relevant Codex standard,
    ii) if the candidate species can be identified in international trade, including in processed products,
    iii) if the candidate species is fished (or farmed in aquaculture), processed and traded at a level to justifying its inclusion in an international standard (see section II.2 & II. 3 below).
5. When the Committee agrees to propose new work to the Commission, the Committee, in order to ensure the transparency of data and the quality of sensory testing, decides, based on the proposals by the applicant, on:
    i) the selection of three laboratories;
    ii) the choice of the species selected for the comparison, including, where appropriate, the reference species;
    iii) the methods of sensory analysis to be used;
    iv) the sampling plan to be used.
6. The Committee forwards the proposal for new work (on amending the standard) to the Commission for decision. At the same time, subject to approval of the new work by the Commission, the Committee:
    i) assigns to members, represented at the meeting, the tasks of coordinating the test, collecting the samples and performing the sensory tests, in compliance with the requirements established by the Committee.
    ii) establishes an electronic working group in charge of reviewing the results of the sensory evaluation and drafting a report for consideration by the next session of the Committee.
7. The report on the sensory evaluation should make clear whether the products manufactured using the candidate species are or are not significantly different from products covered by the standard in question, and specifically products derived from the reference species, where appropriate.

8. The Committee will assess, on the basis of this report , whether products prepared using the candidate species show sensory characteristics close to those of the species already covered by the standard

9. In the affirmative, the Committee forwards to the Commission for adoption the draft amendment to the standard at step 5 of the accelerated procedure.

II EVIDENTIARY DOSSIER

II.1) CANDIDATE SPECIES DESCRIPTION:

(To be used for assessing the proposal against the general criterion and specific criterion (d))[1]

To be valid, information provided in this chapter of the evidentiary dossier should originate from an internationally recognised scientific institution(s).

Species description includes, in order to allow identification o f the products both as fish and in trade:

(a) an attestation from an appropriate recognised institution regarding the scientific name;

(b) the trade designations used;

(c) morphological and anatomical characteristics (with a draft or a picture);

(d) taxonomical position of the candidate species in relation to all the species listed in the Codex standard, presented in the form of a diagram or a list[2] ; the reference of the database(s) used for taxonomic classification (for example FAO database) or bibliographic references;

(e) molecular data, achieved with recognized and appropriate methods (e.g. electrophoretic protein profile and/or specific DNA sequence[3]).

II.2) INFORMATION ON EXISTING AND POTENTIAL RESOURCES[4]

(To be used for assessing the proposal against the general criterion and specific criteria (a), (b) & (c)) *(1)*

(a) Localisation of the main capture grounds on the FAO map "Major Fishing Areas for Statistical Purposes";

(b) Yearly catches generally for the past 5 years;

(c) Where available, estimate of volume of stocks present in the natural environment with sufficient age distribution demonstrating that the product will continue to be traded internationally in the foreseeable future,

(d) Marketing data on the aquaculture production of the candidate species: annual production marketed for human consumption generally for the past 5 years.

---

[1] *This is referring to the chapter "Criteria for the establishment of work priorities" – p. 37 of the 18th English version of the Procedural Manual.*

[2] *Presentation using the customary Linnaean terminology for the ranking of the candidate species and the species (and/or taxa) mentioned in the Codex standard, and their higher taxa, until the closest common taxon: Kingdom, Phylum, Class, Order, Family, Genus, Species and/or super- or sub-rankings of these. For example, Kingdom: Animalia, Phylum : Chordata, Sub-phylum: Vertebrata, Super-Class: Gnathostomata, Class: Actinopterygii (=Osteichthyes), Order : Acipenseriformes, Family: Acipenseridae, Sub-family: Acipenserinae, Genus: Acipenser, Species: sturio (Linnaeus, 1758).*

[3] *When the country does not have access to this type of method, it may obtain existing data from scientific institutions recognised at international level or request that a competent laboratory perform the analyses in order to have reference data for the description and identification of the species. Moreover, there are public access databases on the internet such as Fishtrace or Fishbol.*

4 The information supplied can be complemented by FAO statistical publications (FAO Yearbook, Fishery Statistics "Capture production", "Aquaculture production" and "Commodities"), or by other internationally recognised publications.

II.3) PROCESSING AND MARKETING

(To be used for assessing the proposal against the general criterion and specific criteria (a), (b) & (c)) [(1)]

(a) Data on international trade of the species (raw material) and processed products obtained from it: Yearly quantity and values (generally for the past 5 years);

(b) Data on candidate species processing (reporting separately products intended for animal feed): types of marketed products, processing procedures, annual production (generally for the past 5 years); percentage of these products likely to conform to the relevant Codex standard;

II.4) COMPARISON SENSORY CHARACTERISTICS OF THE CANDIDATE PRODUCT WITH THE PRODUCTS COVERED BY THE STANDARD

(To be used for assessing the proposal against the General Criterion)[(1)]

The working group will be charged with comparing the sensory characteristics of the candidate product against the product(s) covered by the standard and implementing the methodology necessary for this comparison, which will include identifying and carrying out the following:

- the three testing laboratories;
- the species chosen for the comparison;
- the methods of sensory analysis to be used;
- the sampling plan;
- the sensory analysis report.

II.4.1) RECOMMENDATIONS FOR THE PERFORMANCE OF THE SENSORY EVALUATION

The sensory evaluation of fish and fishery products is used to check whether a product derived from a new species is of a quality or possesses sensory attributes close to those of species already covered by the standard.

The sensory evaluation is influenced by different environmental factors. The conditions under which tests are organised have a significant impact on the quality of the results. The use of correct sampling procedures, organisation of tests, operating methods and the rigorous presentation and interpretation of the results are necessary to ensure that the products being evaluated present a broad spectrum of similar organoleptic properties.

II.4.2) Selection of 3 laboratories

The laboratories that will carry out the sensory analysis are selected by the Committee.

The three selected laboratories shall have a panel trained in sensory analysis of fishery products and should be accredited if possible. It is recommended that selected laboratories carry out interlaboratory comparison tests in order to verify that their results are consistent for each panel and their efficiency.

The Committee may, upon consideration of rationale submitted by the member making the application, agree to sensory evaluation by either one or two laboratories.

Ii.4.3) Scope of the comparison

(a) The comparison may be limited to processed products from the candidate species and from a maximum of three species from the list shown in the current Codex standard, including, where appropriate, the reference species. These species should be representative of the range of sensory qualities of those species included in the standard.

(b) All the samples should have been processed following the relevant specifications.

II.4.4) Implementation of the tests

The performance of the tests should conform to the *Codex Guidelines for the Sensory evaluation of Fish and Shellfish in laboratories* – CAC - GL 31-1999[5].

II.4.5) Methods to be used

The methods should be in accordance with the *General Criteria for the Selection of Methods of Analysis*[6] or, where relevant, with the *General Criteria for the Selection of Single-Laboratory Validation Methods*[7] laid out in the Codex *Principles for the Establishment of Codex Methods of Analysis*[8]. Preference shall be given to the methods drawn up by international organisations and of which the reliability has been established with regard to the appropriate criteria.

---

5 http://www.codexalimentarius.net/download/standards/359/CXG_031e.pdf

6 *(Codex Procedural Manual, 18th edition, page 110 - English version)*

7 *(Codex Procedural Manual, 18th edition, page 110- English version)*

8 *(Codex Procedural Manual, 18th edition, page 109 - English version)*

APPENDIX IX

PROPOSED DRAFT STANDARD FOR FISH SAUCE

(At Step 5 of the Procedure)

1. SCOPE

This standard applies to fish sauce produced by means of fermentation and may include other ingredients added to assist the fermentation process. The product is intended for direct consumption as a seasoning, or condiment or ingredient for food. This standard does not apply to fish sauce produced by acid hydrolysis.

2. DESCRIPTION

2.1 PRODUCT DEFINITION

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

2.2 PROCESS DEFINITION

The product is prepared by mixing fish with salt and is put in covered containers or tanks. Generally, the fermentation process takes not less than 6 months and may follow by adding brine to extract the remaining protein fish flavor and odour until the liquid is obtained. The product shall meet the requirements of section 3.3. Other ingredients may be added to assist the fermentation process.

2.3 PRESENTATION

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

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1. Raw material

3.1.1 Fish

Fish sauce shall be prepared from sound and wholesome fish in a condition fit to be sold fresh for human consumption.

3.1.2 Salt

Salt used shall be of food grade quality.

3.1.3 Brine

Brine is a solution made from salt and potable water.

3.2 Other ingredients

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

3.3 Quality criteria

3.3.1 Organoleptic criteria shall be acceptable in terms of appearance, odour and taste as follows:

Appearance

Fish sauce must be translucent, not turbid and free from sediments except salt crystals.

Odour and taste

Fish sauce shall have odour and taste characteristic of the product.

3.3.2 Foreign matter

This product shall be free from foreign matter.

3.4 Chemical properties

- Total nitrogen content: not less than 10g/l;

- Amino acid nitrogen content: not less than 40% of total nitrogen content;

- pH: The pH shall be between 5.0 - 6.5;

- Salt: not less than 200g/l, calculated as NaCl.

3.5 Final product

The product shall meet the requirements of this standard when lots examined in accordance with Section 11 comply with the provisions set out in Section 10. The products shall be examined by the methods given in Section 9. The packaging for the final product shall be free from any integrity defects, such as cracks, leakage, or loose pieces of the packaging units.

4. Food Additives

The use of food additives shall comply with the Codex General Standard for Food Additives (CODEX STAN 192-2007). Acidity regulators, Antioxidants, Flavour enhancers, Sweeteners, Colours, Emulsifiers and Stabilizers, and Preservatives used in accordance with Table 1 and 2 of the Codex General Standard for Food Additives in food category12.6 (Sauce and like products) and 12.6.4 Clear sauces (e.g., fish sauce) or listed in Table 3 of the General Standard for Food Additives are acceptable for use in foods conforming to this standard.

5. Contaminants

The products covered by this Standard shall comply with the Maximum Levels of the Codex General Standard for Contaminants and Toxins in Foods and Feed (CODEX/STAN 193-1995).

6. Hygiene and Handling

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

6.2 It is recommended that the products covered by provisions of this standard be prepared and handled in accordance with the appropriate sections of the Recommended International Code of Practice-General Principle of Food Hygiene (CAC/RCP 1-1969), Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003) and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

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

6.4 The product shall not contain more than 40 mg histamine /100g of fish sauce in any sample unit tested.

7. WEIGHTS AND MEASURES

7.1 Fill of Containers

7.1.1 Minimum Fill Containers should be filled as full as commercially practicable

7.1.2 Classification of "Defectives"

A container that fails to meet the requirement for minimum fill of section 7.1.1 should be considered as a "defective"

7.1.3 Lot acceptance

A lot shall be considered as meeting the requirement of section 7.1.1 when the number of "defectives" as defined in Section 7.1.2, does not exceed the acceptance number (c) of the appropriate sampling plan with an AQL 6.5

8. LABELLING

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

8.1 Name of the product

The name of the product shall be "fish sauce" or other names, in accordance with the law and custom of the country in which the product is sold, and in a manner not to mislead the consumer. The name of the product may be preceded or followed by the common or usual name of the fish.

If during fermentation process, fish is mixed with salt or brine only, the fish sauce may be declared on the label as "natural fermentation".

8.2 Labelling of non-retail containers

Information on the above provisions shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer or packer, as well as storage instructions shall appear on the container. However, lot identification, and the name and address of the manufacturer or packer may be replaced by an identification mark provided that such a mark is clearly identified with the accompanying document.

9. SAMPLING, EXAMINATION AND ANALYSIS

9.1 Sampling Sampling of lots for examination of the final product shall be in accordance with the Codex General Guidelines on Sampling (CAC/GL 50-2004). A sample unit is the individually packed product (bottle) or a 1l portion from bulk containers.

9.2 Sensory and Physical Examination Samples taken for sensory and physical examination shall be assessed by persons trained in such examination: in accordance with the Guidelines for the Sensory Evaluation of Fish and Shellfish in Laboratories (CAC/GL 31-1999) as follows:

- Complete external packaging unit examination for the presence of any integrity defects, particularly cracks or leakage or loose pieces of the packaging units.
- Examination of the product for translucence and foreign matter.
- Evaluation of odour and taste.
- Test methods for chemical propertiesDetermination of total nitrogen: AOAC 940.25

9.3 Determination of pH: The pH shall be measured in a sample of fish sauce diluted with water to 1:10 using a pH meter. The dilution of fish sauce is necessary because of the high ionic strength in the undiluted sauce.

9.3 Determination of amino acid nitrogen by determining formaldehyde nitrogen (AOAC 2.066) and subtracting by ammoniacal nitrogen (AOAC 2.065)

9. 4 Determination of sodium chloride: FAO 1981, Technical Paper 219 See AOAC 937.13 or 976.18 or 976.19.

9. 5 Determination of Histamine: See AOAC 977.13.

10. Definition of Defectives

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

10.1 Foreign Matter

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

10.2 Appearance

The presence of any sediments (except NaCl crystals) and/or cloudiness.

10.3 Odour

A sample unit affected by distinct objectionable odour, e.g. rotten, putrid, rancid, gamey, pungent etc.

10.4 Taste

A sample unit affected by distinct objectionable taste, e.g. bitter, sour, metallic, taint, etc.

11. LOT ACCEPTANCE

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

(i) the total number of defective sample units as classified according to Section 10 does not exceed the acceptance number (c) of the appropriate sampling plan in Section 9; and

(ii) the food additives, contaminants, hygiene and labelling requirements of Sections 4, 5, 6, 8 are met.