

# codex alimentarius commission



FOOD AND AGRICULTURE  
ORGANIZATION  
OF THE UNITED NATIONS

WORLD  
HEALTH  
ORGANIZATION



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**Agenda Item 5**

**CX/FFP 02/5-Add.1**

## **JOINT FAO/WHO FOOD STANDARDS PROGRAMME**

### **CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS**

Twenty-fifth Session

Ålesund, Norway, 3 - 7 June 2002

### **CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS: DRAFT SECTIONS AND PROPOSED DRAFT SECTIONS**

#### **GOVERNMENT COMMENTS AT STEP 3 AND STEP 6**

**(Cuba, France, Norway, Spain, Thailand, United States)**

#### **CUBA (ENGLISH VERSION)**

Following an analysis by experts in the area, the Republic of Cuba expresses its agreement with the sections of the Code of Practice for Fish and Fishery Products that were examined by the 24<sup>th</sup> Session of the Committee on Fish and Fishery Products in Ålesund, Norway, in 2000 and were forwarded to Step 6:

Section 1. *Scope*

Section 2. *Definitions (General Definitions, Fresh, Frozen and Minced Fish, Canned Fish)*

Section 3. *Prerequisite Programme*

Section 4. General Consideration for the Handling of Fresh Fish and Shellfish

Section 5. HACCP

Section 6. Processing of Fresh Frozen and Minced Fish

Section 13. Processing of Canned Fish and Shellfish.

We have no comment in this respect.

#### **CUBA (VERSION ESPAÑOLA)**

Después del análisis realizado por los expertos en el tema, la República de Cuba manifiesta su acuerdo con las Secciones del Código de Prácticas de Pescado y productos pesqueros que fueron analizadas en la 24 Reunión celebrada en Alesund, Noruega, en el año 2000 y que pasaron al trámite 6 las cuales son:

Sección 1 Ambito de aplicación.

Sección 2 Definiciones, las generales y las relacionadas con el pescado.

Sección 3 Programa de requisitos previos.

Sección 4 Consideraciones generales sobre manipulación de pescado y mariscos frescos.

Sección 5 HACCP

Sección 6 Elaboración de pescado fresco, congelado y picado.

Sección 13 Elaboración del pescado y mariscos en conserva.

No tenemos observaciones al respecto.

#### **FRANCE (English version)**

France participated in the drafting group for this document and therefore supports the adoption of the sections proposed at Step 6 of the Procedure, with some changes that are necessary to improve the clarity of the Code as a whole. Some clarification is necessary in the French version of Annex 1 in order to avoid confusion,

especially as regards definitions. As the Code now includes sections (in Annex 2) that did not exist or were incomplete when the Code was discussed at the 24<sup>th</sup> Session, the new structure proposed for the Code makes it necessary to clarify some cross-references between sections. In this context some sections at Step 6 should be completed or amended.

### **General comments**

Definitions of "fish" and "shellfish" : French version

In addition the use of the term "fishery products" that is not defined in the text, adds somewhat to the confusion.

**Proposals** : in order to clarify the text, France proposes:

- to use in the text a general terms such as "marine and freshwater products", different from generic names identifying species classes, when it is necessary to cover all products; and to mention explicitly the generic terms : fish, crustaceans, shellfish, cephalopods, when one or several of these classes are concerned.
- to amend or complete the definitions in section 2.1 as follows:

**fish** means any of the cold-blooded aquatic vertebrates, or parts or products of these. Aquatic mammals and amphibians are not included;

**marine and freshwater products** means any of the cold-blooded aquatic vertebrates and aquatic invertebrates, or parts or products of these. Aquatic mammals and amphibians are not included

**shellfish** : delete

- to ensure consistency of the text with the definitions

2. The objective of the Code is to include in one document all general and specific hygiene provisions, to be applied to all marine and freshwater products, throughout the food chain. France therefore proposes that the following steps be introduced in the draft, especially as regards the Scope defined in Section 1, and that the relevant sanitary pre-requisites be defined as follows:

- landing stages of the products, including minimal conditions for landing sites and hygienic practices to be followed
- first stage of marketing of the products by traders at the landing site or wholesale markets
- further marketing stages on wholesale markets

### **Specific comments by section**

#### **2.1 General Definitions**

**Clean water** should be modified as follows to take into account all hazards and the definition of "contaminant" in the same chapter:

- means water from any source where, naturally or after adequate treatment, contaminants are not present in such quantities as may affect the health quality of marine and freshwater products

**Cleaning** should be consistent with the definition of "disinfection" and distinguish cleaning and rinsing operations and the following amendment is proposed:

- means the removal by mechanical, physical or chemical means of visible soil, food residues, dirt, grease or other objectionable matter

**Biotoxins**: in order to take into account risks related to some toxic species, France proposes the following amendments:

- means poisonous substances naturally present in marine and freshwater products or accumulated by the animals feeding on toxin producing algae, or in water containing toxins produced by such organisms

in addition if histamine is retained in this class of hazards (cf section 4.1.1.4) this definition is not consistent and should be revised accordingly for example as follows: "toxic organisms or substances that accumulate in some species of fish during their decomposition"

### Section 3. Pre-requisite Programme

#### 3.1.4 To Minimise Damage During Harvesting of Aquaculture Fish

The 5<sup>th</sup> bullet should be deleted, as proposed in Annex 2. A difference should be established between fish that dies once out of the water than with fish that is harvested dead as sanitary risks associated with the latter are higher. In the latter case, these products alter very rapidly as bacteria are already present in the flesh.

#### 3.2.2 To Minimise Contamination

- (1) processing facility layout should be designed to minimise cross-contamination and may be accomplished by physical or time separation, when the dimensions and/or number of facilities justify this procedure ;
- (2)all surfaces in fish handling or storage of non-packaged products areas should be non-toxic, smooth impervious, easy to clean and in sound condition as regards maintenance and cleanliness, to minimise the build-up of fish slime, blood, scales and guts and to reduce the risk of physical contamination;
- (5)working surfaces that come into direct contact with fish should be in sound condition as regards maintenance, durable and easy to maintain and should be kept clean. They should be made of smooth, non-absorbent and non-toxic materials, and inert to fish, detergents and disinfectants under normal operating conditions;
- (10)non-potable water lines should be clearly identified and separated from potable water to avoid contamination; (French version only)
- 19 - new - working areas, utensils and equipment should be used only for the processing of the products for which they were designed. With the agreement of the competent authority, it might be possible to use them for the processing of other types of foods, providing these operations are separate in terms of space/time, following appropriate cleaning/disinfection procedures.

#### 3.3.1 For Ease of Cleaning and Disinfection

Point 4: the requirement for cleaning agents to be authorized by the competent authority should be transferred to point 3.4.1. However, the reference to official agreement for cleaning equipment should be deleted.

#### 3.7 Traceability and Recall

Point 3: "where there is an immediate health hazard, products produced under similar conditions, and likely to present a similar hazard to public health, may be withdrawn for the purposes of human consumption. .."

### Section 4. HACCP

#### 4.1 Potential Hazards Associated with Fresh Fish and Shellfish

##### 4.1.1 Biological Hazards

France wishes some clarification concerning the classification of hazards, especially as regards the following:

- *Staphylococcus aureus* may also appear as a latent germ in the coastal environment in some regions
- *Vibrio parahaemolyticus* is pathogen if the strain concerned develops factors of pathogenicity. This species is assimilated to common bacteria, about which paras. 3 and 4 mention that they are heat sensitive whereas this species and/or its toxins are particularly heat resistant;
- Scombrototoxin is associated, in this section, with biotoxins, although they are considered as a microbiological hazard in section 113 and it is not taken into account in the definition of biotoxins in section 2.1. To ensure consistency, it is proposed to delete the "Scombrototoxin" paragraph in section 4.1.1.4 and to include a specific section 4.1.1.5 "Scombrototoxin". Similarly, section 13.2.1 should be amended and para. A2 should be divided into two paras. "A2 Scombrototoxin" and A3 Microbiological toxins"

As regards this toxin, new section 4.1.1.5 could include the following clarification:

- histamine is produced from histidine, naturally present, in more or less high quantities, in fish flesh;

- the most sensitive fish species belong not only to the Scombridae family, but also to Clupeidae, Engraulidae, Coryphaenidae, Istiophoridae and swordfish or related species
- the main control measures are based on early, sufficient and continuous cooling of the fish, as well as early gutting and/or bleeding (if practical) in a hygienic manner
- histamine production may appear or be renewed at any moment (including in processed products when they are not stabilized), following bacterial contamination and/or disruption of the cold chain

## **Section 5. HACCP**

### **5.3.3.1 Identification of Hazards and Defects**

In Table 5.2: add *Clostridium botulinum* in "Pathogenic bacteria" and Hepatitis A Virus in "Enterovirus"

In Table 5.3 add *Vibrio cholerae* 01 and 0 139 and *Salmonella* in "Pathogenic Bacteria" and delete "Norwalk Virus" in "Enterovirus"

## **Section 6. Processing of Fresh, Frozen and Minced fish**

This chapter seems to cover only fish. However, in view of the definition proposed in 2.1 for fish and point e) in section "How to use this Code", it may be understood to apply to all marine and freshwater products. This ambiguity partly justifies the amendments proposed to some definitions in 2.1. In addition when considering the sections related to operations that take place before or after those covered by this section for other species than fish, consistency should be ensured between relevant sections.

Under "potential hazards" in section 6.1.1, "biotoxins" should be added

Under "potential hazards" in section 6.1.2, 6.1.4, 6.2.2, 6.4.1 and 6.4.2, replace biotoxins with scombrototoxin and microbiological toxins

Under "potential hazards" in section 6.1.3 and 6.1.5, replace toxins with scombrototoxin and microbiological toxins

Under "potential hazards" in section 6.1.5, add viable parasites

Under "potential hazards" in section 6.4.4, add microbiological pathogens

Under "potential hazards" in section 6.5.1 and 6.5.2, delete biotoxins

Under "technical guidance" in section 6.5.2 add the following:

- when used, packaging should be clean and where applicable should have been disinfected
- packaging used for products packed in ice should be designed to allow thawing water to drain

In point 6.4.1, the meaning of "split fish" should be made more explicit. Does it cover only pieces of flesh with skin and bone fragments or does it cover by-products such as backbone, head, viscera, because sanitary risks related to these types of raw material are different and might require appropriate addition to the "technical guidance".

## **Section 13 Processing of Canned Fish and Shellfish**

Use of the term "shellfish": French version

### Proposals:

- The title should be "Canned Marine and Freshwater Products" or "Canned fish, crustaceans, cephalopods and molluscan shellfish"
- Check and complete the references to other sections concerning live, fresh or frozen crustaceans, cephalopods and molluscan shellfish, for example in the processing diagrams

## **FRANCE (FRENCH VERSION)**

La France a participé au groupe de rédaction de ce document. Elle appuie donc l'adoption des sections proposées à l'étape 6 de la procédure, sous réserve de certaines modifications qui apparaissent nécessaires pour améliorer la lisibilité du code dans son ensemble. En effet, la traduction française de l'annexe 1 révèle un certain nombre de points pouvant prêter à confusion, nécessitant d'apporter quelques précisions notamment au

niveau des définitions. Par ailleurs, du fait que le projet de code d'usage comporte désormais (annexe 2) des sections qui, lors de la 24<sup>ème</sup> session, étaient soit absentes soit incomplètes, la nouvelle articulation du code proposée mettent en lumière la nécessité de vérifier ou de préciser certaines références croisées entre sections. Dans ce contexte, il apparaît aussi nécessaire de compléter ou de modifier certaines sections qui sont déjà à l'étape 6 de la procédure.

## I - Commentaires généraux

1. Les définitions des termes « **Poisson** » (fish en anglais) et « **Mollusques et Crustacés** » (shellfish en anglais) données au point 2.1, ainsi que leur traduction et l'usage qui en est fait dans le reste de ce document prêtent à confusion. Par exemple :

- le terme « **poisson** » tel que défini dans la section 2.1., c'est à dire un *terme général recouvrant l'ensemble des produits de la mer et d'eau douce, à l'exception des mammifères marins et des amphibiens*, est souvent repris dans le titre des sections ou dans le corps du texte accompagné de la citation d'autres catégories de produits, pourtant couvertes par cette définition ;
- le terme « **shellfish** » est interprété en français par la notion de « fruits de mer » couvrant habituellement les crustacés et les coquillages, alors que la traduction officielle proposée recouvre les mollusques comprenant les coquillages et les céphalopodes, ainsi que les crustacés. Cette globalisation des termes porte préjudice à la pertinence des recommandations émises, car ces dernières couvrent un ensemble de produits présentant des risques sanitaires et des mesures de maîtrise générales ou spécifiques différentes ;
- par ailleurs, l'utilisation régulière du terme « **produits de la pêche** » non défini dans le texte, ajoute un élément de confusion.

→ **Propositions** : Afin d'améliorer la lisibilité du texte, la France propose

- d'utiliser dans le texte un terme général comme « produits de la mer et d'eau douce », différent des noms génériques identifiant les grandes catégories d'espèces, lorsqu'on veut couvrir l'ensemble des produits et de citer explicitement les termes génériques poissons, crustacés, coquillages, céphalopodes, lorsque une ou plusieurs catégories sont ciblées;
- de modifier et de compléter les définitions de la section 2.1 de la manière suivante :
  - « **poisson** : « *tous les animaux, parties ou produits d'animaux aquatiques vertébrés à sang froid, à l'exception des mammifères aquatiques et des amphibiens* » ;
  - « **produits de la mer ou d'eau douce** : *tous les animaux, parties ou produits d'animaux aquatiques vertébrés et invertébrés à sang froid. Les mammifères aquatiques et les amphibiens sont exclus* » ;
  - « **mollusques et crustacés** » : à supprimer ;
  - « **coquillage** : *mollusques bivalves et, par assimilation, gastéropodes marins, échinodermes et tuniciers* »;
- de mettre le texte en cohérence avec ces définitions.

2 Les objectifs sanitaires fixés pour ce code visent à réunir dans un même document l'ensemble des dispositions générales et spécifiques en matière d'hygiène, qui doivent s'appliquer à l'ensemble des produits de la mer et d'eau douce, de l'amont à l'aval de la filière. Par conséquent, la France propose que les étapes suivantes soient introduites dans le cadre de ce projet, notamment au niveau du champ d'application défini à la section 1, et que les conditions sanitaires pré-requises s'y rapportant soient définies :

- étape de débarquement des produits, incluant les conditions minimales d'aménagement des sites de débarquement et les pratiques d'hygiène à respecter;
- étape de première mise en vente des produits à des professionnel au niveau des sites de débarquement, criées ou halles à marée ;
- étape ultérieure de vente des produits entre professionnels au niveau des marchés de gros.

## II - Commentaires détaillés par section

## SECTION 2 - Définitions

### 2.1 Définitions générales

- « **Eau propre** » : afin de prendre en compte l'ensemble des dangers et la définition du terme « contaminant » figurant dans le même chapitre, cette définition pourrait être modifiée de la manière suivante :
  - « *eau provenant de toute source, ne présentant pas de manière naturelle ou après un traitement approprié, de contaminants en quantité susceptible d'affecter la salubrité et/ou la sécurité des produits de la mer et d'eau douce* ».
- « **Nettoyage** » : afin de mettre en cohérence cette définition avec celle donnée pour la désinfection et distinguer les opérations de nettoyage de celles de rinçage, les modifications suivantes pourraient être apportées :
  - « *élimination par des moyens mécaniques, physiques et/ou chimiques des souillures, des résidus d'aliments, de la saleté, de la graisse ou de toute autre matière indésirable, visibles* ».
- « **Biotoxines** » : afin de prendre en compte les risques liés à certaines espèces toxiques, la France propose les modifications suivantes :
  - « *substances toxiques naturellement présentes dans les produits de la mer (ou d'eau douce) ou accumulées par ces animaux se nourrissant d'algues produisant des toxines, ou se nourrissant dans l'eau (de mer) contenant des toxines produites par ces organismes* ».
  - par ailleurs, si l'histamine est maintenue dans cette catégorie de danger (cf. commentaires section 4.1.1.4), cette définition n'est pas cohérente et devrait être révisée en conséquence, en la complétant par exemple, par : « *...organismes ou substances toxiques s'accumulent dans certains poissons au cours de leur décomposition* ».

## SECTION 3 - Programme des conditions préalables

### 3.1.4. Pour endommager le moins possible le poisson d'élevage durant la récolte

La France souhaite que le 5° point soit supprimé, tel que cela est proposé dans l'annexe 2. En effet, il faut différencier un poisson qui meurt une fois sorti de l'eau et un poisson récolté mort qui doit être assimilé à un cadavre et qui présente des risques sanitaires supérieurs. Dans ce dernier cas, ces produits sont très facilement altérables car les bactéries ont déjà pu diffuser dans la chair et se multiplier.

### 3.2.2 Pour réduire la contamination au minimum

La France propose les modifications rédactionnelles suivantes :

- **point 1** : « *...ce qui pourrait être obtenu par une séparation matérielle ou dans le temps, dès lors que le dimensionnement et/ou le nombre de locaux le justifient* » ;
- **point 2** : « *toutes les surfaces dans les zones de manutention ou de stockage des produits non emballés devraient être non toxiques, lisses, imperméable, facile à nettoyer et en bon état d'entretien et de propreté, afin de réduire au minimum l'accumulation de mucus, le sang, les écailles et les viscères de produits de poisson et de réduire le risque de contamination* » ;
- **point 3** : « *les surfaces de travail entrant en contact avec les produits devraient être en bon état d'entretien, durables et faciles à nettoyer et être maintenu en bon état de propreté. Elles devraient être en matériau lisse, imperméable, non toxique, résistant à la corrosion, et...* » ;
- **point 5** : « *...entreposage ou production de la glace, dans des conditions hygiéniques* » ;
- **point 10** : « *les canalisations d'eau non potable...* » (termes oubliés lors de la traduction) ;
- **point 19 (nouveau)** : « *les zones de travail, les outils et le matériel devraient être uniquement utilisés pour l'élaboration des produits pour lesquels ils ont été conçus. Avec l'accord des autorités compétentes, ils pourraient être éventuellement utilisés à la production d'autres types de denrées alimentaires, à condition que ces opérations soient réalisées dans un espace ou à un moment différents, après la mise en œuvre de procédures de nettoyage/désinfection appropriées* ».

### 3.3.1. Pour faciliter le nettoyage et la désinfection

- **point 4** : la notion de détergent et **désinfectant** autorisé par l'autorité compétente devrait être transférée au point 3.4.1. En revanche, la notion d'agrément pour le matériel de nettoyage devrait être supprimée.

### 3.7 Traçabilité et procédure de retrait

- **Point 3** : « quand il y a danger immédiat pour la santé humaine, les autres produits fabriqués dans des conditions similaires....., **peuvent être retirés de la consommation humaine et saisis.** »

## SECTION 4- HACCP

### 4.1 Dangers potentiels associés « produits de la mer et d'eau douce frais »

#### 4.1.1. dangers biologiques

La France souhaite que des précisions soient apportées quant à la classification des dangers, notamment à l'égard :

- de *Staphylococcus aureus* qui peut également apparaître comme un germe latent présent dans l'environnement côtier de certaines régions ;
- de *Vibrio parahaemolyticus* qui est pathogène si la souche possède des facteurs de pathogénicité. Cette espèce est assimilée aux bactéries latentes, pour lesquelles il est mentionné dans le 3<sup>o</sup> et 4<sup>o</sup> paragraphe, qu'elles sont sensibles à la chaleur alors que cette espèce et/ou les toxines produites sont particulièrement résistantes à un traitement par la chaleur ;
- de la scombrottoxine qui est associée, dans cette section, aux biotoxines, alors qu'elle est considérée comme un danger microbiologique à la section 13 et qu'elle n'est pas prise en compte dans le libellé de la définition des biotoxines donnée au point 2.1. Pour rétablir cette cohérence, il est proposé de supprimer le paragraphe « Scombrottoxine » du point 4.1.1.4 et de créer un point spécifique 4.1.1.5 « Sombrottoxine ». Parallèlement, il conviendrait de modifier la section 13.2.1 en scindant le point A2 en deux points : « A2 Scombrottoxine » et « A3 Toxines microbiologiques ».

Concernant cette toxine, les précisions suivantes pourraient être apportées au nouveau point 4.1.1.5. :

- l'histamine est formée à partir de l'histidine, présente naturellement, en plus ou moins grande quantité, dans la chair des poissons ;
- les poissons les plus sensibles appartiennent non seulement à la famille des scombridés, mais aussi à celles des clupeidés, des engraulidés, des coryphaenidés, istiophoridés et espadons ou assimilés ;
- les principales mesures de maîtrise reposent sur une réfrigération précoce, suffisante et continue des poissons, ainsi que sur une éviscération et/ou une saignée précoce (si réalisable en pratique), effectuée de manière hygiénique ;
- la production d'histamine peut apparaître ou reprendre à tout moment (y compris sur les produits transformés n'étant plus dans un état stabilisé), à la faveur de contamination bactérienne et/ou de perte de maîtrise de la chaîne du froid.

## SECTION 5 . HACCP

### 5.3.3.1. Identifications des dangers et des défauts

- Au tableau 5.2 : rajouter *Clostridium botulinum* dans la case « bactéries pathogènes » et Virus de l'hépatite A dans la case « enterovirus »
- Au tableau 5.3, rajouter *Vibrio cholerae* 01 et 0 139 et Salmonelles dans la case « bactéries pathogènes » et supprimer le « Virus de Norwalk » dans la case « enterovirus »

## SECTION 6 :

- Ce chapitre semble couvrir uniquement les poissons. Cependant, compte tenu de la définition donnée en 2.1 du terme « poisson » et du libellé du point e) de la section « comment utilisé ce code », on pourrait comprendre qu'il s'applique à l'ensemble des produits de la mer et d'eau douce. Cette ambiguïté justifie en partie les propositions de modifications de certaines définitions figurant en 2.1. Par ailleurs, il conviendrait

de vérifier, lors de l'examen des sections du code traitant d'opérations situées en amont ou aval de celles figurant dans cette section concernant les catégories d'espèces autres que les poissons, que ces dernières soient mises en cohérence avec cette section, de manière explicite.

- Au point « dangers potentiels » de la section 6.1.1, le terme biotoxines devrait être rajouté.
- Aux points « dangers potentiels » des sections 6.1.2, 6.1.4, 6.2.2, 6.4.1, et 6.4.2, remplacer le terme biotoxines, par scombrotoxine et toxines microbiennes.
- Aux points « dangers potentiels » des sections 6.1.3 et 6.1.5, remplacer toxines par scombrotoxine et toxines microbiennes.
- Aux points « dangers potentiels » de la section 6.1.5 : rajouter parasites viables.
- Aux points « dangers potentiels » de la section 6.4.4, rajouter agents pathogènes microbiologiques.
- Aux points « dangers potentiels » des sections 6.5.1 et 6.5.2 supprimer « biotoxines ».
- Aux points « conseils techniques » de la section 6.5.2 ajouter les points suivants :
  - « *au moment de leur utilisation, les conditionnements doivent être propres, et le cas échéant, avoir été désinfectés* »
  - « *les conditionnements utilisés pour les produits conditionnés sous glace devraient être conçus pour permettre l'écoulement de l'eau de fusion* ».
- Au point 6.4.1. la France souhaite que la signification du terme « morceau de poisson » (« split » en anglais) soit explicité. Ce terme concerne-t-il uniquement des morceaux de chairs avec fragments éventuels de peau et d'arêtes ou couvre-t-il aussi les co-produits de filetage, de type arête centrale, tête, viscères, car les niveaux de risques sanitaires liés à ces deux types de matières premières sont différents et pourraient nécessiter de compléter le point « conseils techniques » de manière appropriée.

## **SECTION 13 - Conserve de poissons et de mollusques**

Le terme anglais « shellfish » désigne en français les crustacés et mollusques.

### **Propositions :**

- le titre de la section devrait être « Conserve de produits de la mer et d'eau douce » ou « Conserve de poissons, de crustacés, de céphalopodes et de coquillages »
- vérifier et compléter de manière explicite les références aux autres sections spécifiques concernant les crustacés, les céphalopodes et les coquillages vivants, frais ou congelés, par exemple au niveau du diagramme de fabrication.

## **NORWAY**

### **CODE OF PRACTICE - SALTED FISH**

A fish species is missing in the Appendix VI in CX/FFP 02/5. The species - "Forkbeard" should be mentioned in the 1. Product Designation of the Salted Fish of Family Gadidae.

English name: Forkbeard

Latin name: *Phycis blennoides*

2. Second line in 1. Product Designation of the Salted Fish of Family Gadidae in Appendix VI should be changed to:

Produced from the following . . . of the backbone is removed, washed and saturated with salt.

New line:

Salted fish used for production of dried salted fish shall have reached 95% salt saturation prior to drying.



## **SPAIN (VERSIÓN ESPAÑOLA)**

Se efectúan las siguientes observaciones a la versión en español:

### **1.- Observaciones de carácter general:**

1.1. Debería considerarse a partir de este Código de Prácticas, la elaboración de dos documentos diferentes que recogiesen por separado los aspectos relativos a los peligros sanitarios y a los defectos de calidad por las razones que a continuación se exponen:

El sistema de análisis de peligros y puntos críticos de control (APPCC) evalúa todas las etapas del proceso de elaboración de un producto hasta su llegada al consumidor final, mientras que en el documento presentado se consideran fundamentalmente los aspectos inherentes a cada etapa del proceso llevado a cabo en el establecimiento elaborador.

Por otra parte, los objetivos relativos a la calidad comercial de los productos son completamente distintos a los peligros sanitarios evaluados en el marco de aplicación del sistema de análisis de peligros y puntos críticos de control (APPCC), aunque para ello se utilicen metodologías de valoración semejantes.

Además, el correcto funcionamiento del sistema de análisis de peligros y puntos críticos de control (APPCC), no garantiza que exista un correcto funcionamiento en el sistema de valoración de los defectos aunque el diagrama de flujo de ambos sistemas sea común. Así, puede suceder que la aplicación de medidas correctoras para la subsanación de un defecto, tengan repercusión negativa sobre el control de un punto crítico.

### **2.- Observaciones de carácter específico**

A la sección 1. Ámbito de aplicación.

En la segunda línea donde dice: "...y venta al por menor de pescado y productos pesqueros...", debe decir: "...y venta al por menor de pescado, marisco y productos pesqueros...", al objeto de incluir a los mariscos en el ámbito de aplicación del Código de Prácticas.

A la sección 2.1. Definiciones Generales.

El título de la definición "Agua de mar limpia" se debe sustituir por "Agua limpia".

En la definición de "Punto de corrección de defectos (PCD), primera línea, donde dice: "fase miento en que es posible..." debe decir: "fase en que es posible....".

En la definición de "Pescado limpio", primera línea, donde dice: "...tras la eliminación de la cabeza y las vísceras;" debe decir: "...tras la eliminación de las vísceras".

En la definición de "Análisis de riesgos", primera línea, donde dice: "Proceso de acopio y evaluación..." debe decir: "Proceso de recogida y evaluación..."

En la definición de "Programa de requisitos previos", debe eliminarse al final del párrafo la frase: "y con la legislación pertinente en materia de inocuidad de los alimentos;"

El título de la definición "Establecimiento de elaboración" debe sustituirse por "Establecimiento".

En la primera línea de la definición de "Establecimiento", donde dice: "cualquier tipo de establecimiento donde... debe decir: "cualquier local donde..."

En la definición de "Materia prima", primera línea, donde dice: "...y/o partes de pescado fresco y congelado que pueden..." debe decir: "...y/o partes de pescado que pueden..."

En la definición de “Marisco”, primera línea, donde dice: “...crustáceos, incluidos los cefalópodos, que habitualmente...” debe decir: “...crustáceos, que habitualmente...”.

Se propone incluir la siguiente definición: “Pescado: Cualquier especie de peces, crustáceos, moluscos y cefalópodos que habitualmente se usan para consumo humano.”

#### A la sección 2.2. Pescado, fresco, congelado y picado.

En la definición de “Deshidratación”, quinta línea, donde dice: “..denominarse quemadura de congelador;” debe decir: “denominarse quemadura por frío o de congelación ”.

En la definición de “Filete”, primera línea, donde dice: “tajada de carne...;” debe decir: “porción de carne...”.

En la definición de “Pescado fresco”, segunda línea, donde dice: “...tratamiento de conservación fuera del enfriamiento;” debe decir: “...tratamiento de conservación distinto del enfriamiento;”.

En la definición de “Envasado en atmósfera modificada (EAP)”, se propone sustituir las siglas: “(EAP)” por “(EAM)”.

#### A la sección 3. Programa de requisitos previos.

En el último párrafo donde dice: “Los principios del sistema HACCP...” debe decir: “La metodología del sistema APPCC...”.

#### A la sección 3.1. Diseño y construcción de embarcaciones de pesca y de recolección.

Al final del primer párrafo debe sustituirse la frase: “...del pescado fresco destinado a ser ulteriormente elaborado y congelado.”, por: “...del pescado y productos pesqueros.”.

En el segundo párrafo donde dice: “...y en la recolección de peces cultivados se deberán...” debe decir: “...y en la acuicultura se deberán...”.

#### A la sección 3.2.

Se propone eliminar la expresión “DE ELABORACIÓN” del título de la sección 3.2., quedando redactado del siguiente modo “DISEÑO Y CONSTRUCCIÓN DE LOS ESTABLECIMIENTOS”.

#### A la sección 3.3.1. Para facilitar la limpieza y la desinfección.

En el apartado tercero se sustituirá la palabra “proyectados” por “diseñados”.

#### A la sección 3.4. Programa de Control de la Higiene

En el primer párrafo, primera línea, se propone sustituir el siguiente texto: “En todo momento han de tenerse presentes los posibles efectos sobre la inocuidad e idoneidad del pescado de la recolección...”, por: “En todo momento han de tenerse presentes los posibles efectos que sobre la inocuidad e idoneidad del pescado tiene la recolección...”

En el primer guión del segundo párrafo donde dice: “- evitar la acumulación de residuos y detritos;” debe decir: “- evitar la acumulación de residuos y detritos”.

#### A la sección 3.4.1. Programa permanente de limpieza y desinfección.

Al final del primer párrafo sustituir la palabra “política” por “sistemática”.

Dentro del cuadro del apartado Desinfección, donde dice: “...químicos, aprobados por el...” debe decir: “...químicos, autorizados por el...”.

A la sección 3.7. Procedimientos de identificación y recuperación de los productos.

En el cuarto punto, donde dice: “· en caso de peligro inmediato para la salud...” debe decir: “· en caso de peligro para la salud...”.

A la sección 3.8. Capacitación.

En el último párrafo, quinta línea debe suprimirse la frase: “La aplicación práctica de estos sistemas mejorará cuando la persona responsable del HACCP haya completado con buenos resultados un curso impartido o certificado por la autoridad competente.”.

A la sección 4. Consideraciones Generales para la manipulación de pescado y marisco fresco.

En el segundo párrafo, tercera línea, donde dice: “...los posibles peligros...” debe decir: “...los ejemplos de posibles peligros...”.

A la sección 4.1.1.1. Parásitos.

En la décima línea donde dice: “...reducir el planteado...” debe decir: “...reducir el peligro planteado...”.

A la sección 4.1.1.2. Bacterias.

En el primer párrafo, segunda línea, donde dice: “...microflora de los peces de aleta influyen...” debe decir: “...microflora del pescado influyen ...”.

En el primer párrafo, sexta línea, donde dice: “...peces de aleta es normalmente...” debe decir: “...pescado es normalmente ...”.

En el cuarto párrafo, sexta línea, donde dice: “...peces de aleta ...” debe decir: “...el pescado...”.

A la sección 4.1.1.3. Contaminación vírica.

En el tercer párrafo, segunda línea, se debe sustituir la palabra “negras” por “fecales”.

A la sección 4.3. Reducción al mínimo del deterioro del pescado – manipulación.

En el punto quinto donde dice: “..., deberá mantenerse en el nivel más bajo posible la exposición...” debe decir: “..., deberá evitar al máximo la exposición...”.

A la Sección 5.

En el título debe cambiarse la palabra “RIESGOS” por “PELIGROS”.

En el cuadro 5.1., apartado “Ingredientes”, en la columna correspondiente al “Objetivo” se propone sustituir el texto por el siguiente:

<b>Ingredientes</b>	Enumerar toda sustancia añadida durante la elaboración. Sólo podrán utilizarse ingredientes autorizados para el consumo humano.
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En el cuadro 5.1., apartado “Envasado”, en la columna correspondiente al “Objetivo” se propone sustituir el texto por el siguiente:

<b>Envasado</b>	Enumerar todas los materiales de envasado. Sólo podrán utilizarse los materiales autorizados para uso alimentario.
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En el cuadro 5.3., apartado “Virus entéricos”, en la columna “Biológicos”, se propone sustituir la palabra “Rotovirus” por “Rotavirus”.

En el cuadro 5.3., apartado “Toxinas biológicas”, en la columna “Biológicos”, se propone sustituir el texto por el siguiente:

<b>Toxinas Biológicas:</b>	Escombrotóxina, enterotoxina estafilocócicas toxinas botulínicas
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En el cuadro 5.4., en el apartado “Biológicos”, en la tercera columna, sexta línea, donde dice: “Producción de estafilotoxina”, debe decir: “ Producción de Enterotoxina estafilocócica”.

En el cuadro 5.7., apartado 2. Almacenamiento de atún congelado”, en la quinta columna, donde dice: “Capacitación y calificación del personal”, debe decir: “Capacitación y cualificación del personal”

#### A la sección 13.2.1. Peligros.

En el apartado “A.2. Toxinas microbiológicas”, sustituir en el quinto párrafo y en la primera línea del sexto párrafo, la palabra “Staphilococcus” por “Staphylococcus”.

#### A la sección 13.3.5.1. Preparación del pescado (viscerado, recorte...)

En el último apartado donde dice: “...una solución de soda, se deberá...” debe decir: “...una solución de sosa, se deberá...”.

### **SPAIN (ENGLISH VERSION)**

#### **1. General comments**

1.1 On the basis of this Code of Practice, separate documents should be developed to address separately the aspects relating to sanitary hazards and quality defects for the following reasons:

The HACCP System evaluates all steps of the processing of a product up to the final consumer, while the current document considers the aspects inherent to each step of the process carried out in the processing establishment

On the other hand, the objectives related to commercial quality are completely distinct from sanitary hazards assessed in the framework of the HACCP System, although they use similar assessment methodologies.

Moreover, the correct operation of the HACCP system does not guarantee that the assessment of defects will function correctly although the flow diagram is common to both systems. It may therefore happen that the application of corrective measures to correct a defect might have a negative impact on the control of a critical point

#### **2. Specific comments**

##### In section 1. Scope

Spanish version only

##### In section 2.1 General Definitions

Clean water , DAP: Spanish version

Dressed : Replace "remaining after heading and gutting" with "remaining after gutting.."

Risk analysis: Spanish version

In the definition of Pre-Requisite Programme, the last part of the sentence should be deleted "and appropriate food safety legislation"

Processing facility, Raw material, Shellfish: Spanish version

It is proposed to include the following definition: Fish: any species of fish, crustaceans, shellfish and cephalopods that are usually used for human consumption

In section 2.2. Fresh, Frozen and Minced Fish

Dehydration, Fillet, Fresh Fish, Modified Atmosphere Packaging: Spanish version

In section 3. Pre-Requisite Programme: Spanish version

In section 3.1.

Replace "of fresh fish intended for further processing and freezing " with "fish and fishery products intended for..".

In the 2<sup>nd</sup> para. , replace "used to harvest farmed fish" with "used in aquaculture..."

In section 3.2.

Delete the expression "Processing " from the title that should read "Facility Design and Construction"

Section 3.3.1 and 3.4.: Spanish version.

Section 3.7. Traceability and Recall Procedures.

In the fourth indent, replace "immediate hazard" with "hazard"

Section 3.8. Training

in the last para. the following sentence should be deleted "The practical application of such systems will be enhanced when the individual responsible for HACCP has successfully completed a course given by or certified by a competent authority."

In section 4.

Replace "potential hazards" with "examples of potential hazards"

Section 4.1.1.1., 4.1.12, 4.1.13, 4.3

Spanish version

Section 5.

Title: Spanish version

In Table 5.1 “Ingredients”, the column "Objectives" should be amended as follows

Ingredients	List all substances added in processing. Only ingredients authorized for human consumption shall be used.
-------------	---

In Table 5.1., Packaging, the column "Objectives" should be amended as follows:

Packaging	List all packaging materials. Only packaging material authorized for food used shall be used
-----------	--

In Table 5.3 , 5.4, 5.7, 13.2.1, 13.3.5.1: Spanish version

## **THAILAND**

### **(1) SECTION 2.1 GENERAL DEFINITIONS**

- **Chilled water**

Chilled water is used for washing and for cooling down the temperature of raw materials. Chilled water may be conveyed to the washing area by pipe. Alternatively, water in the washing area can be chilled by the addition of ice in big tubs of water.

For tropical countries, it is rather difficult to control the temperature to as low as 0°C due to the high surrounding temperature. It would be more practical, however, to control the temperature of the water to not higher than 10°C.

We, therefore, would like to change the definition of *Chilled water* to be as follows:

“**Chilled water** is clean water in which the temperature is maintained *at not higher than 10° C* or slightly colder by the addition of ice.”

#### ● Defect

We are of the opinion that the labelling provision is a tool to eliminate fraud and misleading information to consumers and does not concern the essential qualities or compositions of a product. Moreover, labelling is not considered by Codex Products Standards as a defect for defective. Therefore, labelling should not be identified as a potential defect.

### (2) Section 3.7 Traceability and Recall Procedures

Since Codex Committee on General Principles is in the process of considering traceability and has not yet reached the conclusion, this section should be placed in the brackets or deleted. Recall Procedure, moreover, should include the trace back process for finding out problem and taking back all questionable products.

### (3) Section 5.1 HACCP Principles

#### Figure 5.1 Summary of how to implement a HACCP and defect analysis

- *Step 1 Review HACCP Based Plan* should be deleted.
- An arrows should be added between *steps 12* and *Review HACCP and DAP plans (section 5.3.10)*

#### Table 5.1 A product description for Canned Tuna in Salted Water

- The 2<sup>nd</sup> column of the 3<sup>rd</sup> row (*Objective of Important final product characteristics*)

Since the objective of the canning process is to destroy not only microbial flora but also the spore-forming bacteria especially *Clostridium botulinum*, we would like to propose some changes in the *objective* to read as follows:

“List characteristics that affect product safety and essential quality, especially those that influence microbial flora *and spore-forming bacteria such as Clostridium botulinum*. “

### (4) Section 6 Aquaculture Production

#### Section 6.3.4 Harvesting

##### Potential Defects: Physical damage, stress

We are of the opinion that it is rather difficult to identify the physical damage caused by fish stress from the damage caused by the struggle of fish during harvesting. We, therefore, would like to propose the following:

- To delete *stress* from *Potential Defects*
- To delete the first bullet (i.e. *Quality defects can occur in fish that are subject to stress*), and
- To amend the second bullet (i.e. *Appropriate harvesting techniques should be applied to minimize physical damage*) to read as follows:
  - “Appropriate harvesting techniques should be applied to minimize **fish stress** and physical damage.”

### (5) Section 8.1 Finfish Preparation

#### 8.1.2 Chilled Storage (Processing steps 2 & 14)

The fish awaiting further processing (step 2) cannot be kept in chilled storage for a long time. The temperature of 10 °C could control pathogen growth and toxin formation in the fish only for a certain period, for example *Clostridium botulinum* type E for 24 hours, pathogen strains of *E.coli* for 14 days, *Listeria monocytogenes* for 2 days, *Salmonella* for 14 days and *Vibrio parahaemolyticus* for 21 days. Moreover, according to a study on the fish decomposition in the tropical region, bacteria in tropical zone mostly are mesophile and the autolysis due to enzymatic activity within the fish is sensitive and less activated by the lowering of surrounding temperature.

Thailand is of the opinion that it would be safe to widen the range of temperature to not higher than 10 °C. We, therefore, would like to propose that the second bullet (i.e. *The facility should be capable of maintaining the temperature of the fish between [0°C - +4°C]*) should be amended to read as follows:

**“The facility should be capable of maintaining the temperature of the fish *at not higher than 10°C or at appropriate temperature to minimize the decomposition and pathogens growth.* “**

Additionally, section 9.2.2 *Chilled Storage for Frozen Surimi* and section 15.2.1 *Chilled Storage for Cephalopods* should be amended accordingly.

## **UNITED STATES**

### **Comments on Part I, Code Of Practice for Fish And Fishery Products, Draft Sections; 1, 2.1, 2.2, 2.9, 3-6, and 13.**

**Title, Code of Practice for Fish, Shellfish, and Their Products**, change the title to "**Code of Practice for Fish and Fisheries Products.**"

Reason: The definitions within the code describing the animal groups from which food products are derived are for fish and shellfish. For "fish", the definition is, "means any of the cold blooded aquatic vertebrates [and aquatic invertebrates]. Aquatic mammals and amphibians are not included;"

The definition for shellfish is, "means those species of molluscs and crustaceans including cephalopods that are usually used as food;"

The US finds that the change in the title and the present two definitions for food animals covered by the code have produced some difficulties of their own.

First, with respect to the vertebrates covered by this code as set forth in the definition of "fish", the US believes that, to be consistent with the apparent intent, the exclusions should include birds and reptiles as well as mammals and amphibians. (Note, any future frog, turtle, alligator, and duck egg or meat standards would be excluded from this code.)

Second, the definition of "shellfish" poses awkwardness and the US suggests using the terms "molluscan shellfish" (to include cephalopods) and "crustacean shellfish" throughout the document, with these terms included under General Definitions.

Third, and most importantly, the scope of the code would be limited by the revised title and the proposed definitions to part of the subphylum Vertebrata, the phylum Mollusca, and the arthropod class crustacea. A number of potential standards for aquatic foods derived from these and other phyla would be excluded.

The phylum Echinodermata provides sea urchin roe and dried sea cucumber for international trade. The phylum Cnidaria provides dried jellyfish for international trade, and the phylum Chordata, in addition to the vertebrates, provides the invertebrate tunicates, and (perhaps limited in international trade) the cephalochordata, Amphioxus. The exclusion of these, among other potential aquatic food organisms, from the code appears unnecessarily restrictive.

At this time it is true that the standards covered by the code are restricted to finfish, crustacea, and mollusks. However, the US suggests that the title be phrased so that the future inclusion of other taxa is possible.

One modification would be to use as the title,

"Code of Practice for Fish, Shellfish, and other Aquatic Animal Foods"

The scope should be the site where the exclusions and potential inclusions are actually described. Thus, an added sentence to the scope such as:

"The scope of this code covers any of the groups of aquatic animals commonly used for food except the members of the vertebrate classes which include amphibia, reptiles, birds, and mammals."

This sentence would provide clarification as to what is and is not included in broad taxonomic terms.

Such an added statement would no longer place the weight of describing the scope onto the definitions of fish and shellfish, as is presently the case.

Finally such changes would justify removing, [and aquatic invertebrates], from the definition of fish, returning that word to its more common meaning. For brevity and accuracy, the definition for fish could be:

**"Fish** means any of the vertebrate classes agnatha, chondrichthyes, and osteichthyes used as food."

In the future should foods derived from members of any of the other phyla, or from the other members of the Chordata (urochordates, hemichordates) not specifically excluded from this code, become subject for development of a standard, they would be covered by this code. The definition for such group could be added to the code along with the acceptance of the standard. However, the revised title will have to be abandoned and another, or the original, title used to provide for such flexibility.

### **Section 2.1, General Definitions**

**Cleaning** - This definition is not consistent with the definition of "Cleaning" in Section 3.4.1.

**Defect Action Point (DAP)**, after ". applied and a" add "**quality (non-safety)...**"

Reason: To emphasize the fact that DAPS is for the control of product, not for control of a food safety hazard.

**Raw Material** - After "parts of fish" insert "**and other ingredients**".

Reason: to be consistent with Figure 13.1.

### **Section 2.2, Fresh, Frozen and Minced Fish (definitions)**

**Candling** - after "passing" add, "light colored."

Reason: Candling is not applicable for dark fleshed species.

**Freezer** - after "designed for freezing" add "**and holding**."

Reason: A freezer may be designed to quickly freeze and also to hold previously frozen product.

**Section 3.1.4, To minimise Damage during Harvesting of Aquacultured Fish**, Following last bullet - add another bullet to read "where fish are held or transported live, care should be taken to maintain factors that affect fish health (e.g., CO<sub>2</sub>, O<sub>2</sub>, temperature, nitrogenous wastes, etc.)"

Reason: These conditions are critical in the transport of live fish for quality purposes.

### **Section, 3.5.2, Personnel Hygiene**

1<sup>st</sup> bullet, after "communicable disease" add "or illness likely to be transmitted through food."

Reason: To conform to the requirements as described in the General Principles of Food Hygiene.

**Sections 3.6, Transportation, 2nd bullet, delete** in its entirety and substitute the following:



"Where appropriate with chilling equipment to maintain chilled fish or shucked shellfish or MAP fish and fish products during transport to a temperature as close as possible to 0° C, live bivalve at a temperature tolerant to the species, and frozen fish, shellfish and their products, to maintain a temperature of -18°C or colder.

Reason: Some live bivalve species can not tolerate 0°C.

**Section 3.8, Training**, delete in its entirety and substitute the following: "Refer to the General Principles of Food Hygiene, Annex, Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Application "

Reason: The HACCP Annex sufficiently covers the training needs and no additional requirements are necessary.

**Section 4.1.1.1, Parasites, first paragraph, 1<sup>st</sup> sentence**, delete " crustaceans" and substitute "shellfish."

Reason: To be consistent with the definition for shellfish in 2.1, which includes crustaceans **and** molluscs. Harmful parasites can be found in squid and other molluscs.

**Cestodes, 1<sup>st</sup> sentence, delete "Diphyllobothrium latum" and substitute " Dibothriocephalus latus (form. Diphyllobothrium latum)."**

Reason: Correct nomenclature.

**Cestodes, second sentence, after "worldwide and" add "both fresh water "**

Reason: These cestodes are also found in fresh water fish.

**4.1.1.2, Bacteria, second paragraph**, examples of indigenous bacteria, **delete** *Listeria monocytogenes* and add "pandemic" before *Vibrio cholerae*.

Reason: *Listeria monocytogenes* is not an indigenous bacteria

**4.1.1.2, Bacteria, second paragraph**, examples of non-indigenous bacteria, Add "*Vibrio cholerae*" as an example of non-indigenous bacteria following "*Pleisomonas shigelloides*".

**4.1.1.2, Bacteria, third paragraph, second sentence**, after "bacteria, thus" add "frequently" and at the end of the second sentence add a new sentence "An exception is the case of scombrotoxin formation, described below."

Reason: Adds clarity and accuracy to the statement.

**Section 4.1.1.4, Biotoxins, second paragraphs, after first sentence, add** the following new sentence: "The tetrodotoxic species responsible for several poisonings, often lethal, are in this category."

Reason: clarity

**Section 4.1.1.4, Biotoxins, third paragraph**, and delete "used species " and substitute, " species being processed."

Reason: clarity

**PSP/DSP/ASP/NSP, 1<sup>st</sup> paragraph, 3<sup>rd</sup> sentence**, delete in its entirety and substitute the following: "The principal toxins are Paralytic Shellfish Poison (PSP) produced by dinoflagellates, notably of the genera *Alexandrium* (which includes some species formerly assigned to *Gonyaulax*), *Gymnodinium catenatum*, and *Pyrodinium bahamense*; Diarrhetic Shellfish Poison (DSP) produced by dinoflagellates of the genera *Dinophysis* and *Prorocentrum*; Amnesic Shellfish Poison (ASP) caused by *Pseudonitzshia* spp. which

produce domoic acid; and Neurotoxic Shellfish Poison (NSP) produced by *Gymnodinium breve* (recently renamed *Karenia breve*)."

Reason: update for technical accuracy

**Section 4.2, Time and Temperature Control, second sentence,** replace "may be" with "is"

Reason: Time and temperature control is the most effective method in controlling the production of scombroid toxins.

**Section 4.2, Time and Temperature Control, last sentence, after " 0°C" add,** "(except live bivalve molluscs)."

**Section 4.2.2, Minimise the Deterioration of Fish - Temperature Control, first bullet, after " 0°C" add** (except live bivalve molluscs)

Reason: Some live bivalve species can not tolerate 0°C.

**Sections 5.3.1, Describe Product, add** "intended use" when describing the product.

Reason: To conform with the requirements as listed in the General Principles of Food Hygiene, Annex, Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Application."

**Table 5.4,** replace histamine with "scombrototoxin" in the "In raw materials." and "During processing..." columns.

Reason: consistency in terminology for the histamine associated toxins in fish - i.e., Scombrototoxins

**Table 5.10;** add "incubation test" in the "Verification" column.

Reason: To include an optional method to verify process schedule.

**Sections 6.1.1, 6.1.2 and 6.2.2, Potential Hazards, after "biotoxin" add** " Scombrototoxin."

Reason: Biotoxin as defined in this code does not include scombrototoxin.

**Section 6.1.3, Frozen Storage, second bullet,** delete "the store" and substitute "the storage chamber."

Reason: clarity

**Sections 6.1.4 and 6.1.5,** delete all references to "histamine" and substitute, "Scombrototoxin".

Reason: consistency in terminology for the histamine associated toxins in fish - i.e., Scombrototoxins.

**Sections 6.3.2, 6.5.1 and 6.5.2, delete** " biotoxins" as a potential hazard.

Reason: Use of potable water to glaze the product makes it unlikely that "biotoxins" as defined in the code will be introduced in the product. It is also not likely that the packaging materials will contain biotoxins as defined in this code.

**Section 13, Processing Of Canned Fish And Shellfish, second paragraph,** delete "rigid and semi-rigid."

Reason: To conform with the terminology used in the Code of Hygienic Practice for Acid and Acidified low-Acid Canned Food, CAC/RCP 23-1979, Rev. 2(1993) which refers to all forms of hermetically sealed containers.

**Figure 13.1, Example of a flow chart for the processing of canned fish and shellfish**, this figure needs editing regarding designation of the reference sections.

**Section 13.1, General - Addition To Pre-Requisite Programme, second paragraph, 3<sup>rd</sup> bullet**, delete in its entirety and substitute the following: "retorts should have a suitable supply of energy, **steam (vapour)**, water and/or air so as to deliver the scheduled process required for sterilization and should be of sufficient size and number to avoid undue delays in production."

Reason: Clarity

**Section 13.1, General - Addition To Pre-Requisite Programme, second paragraph**, add a bullet to read: "Additives designed for boiler maintenance should be appropriate for the purpose and not a potential food contaminant."

**Section 13.3.3, Unwrapping, unpacking (Processing steps 3 & 4)**, add a bullet to read: "Product that is not packaged should be handled in a manner that minimizes contamination."

Reason: Not all products are delivered packaged.

**13.3.5.1 Fish preparation (gutting, trimming...), Potential Hazards**, delete "(histamine)" and substitute "(Scombrototoxin)."

Reason: Consistency

**13.3.5.1 Fish preparation (gutting, trimming...), Potential defects**, after "(viscera, skin, scales" add "bones... in certain products)" and delete "presence of bones."

Reason: Presence of bone in canned sardines or canned salmon is not considered as a hazard or a defect.

**Section 13.4.9.3, Monitoring of Heat Processing Operation, second bullet**, revise it to read "retort temperatures should always be determined from the indicating thermometer", and add a bullet to read: "the temperature recorder should read as close as possible to, but never higher than, the indicating thermometer."

Reason: Necessary for verification of compliance to the scheduled process.

**Section 13.4.10, Cooling (Processing Step 11, 1st bullet**, replace "potable chlorinated water" with "potable sanitized water."

Reason: As written this implies that now or in the future chlorine is the only acceptable sanitizer.

**Comments on Part II, Code of Practice for Fish and Fishery Products, proposed Draft Sections 6, 9,10, 11,12 that are at Step 3.**

## **SECTION 6 - AQUACULTURE PRODUCTION**

**6 Aquaculture Production, 2<sup>nd</sup> paragraph, first sentence**, change to read: "This Section of the Code applies to industrialised and commercial aquaculture production, producing fish, crustaceans and fish roe (i.e., caviar) intended for direct human consumption and hereafter referred to as "fish."

Reason: Sturgeon and Paddle fish aquaculture is undertaken for the production of caviar.

**Figure 6.1, flow chart**, insert an additional arrow from the Veterinary drugs box to the Feed box.

Reason: Veterinary drugs may be administered either directly to the growing fish or through the feed. The flow chart could be more accurate with the addition of an arrow reflecting this.

**6.2 Identification of Hazards and Defects, 1<sup>st</sup> paragraph, last three sentences**, revise to read: "In closed recirculation systems hazards can be even further reduced. In those systems, the water can be constantly purified and reused and water quality can be controlled within safe measures. Therefore there can be reductions in disease outbreaks and mortality rates."

Reason: Closed recirculation systems can also be prone to disease outbreaks and high mortality rates. It may be misleading if the advantages of closed recirculation systems are overstated, especially because they are expensive and require advanced technical skills.

**6.3.1 Feed Supply, bullet 13**, modify this bullet to read: "Farmers should follow feed or drug manufacturers' label instructions on the use of veterinary drugs."

Reason: The instructions referred to may originate from drug as well as feed manufacturers.

**6.3.2 Veterinary Drugs, bullet 2**, modify this bullet to read: "Veterinary drugs should be used according to drug or feed manufacturers label instructions, with particular attention to withdrawal periods."

Reason: The instructions referred to may originate from feed as well as drug manufacturers.

**6.3.2 Veterinary Drugs, bullet 8**, modify this bullet by removing the phrase, "are not released into the surrounding environment" so that it reads: "[When using medicinal products and disinfectants at fish farms, special care should be exercised to assure compliance with environmental standards or policies]."

Reason: Completely eliminating release of these substances would not be possible in some cases, nor is it always necessary in order to comply with accepted environmental standards.

**6.3.2 Veterinary Drugs, bullet 10**, delete the word "average" so that this bullet reads as follows: "[Pre-slaughter control is a method of controlling drug residues in fish. If the drug concentration in tested fish is above the MRL (or in some countries, by an industry imposed lower level), slaughter of the batch has to be postponed]."

Reason: if included, would be more appropriate without reference to an "average" drug concentration. Determining an average drug concentration would be too cumbersome, requiring a properly designed statistical sampling protocol.

**6.3.3 Growing, bullet 10**, move this bullet to section 6.3.1 (Feed Supply) and modify this bullet to read: "Only approved colour additives of the correct concentration should be included in the feed."

Reason: is more appropriate to section 6.3.1 and could refer more specifically to colour additives. This is a reference more to feed than to growing, and not necessarily to the natural colour of main ingredients of the feed, but more so to additives for the purpose of imparting colour.

**6.3.6 Storage and transport of live fish, 1<sup>st</sup> sentence**, remove the reference "to capture" from the first sentence in this section so that it reads: "This section is designed for the storage and transportation of live fish originating from aquaculture facilities."

Reason: Captured fish can more appropriately be dealt with in section 3.6.

## **SECTION 9 - PROCESSING OF FROZEN SURIMI**

### **Section 2.5 Frozen Surimi**

**Surimi-based Products**, change the definition to read: "(analogues) means a variety of products produced from surimi with addition of ingredients and flavour (natural and/or artificial) such as shellfish analogues."

Reason: Not sure what is meant by "surimi gel". Is it a characteristic of surimi or something else that is added? As written, it seems that shellfish analogues are added as well as "surimi gel". The definition for Gel forming ability describes a characteristic.

**9.1.1 Hazards**, the intent of the first paragraph is not clear.

**9.2.1, Raw Fresh and frozen Fish Reception (Processing Step 1), Technical Guidance, 2<sup>nd</sup> bullet**, change last half of the sentence to read: "...instituted to assure that the likely production of scombrotoxin has been controlled from catch to reception."

Reason: Need to provide more specific guidance about type of control needed to assure that the product being received has been handled in a manner that would not support the production of scombotoxin from the time of catch until it arrives at the processing establishment.

**9.2.2 Chilled Storage (Processing Step 2), Technical Guidance, 2<sup>nd</sup> bullet**, suggest a rewrite such as: "raw fish should be stored at 4°C or below." Add another bullet and possibly as the first bullet or a bullet in the Reception step to read: "a lot should be identified by the date of harvest or time of [preservation.]"

**9.3 Meat Separation Process (Processing Step 9), Potential hazards**, add "chemical."

**9.3 Meat Separation Process (Processing Step 9), Technical Guidance, 3<sup>rd</sup> bullet and 4<sup>th</sup> bullet in 9.4** - delete "spread" and substitute "dispersed."

**9.8 Packaging and Weighing (Processing Step 14), Potential hazards**: delete "cross contamination."

Reason: Cross contamination is not a hazard. *Here and in several subsequent comments we wish to distinguish between the hazard and the cause or source of the hazard.*

**9.10 Dismantling Freezing Pan (Processing Step 16), Technical Guidance**, there is no definition for cold storage. Suggest either to define the term "cold storage" or to delete "cold storage" and substitute "frozen storage" or "freezer storage".

**9.12 Boxing and Labelling (Processing Step 18), Technical Guidance**, add a new bullet to read "List of ingredients in the surimi must accompany the product."

Reason: the processor of analogues needs this information to correctly label analogue products.

## **SECTION 10 - PROCESSING OF QUICK-FROZEN COATED FISH PRODUCTS**

### **General Comments**

We recognize that this code includes all fish and fishery products as noted Section 10.2. However there is no reference in Section 10.3.1.1 of hazards specific to shellfish or bivalve molluscs such as toxins and sulfites. We recommend that, where necessary, appropriate references to Section 7 Molluscan Shellfish should be incorporated throughout this section.

**Figure 10.1, flow diagram**, we suggest that this diagram needs to be revised to include the following changes: all raw materials (fish blocks, fish fillets, shrimp, bivalve, etc.) plus other ingredients (Section 10.3.1.1 & 10.3.1.2) be included in Step 1, then receipt of Packaging (Section 10.3.1.3) would be Step 2; delete Steps 8, 10, and 13, and the references to (receipt 10.3.1.2 and storage 10.3.2.2), however, retain the boxes. They are an integral part of step 9, step 10 and step 13 respectively; step 20 in the diagram is "Preparation". We assume this would apply to preparation of all product other than block frozen raw fish blocks. There is no Section addressing this step. As a result of the revision the consequential changes should be made throughout this section.

Delete all references to Appendices throughout the body of this section.

**10.3 Processing Operations**, include references to: Section 4 Handling Fresh Fish and Shellfish; Section 7 Molluscan Shellfish and Section 8 Processing Fresh, Frozen and Minced fish.

**10.3.1 Raw Material Reception, 1<sup>st</sup> paragraph**, delete the text in square brackets.

**10.3.1.1 Fish, *Potential hazards***, delete "decomposition" and add "Scombrototoxin, Sulfites", and in *Potential defects* add "decomposition, dehydration, parasites, bones."

Reason: Decomposition is not a hazard and some of the defects listed above are likely to occur depending upon the species and form of product received and processing prior to receipt.

**10.3.1.1 Fish, *Technical Guidance***, Add the following two bullets to read:

- Source documentation for toxins (PSP, NSP, etc.) must accompany all raw bivalve product.
- Confirm if shrimp have been treated with sulfites; mark the lot to be carried throughout the process steps to the packaging and labelling step.

**10.3.1.3 Packaging Material, *Technical Guidance***, Add a following bullet to read:

- Pre-printed labelling should be examined for accuracy.

**10.3.2 Storage of Raw Material, Other Ingredients and Packaging**, add a new subsection titled "**Fish (Chilled Storage).**"

Reason: This step would apply to product received chilled, not frozen, such as shucked molluscs.

**10.3.2.1 Fish (Frozen Storage)**, include a reference to Section 8.1.3 and to 1<sup>st</sup> bullet after "all fish" and "and shellfish (crustaceans and molluscs)."

**10.3.2.2 Other Ingredients and Packaging Materials, 1<sup>st</sup> bullet**, at the end of the sentence add "away from odoriferous materials."

**10.3.3 Unwrapping, Unpacking, *Potential Hazards***, replace "contamination by personnel" with "pathogenic microbial contamination"

Reason: Microbial contamination is the hazard.

**10.3.4.1 Sawing, 1<sup>st</sup> bullet**, at end of the sentence add "and in good repair."

**10.3.4.2 Forming, *Potential Hazards***, add "microbial contamination."

**10.3.5 Separation of Pieces, *potential Hazards***, move "foreign material" to "*Potential Defects.*"

**10.3.5 Separation of Pieces, *Technical Guidance***, add a bullet to read:

- "Remove from production line any broken, misshapen or out of specification pieces."

**10.3.6.1 Wet Coating, Flow diagram**, change the name of Step 9 to read "battering and breading/dry coating."

**10.3.6.1 Wet Coating, *Potential Hazards***, delete "of liquid coating material during storage or being pumped through pipes" and add "microbial growth (staph)."

Reason: Proper identification of a hazard at this step.

**10.3.6.1 Wet Coating, *Potential defect***, add "incorrect batter mixture" and to *Technical Guidance*, add a 1<sup>st</sup> bullet to read:

- Mix batter in a sanitary manner; use potable water; hold at a temperature that will control microbial growth.

**10.3.6.1 Wet Coating, 5<sup>th</sup> bullet**, move the text to become 2<sup>nd</sup> bullet and change "dumping liquid contents" to "discard, clean and sanitize and replace with fresh batter if there is no temperature control..."

**10.3.6.2 Dry Coating, *Potential defect***, add "incorrect coating" and to the *Technical Guidance*, add a bullet to read:

- "Assure that the correct coating is used for the product."

**10.3.8 Re-Freezing**, change the title from "Re-freezing" to "Final Freezing" and add "Refer 8.3.1."

Reason: Adds the requirements for fresh fish since fresh fish are also battered or breaded.

**10.3.9 Packing and labelling**, add a reference to the "Codex General Standard for the Labelling of Prepackaged Foods CODEX STAN 001 - 1985 (Rev. 1-1991)."

**10.3.9 Packing and labelling, Flow diagram**, labelling box should read "Packaging and labelling."

**10.3.9 Packing and labelling, *Potential Hazards***, delete "contamination by personnel" and "foreign material"; add "allergens such as eggs, sulfites, etc."

Reason: The hazard is not the personnel, and foreign material is not likely to be a hazard at this stage of processing.

**10.3.9 Packing and labelling, *Technical Guidance***, Add a bullet to read:

- have a plan to ensure any allergens present in the end product are identified and the end product is labelled accordingly such as sulfites, eggs, etc.

Reason: *Some Fish (shrimp) are likely to be treated with sulfites. The added sulfites are a health hazard and must be listed on the label so the consumer can avoid products that they are negatively sensitive to.*

**10.3.11 Transport of End Product, *Potential Defects***, delete "see Section 3.6" add specific defects such as "thawed product."

Reason: Since Section 3.6 provides guidance for transport, it may provide clarity if actual defects are listed here.

## **SECTION 11 - PROCESSING OF SALTED FISH**

### **General Comments**

It appears the code does not address issues such as size limitation for uneviscerated fish and testing for water phase salt levels.

Throughout this section replace "Histamine" with "Scombrototoxin."

Throughout this section delete "Histamine" as an example under "Potential Defect."

At each processing step, consideration should be given to the length of time product is exposed to temperatures that would support scombrototoxin formation. T/T has a cumulative affect on toxin formation. Therefore, for each subsection, under *Technical Guidance* add a bullet to read:

- " Limit the exposure of scombrototoxin forming fish to temperatures that would support toxin formation by bacteria."

### **Specific Comments**

**Sec. 2.7 - Definitions Barrels** add to read: "A cylindrical container made from wood or plastic or other suitable food contact material with a lid for watertight closure."

**11.1 General, 1<sup>st</sup> paragraph**, add a reference to "**Section 4 General Considerations for the Handling of Fresh Fish and Shellfish**" to provide guidance for parasite hazard controls.

**11.1 General, 4<sup>th</sup> bullet**, add at the end of the sentence "and must have a CCP/step in the establishment's HACCP plan for the control of parasites."

**Figure 11.1, Example of flow chart of a salted fish processing line, Step 5 Grading**, there is no subsection in the draft code that describes this step. Also, the draft code does not address sorting by size before the salting process to ensure even salt levels in each fish. We believe that uniform size of fish in a lot is critical to ensure that the salt level as prescribed is met in all fish for safety and for quality. Sorting by size is also critical with regard to a specified fish volume to #brine volume ratio at Step 15. The time in brine is set by fish meat thickness.

**11.2 Preparing For Salting**, add the following: "For appropriate guidance for Steps 1 through 6, follow the guidance provided by the referenced sections in the Figure 11.1, Example of flow chart of a salted fish processing line, for each step."

At each processing step, consideration should be given to the length of time product is exposed to temperatures that would support scombrotoxin formation. T/T has a cumulative affect on #toxin formation. Therefore, for each subsection, under *Technical Guidance* add a bullet to read:

- " Limit the exposure of scombrotoxin forming fish to temperatures that would support toxin formation by bacteria."

**11.2.1 Splitting, Washing and Rinsing, *Potential Hazards***, add "scombrotoxin."

**11.2.2 Filleting, skinning and trimming, *Potential Hazards***, add "scombrotoxin and parasites."

**11.2.3 Round Fish**, seems to be an incorrect title because Section 8.1.1 -8.1.5. defines gutting as "complete when the intestinal tract and internal organs have been removed."

This seems to imply that uneviscerated fish can be salted; there is no size limit. If so, there would be a potential hazard for *Clostridium botulinum* formation. It is unclear because Round Fish is defined in Section 2 as "ungutted fish with head", however, Sec. 8.1.5, 1<sup>st</sup> bullet suggests complete gutting. Also, Sec. 11.4 SALTING AND MATURING, 1<sup>st</sup> para., 2<sup>nd</sup> sentence indicates that uneviscerated fish is not to be salted. It reads "The fish should be free of remains of the guts, liver and other entrails."

We suggest that this be clarified, such as identify *C. botulinum* as a *Potential Hazard* if uneviscerated fish are salted, or brined, except small species (under 5 inches, 12.5 cm in length) and only if salting or brining can permeate the flesh with inhibitory levels of salt resulting in the attainment of conditions that prevent the growth of *C. botulinum*.

**11.2.3 Round Fish, add following:**

"Potential Hazard: add "*C. botulinum*, and scombrotoxin"

Add Technical Guidance:

- Uneviscerated fish for salting and brining must be less than 5 inches, 12.5 cm in length.
- Limit the time that scombrotoxin forming fish are exposed to temperatures that would support toxin formation by bacteria "

Reason: We suggest to add the above if this section does mean that uneviscerated fish can be salted. The Primary concern that the U.S. has is that the process for salted fish should preclude the formation of *Clostridium botulinum* toxin. The viscera of whole fish is known to harbor *C. botulinum* and its spores. A reduced oxygen tension can exist in the cavity. Also, per the definition in Section 2 for headed and gibbed we



believe there can be enough viscera remaining for *C. botulinum* spores to be present and produce with the right time/temperature the formation of toxins.

**11.2.4 Nobbing, *Tech Guidance***, add "Refer. Sec. 4.1.1.1."

**11.3.1 Salt Handling, 2<sup>nd</sup> bullet**, change "infection" to "contamination."

**11.4 Salting and Maturing, 1<sup>st</sup> sentence**, the requirement that fish be "free of guts, liver and other entrails" seems to contradict the requirements under subsection 11.2.3 Round Fish.

**11.4 Salting and Maturing, 2<sup>nd</sup> paragraph**, at the end of the sentence add "including temperature control to prevent scombrotoxin formation or botulinum outgrowth."

**11.4 Salting and Maturing, 3<sup>rd</sup> paragraph, last sentence**, change "infections" to "contamination."

**11.4.1 Brining, *Potential Hazards***, delete "incorrect composition of brine"

Reason: Incorrectly classified as a hazard.

**11.4.1 Brining, *Tech Guidance***, add a bullet to read:

- "The composition of the brine should be established and maintained to avoid hazards and defects."

**11.4.2 Brine Injection, *Technical Guidance***, add two bullets to read:

- "Conduct metal detection here or later in the process."
- "Incorrect composition of brine may cause or allow a hazard or defect to exist."

Reason: inspecting daily for broken tips, for blocking and deflections of needles, may not be sufficient to determine if any product was affected by broken needles or when the break occurred.

**11.4.4 Dry-Salting, *Tech Guidance***, add a bullet to read:

- "Salted fish should be adequately protected from pests and other contamination."

**11.4.6 Maturing**, based on the water phase salt levels fish are classified as Heavily Salted Fish, Medium Salted Fish, Lightly Salted Fish, or Very Lightly Salted Fish. However, Technical Guidance for 11.4.6 Maturing does not indicate to test for water phase salt. It seems that some testing of the finished product would be required.

**11.5.1 Sorting**, we believe that sorting for size and possibly by species would be necessary before salting to ensure even uptake of salt. Also, refer to comments on Step 5.

**11.5.2 Weighing, Wrapping and Packaging**, add the following references:

"Refer: 8.5 Packaging, Labels & Ingredients (reception and storage)  
8.4.4 Wrapping and Packing  
8.2.4 Metal Detection"

**11.5.2 Weighing, Wrapping and Packaging, *Potential Hazards***, add "Metal."

**11.5.2 Weighing, Wrapping and Packaging, *Tech Guidance***, add a bullet:

- "Conduct metal detection if not done earlier."

## **SECTION 12 - PROCESSING OF SMOKED FISH**

### **General Comments**

It appears that there are areas that have not been included in this code such as:

Bivalve molluscan shellfish for smoking have not been addressed. The issues at receipt would not be the same as those in the Section 8, Processing of Fresh, Frozen and Minced Fish which is referenced for preparation of fish used as raw material for the production of smoked fish.

A reception step for raw fish and shellfish materials is not shown in Figure 12.1 flow chart or included in the document except for referencing Section 8 in the introduction to Processing of Smoked Fish. Step 1, reception must be added to the flow chart and in the body of the document. A fish preparation step must be added. This would be Step 2. This would move the Pre-salting step to Step 3. Step 1 & 2 should reference appropriate sections and list *Potential Hazards*, *Potential Defects* and *Technical Guidance* specific to raw products received and prepared for smoking prior to the pre-salting step.

U.S. would like the Committee to discuss issues related to the use of liquid smoke and labelling of such. In the U.S. only fish smoked by smoke can be named "smoked fish". Adding natural and artificial smoke flavors is acceptable, however, the product can not be called "smoked fish". The product may be called "smoke flavored fish" or if the fish is smoked plus smoke flavor added it could be named "Smoked Fish with Smoke flavor added", for example.

Modified Atmosphere Packaging (MAP) has not been addressed in this process. Smoked fish today is often distributed in MAP. A reference to Section 8.2 for MAP is recommended.

*Clostridium botulinum* has not been addressed as a hazard during process and as a result of type of packaging (anaerobic) such as MAP.

### **Specific Comments**

**Section 12 - introductory paragraphs, 6<sup>th</sup> paragraph**, revise the sentence to read: "Potential hazards and potential defects for the different types of raw materials used for the production of smoked fish **and the type of packaging** are known."

**Section 12 - introductory paragraphs, 8<sup>th</sup> paragraph**, first sentence, after "Section" modify the sentence to read "...8 and molluscan shellfish in Section 7 are valid for the receipt and preparation of fish and shellfish used as raw materials for...."

**Add Steps 1 & 2 as follows and renumber all subsections:**

#### **"12.1 Raw Material Reception**

##### **12.1.1 Fish and Shellfish (Processing Step 1)**

Refer Section 4 General Considerations for Handling; Section 7, Molluscan Shellfish

Potential Hazards: microbial contamination, chemical and biochemical contamination (DSP, PSP, scombrototoxin), heavy metals, parasites,

Potential Defects: parasites, decomposition

##### **12.1.2 Preparation for processing (Processing Step 2)**

Refer Section 4, General Considerations for the Handling of Fresh Fish and Shellfish and Section 8, Processing of Fresh, Frozen and Minced Fish

Potential Hazards: viable parasites

Potential Defects: parasites

Technical Guidance:

- Freeze to control parasites in fish to be cold smoked (Refer 4.1.1.1.)"

**12.1 Pre-Salting (Processing Step 1)**, change to Step 3 and renumber it 12.3.

**12.1 Pre-Salting (Processing Step 1)**, Potential Hazards, following "Microbiological" add "(such as *Clostridium botulinum*, *Listeria monocytogenes* and *Staph*)" and following "biochemical" add "(scombrotoxin formation)."

**12.1 Pre-Salting (Processing Step 1)**, Technical Guidance, at the beginning of the first paragraph add the following: "Fish 12.5 cm and larger must be eviscerated prior to salting" and at the end of the paragraph add "For cold and hot smoked fish in vacuum/MAP packaging, the salt content in the fish should be more than 3.5% in the water phase for control of *C. botulinum*."

Reason: We believe that *C. bot* is a likely hazard in salted uneviscerated fish 12.5 cm and larger in length. *C. bot* is also a likely hazard in smoked fish packaged in modified atmosphere. The viscera of whole fish are known to harbor *C. bot* and its spores. Furthermore, a reduced oxygen tension can exist in the cavity of the fish. Per definitions in Section 2 for headed and gibbed fish, we believe there can be enough viscera remaining for *C. bot* spores to be present and produce with the right time/temperature the formation of toxins.

**12.1 Pre-Salting (Processing Step 1)**, following 2<sup>nd</sup> bullet add a bullet to read:

- "The brine should be held at temperature not to exceed 5°C to control microbial growth."

**12.1 Pre-Salting (Processing Step 1)**, 5<sup>th</sup> bullet, delete "decontamination" and substitute "reconditioned when necessary."

Reason: The Codex Committee on Food Hygiene is proposing the following definition for the term "reconditioning." "Reconditioning: The treatment of water intended for reuse by means designed to reduce or eliminate microbiological, chemical, and physical contaminants, according to its intended use."

**12.2 The Smoking (Processing Steps 2 & 3)**, Potential Hazards, add "parasites, vibrios."

Reason: Parasites will survive cold smoke process. However, if control measures were applied at Step 2 - Preparation, parasites would not be a hazard needing control here.

**12.2 The Smoking (Processing Steps 2 & 3)**, Technical Guidance, 2<sup>nd</sup> paragraph, delete first sentence and replace it with: "In the hot smoking process the temperature in the centre of the product must reach 63°C for 30 minutes."

**12.2 The Smoking (Processing Steps 2 & 3)**, Technical Guidance, 2<sup>nd</sup> paragraph, second sentence, delete "managed" and substitute "monitored."

**12.2 The Smoking (Processing Steps 2 & 3)**, Technical Guidance Add a bullet to read:

- "Processors should consider continuous time and temperature monitoring equipment."

**12.3 Slicing Of Cold Smoked Products (Processing Steps 5 & 6)**, Potential Hazards: add "*Listeria monocytogenes*."

Reason: *Listeria* is a hazard in ready-to-eat foods especially because much handling is involved.

**12.3 Slicing Of Cold Smoked Products (Processing Steps 5 & 6)**, Potential Defects, add "poor or incomplete slicing."

**12.3 Slicing Of Cold Smoked Products (Processing Steps 5 & 6)**, Technical Guidance, add a 3<sup>rd</sup> bullet to read:

- "The slicer should be sharp and well maintained to avoid damaging product."

**12.4 Cooling and/or Freezing (Processing Steps 4 & 9), Potential Hazards, add "Listeria monocytogenes."**

**12.4 Cooling and/or Freezing (Processing Steps 4 & 9), Technical Guidance:** Add a bullet to read:

- "To avoid cross contamination of smoked product from raw products and the environment as the smoked product is removed from the smoking chamber, ensure that the raw and finished product are separated."

Reason: Poor flow of product is a source of cross contamination, such as *Listeria*.

**12.5 Packing of Hot and Cold Smoked Products (Processing Step 7), add "Refer to 8.2, MAP."**

**12.5 Packing Of Hot And Cold Smoked Products (Processing Step 7), Potential Hazards, add "*C. botulinum*, *Listeria* and *Staph*" as examples of microbial contamination and growth.**

**12.5 Packing Of Hot and Cold Smoked Products (Processing Step 7), Technical Guidance, first paragraph.** At the end of the paragraph add "Smoked fish packaged in modified atmosphere (MAP) should include appropriate barriers to prevent *Clostridium botulinum* outgrowth."

**12.6 Labelling (Processing Step 6),** If smoke flavoring is used, guidance will be needed for labelling. See general comments.

**12.7 Storage, Distribution And Retail (Processing Steps 10, 11, &12), Potential Hazards, add "*C. botulinum*."**

**12.7 Storage, Distribution And Retail (Processing Steps 10, 11, &12), Technical Guidance, add "Smoked fish products in MAP should be held and handled at temperatures below 38° F (3.3°C) to prevent possible *Clostridium botulinum* toxin outgrowth."**

Reason: *C. botulinum* outgrowth is reasonably likely to occur in MAP product.

**Comments on Part II, Code of Practice for Fish and Fishery Products, Proposed Draft Sections 7, 13, and 15 at Step 3.**

## **SECTION 7 - MOLLUSCAN SHELLFISH**

### **General Comments**

This code should address the packaging and labelling for shucked molluscs.

### **2.3 Molluscan Shellfish (definitions)**

**Accepted/acceptable/approved,** change the definition to read: "means the growing area or relay area where molluscs can be harvested for direct consumption as determined by the official agency having jurisdiction."

Reason: The definition does not distinguish between harvest for direct consumption vs. harvest requiring a subsequent safety enhancing process (relay, depurate).

### **7.2 Harvesting and Transportation of Live Molluscan Shellfish**

Potential Hazards, change '*phycotoxins*' to "***Phytotoxins***" (throughout the document).

Reason: Appropriate terminology since "phycotoxins" limits the hazard to the toxins from seaweed.

Technical Guidance, add a bullet to read:

- "No animals should be allowed on harvest boats."

## 7.5 Purification of Molluscan Shellfish in Tanks, Floats and Rafts

Delete "Floats and Rafts" from this section.

Reason: Floats and rafts are associated with relaying and are addressed in Section 7.4.

Potential Hazards, change "introduction of pathogenic micro-organisms" to read "microbiological."

## 7.6 Dispatch of Molluscan Shellfish in a Dispatch Centre, change the name of this section to read: "Processing of Live Bivalve Molluscs in a Distribution Centre."

Reason: Distribution Centre, as defined in Section 2, conducts the activities included in this section. However, this section as written addresses only processing and distribution requirements for Live Bivalve Molluscs.

**Figure 7.1 flow diagram,** change the name of Dispatch Centre to Distribution Centre as defined in Section 2.

### 7.6.1 Receptions, Technical Guidance, add guidance for control of viable parasites.

### 7.6.4 Packing, add "and Labelling."

Reason: The 4th bullet gives guidance for labelling live molluscs.

### 7.6.6 Distribution

Potential Hazards, add "microbiological."

Technical Guidance, suggest adding a bullet to read:

- "Temperature during transport should be adequate to control microbial growth."

**2nd bullet,** add "Closed packaging must be of material to allow respiration."

The previous steps address only live bivalve molluscs. Beginning with Section 7.7, the Code details requirements for processing (shucking and purifying with heat). However, there is no section addressing shucking without heat or for handling, packing, and labeling of shucked meat.

We suggest:

- (a) 7.7 Section address Post Harvest Treatment (PHT) for purification to include purifying by heat and other evolving post harvest treatments for safety intended to produce a raw product;
- (b) 7.8 address shucking;
- (c) 7.9 add a section on pasteurization (assuming the product is a cooked product)
- (d) Renumber Section 7.8 to 7.10 documentation; and,
- (e) Renumber 7.9 to "7.11 lot identification and recall procedures."

## 7.7 Heat Treatment/Heat Shocking of Molluscan Shellfish in Establishment, change title to read: "POST HARVEST TREATMENT FOR PURIFICATION."

Reason: Post-harvest treatment of bivalve molluscs is conducted to eliminate, reduce, or limit specified target organisms. These processes represent a relatively new market form but are expected to gain in importance in international trade as a significant enhancement to safety. They are not live, however they are raw and may be in the shell. They are intended to retain the sensory qualities of live bivalve molluscs. These processes may be pasteurization, high-pressure treatment (e.g., 60K lb/6min) and irradiation.

**7.7.1 Heat treatment for purification purposes,** currently this section describes heat pasteurization leading to a cooked product. We are asking for clarification as to the intent of the final product form and use. Is the heat treatment to purify for use as a raw product or to cook?

Add subsection "**7.7.2 Pressure Treatment and other post harvest treatments for purification purposes.**"

This section needs further development to address issues such as: guidance for general for all PHT, Pasteurization/heat treatment for pathogen reduction, high-pressure treatment (e.g., 60K lb/6min), IQF with extended frozen storage for vibrio reduction.

Add a new subsection, "**7.7.3 Packing and Labelling, Storage and Distribution.**"

**7.7.2 Heat shocking of molluscan shellfish followed by packing**, change the number and title to read: "**7.8 Hand and Mechanical Shucked and Heat Shocked Shucking for Raw Product.**"

Add a description for mechanical shucking with the description for heat shocking.

*Potential Hazards*, add "microbiological."

Reason: microbes can be introduced during this process step.

*Potential Defects*, add "cuts and tears."

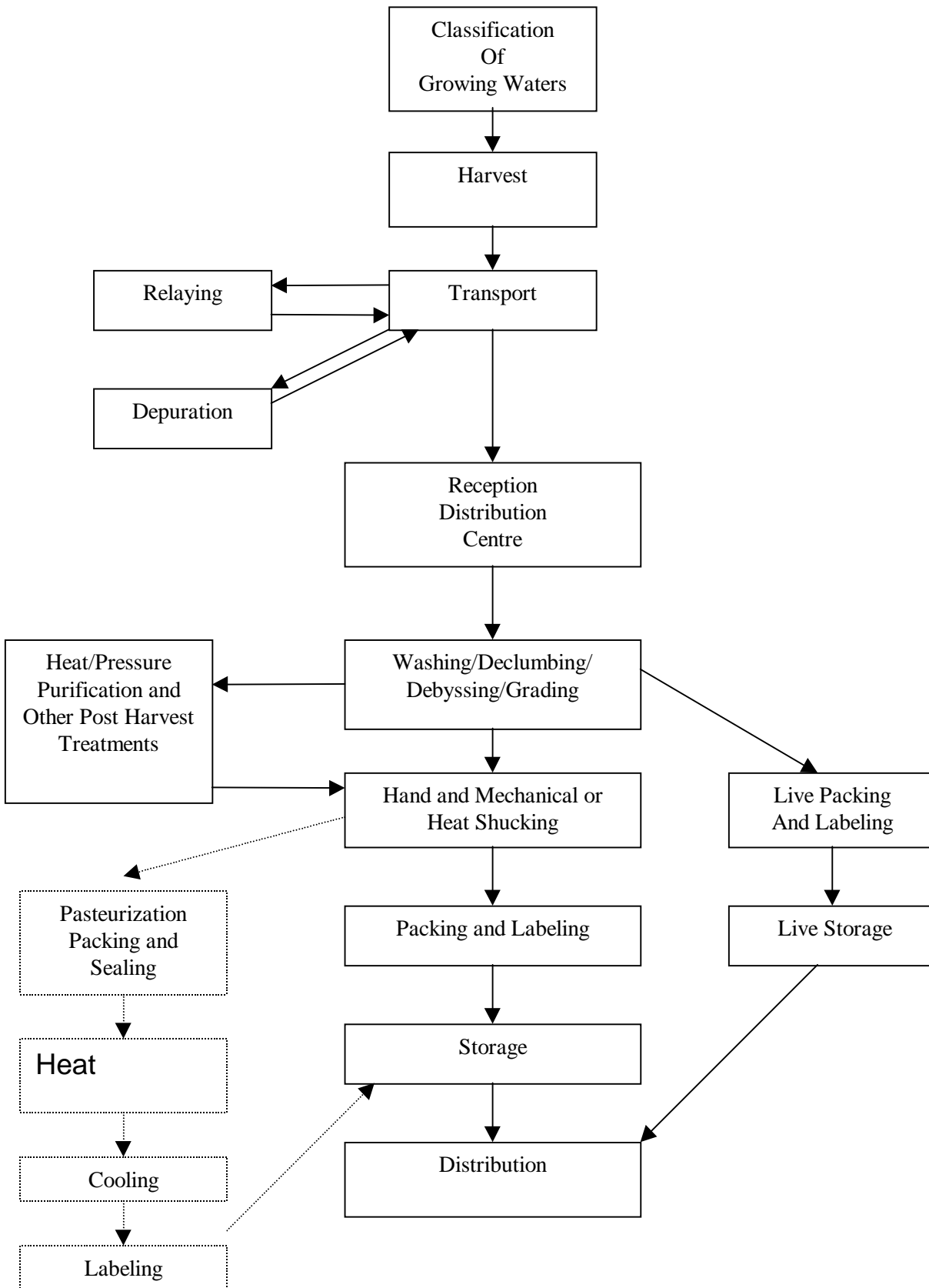
*Technical Guidance*, **5th bullet**, add "meat" to read as follows: "...shellfish **meats** should be packed..." and "...shellfish **meat** should be examined..."

Reason: clarity.

Add a new subsection, "**7.8.1 Packing and Labelling , Storage and Distribution.**"

# MOLLUSCAN SHELLFISH

## Flow Diagram



## SECTION 13 - PROCESSING OF LOBSTERS AND CRABS (Step 3)

**2nd paragraph**, we recommend adding the species; *Pleuronocodes momodon* and *Cervimunida johni*. It is very likely that these two species will be included in the Standard for Lobsters.

**13.1.1 Design and Construction of Equipment and Utensils, 1st bullet**, add the following at the end of the phrase "plan product flow to avoid cross contamination."

**13.2.1.1 Biological Hazards, last paragraph, other defects**, after "ecto-parasites" add "commensals such as barnacles."

**13.3.1.1 Live Lobster Reception (Processing Step 1), Potential Hazards**, change "*Phycotoxins*" to "*Phytotoxins*" throughout the section.

Reason: Phytotoxins include toxic algae, whereas phycotoxins refers specifically to the toxic seaweed.

Technical Guidance, **2nd bullet** add health following human to read "...hazard to human health should not..."

**13.3.1.1 Live Lobster Holding (Processing Step 2), Potential Hazards**, add "drug residue."

Reason: If pound holding is long term, it is possible that drugs are used to protect the health of the lobster.

**13.3.1.6 Chilled Storage Potential Defect**, add "decomposition."

**13.3.1.11 Freezing (Processing Step 12), Technical Guidance**, 1st bullet, delete in its entirety and change it to read: "freeze rapidly to produce high quality tails."

Reason: Requirements as written are too prescriptive and limit how the rapid freezing is accomplished.

**13.3.1.12 Labelling (Processing Step 14), Potential Hazards**, include "sulfites" and in Technical Guidance, add a bullet to read:

- "Check labels to ensure all ingredients are correct, especially allergens." Or this check could be made at Reception, Step 18.

Reason: Sulfites are commonly used and are allergens to a large population.

**13.3.1.14 Additives, Packaging and Label Reception (Processing Steps 16 & 18), Potential Hazards**, specify "sulfites" Technical Guidance, add a bullet to read:

- "Check labels for to ensure all ingredients are correct, especially allergens." Or this check could be made at final packaging and labelling Step 14.

Reason: Sulfites are commonly used and are allergens to a large population.

**13.3.2.2 Cooking (Processing Step 4), Potential Hazards**, delete entirely and replace with "microbiological."

Reason: Microbes are the hazard, cooking to kill the targeted pathogen would be a technical guidance. However, if all of the product is to be pasteurized, is it necessary at this step?

**13.3.2.2 Cooling (Processing Step 5), Potential Hazards**, add "microbiological."

**13.3.2.5 Shucking, De-veining and Washing (Processing Step 9), Potential Hazards**, delete "during shucking and de-veining" and change microbial proliferation to "microbiological."

**13.3.2.6 Chilling, Final Packaging, Labelling (Processing Step 11), Potential Hazards**, add allergens "(Sulfites)."



Reason: Labelling is the control to ensure that consumers sensitive to sulfites can avoid the product.

**13.3.3.4 Cooking (Processing Step 4), Potential Hazards,** delete "*survival of pathogenic micro-organisms due to insufficient cook.*"

Reason: This code is for pasteurized crabmeat; however, the 1st bullet appears to be giving directions for cooking and packaging cooked crab for distribution, by-passing the pasteurization step. Also, it is noted that the 1st bullet sounds like it is referring to cooling after cooking. Is that correct? If so delete/move the requirement to the cooling step.

If the product were not to be pasteurized, the hazard would be pathogenic microorganisms; a technical guidance bullet should indicate a sufficient cook to ensure no survival of pathogenic microorganisms.

**13.3.3.5 Cooling (Processing Step 5), Technical Guidance, 1st bullet,** potable water and clean seawater are not synonymous.

Reason: Can either be used to chill cooked crabmeat if it is not going to be pasteurised?

**13.3.3.6 Sectioning/Meat Extraction (Processing Step 6), Potential Hazards,** add "(Listeria)" and move "presence of shell fragments" to Potential Defects.

**13.3.3.7 Shell Fragments Removing (Processing Step 7), Potential Hazards,** move "presence of shell fragments" to Potential Defects.

**13.3.3.8 Primary-Packaging/Sealing/Final Packaging/Labelling (Processing Steps 8 & 12) Potential Hazards,** delete in its entirety and substitute "microbiological."

**13.3.3.9 Pasteurization (Processing Step 10), Potential Hazards,** delete all and replace with "Microbiological."

## SECTION 15 - PROCESSING OF CEPHALOPODS

### Specific Comments

**15.2.1 Chilled Storage (Processing Steps 2 & 10), Potential Hazards,** why is cadmium migration a hazard in frozen product and not in chilled product? Is this a hazard that can be controlled or should be controlled at reception?

**15.5 Skinning/Trimming (Processing Step 7), Potential Hazards,** add "microbiological"

**15.6 Grading/Packing (Processing Steps 8 & 9), add,** "labelling" to the title and in Figure 15.1. Potential Hazards, add "(sulfites)."

**15.7 Freezing (Processing Step 10), Technical Guidance, 2nd bullet,** add reference to "Section 4.1.1.1."

Reason: This section gives more specific time and temperature for parasite kill.