



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS
Thirty-First Session
Tromsø, Norway
11 – 16 April 2011**

**PROPOSED DRAFT CODE OF PRACTICE FOR FISH AND FISHERY PRODUCTS
(SECTION ON SMOKED FISH)
COMMENTS AT STEP 3
(Argentina, Canada, Cuba, Ecuador, Egypt, Iran, IOFI and Philippines)**

ARGENTINA

Argentina is grateful for the opportunity to make the following comments.

SPECIFIC COMMENTS

In the Figure 12.1, page 4, “**Example of a flow chart of a Hot Smoking, Cold Smoking and Smoking by regenerated smoke preparation Line, including possible slicing operation at the Cold Smoking line**”, Argentina believes a reference to the reception of this material is missing from the “Packaging Material” box and so suggests changing the text to “Packaging Material **Reception**”.

Rationale: The reception of packaging material is a step that needs to be taken into account in the development of a flow chart.

Similarly, the procedures that make up the flow chart are not numbered. This would make it easier to understand the chart and would provide an appropriate order for the procedures as they occur. It would also provide indications for the implementation of HACCP plans.

In **sub-paragraph 12.1.6, “Storage of wood or plant material for smoking”, page 6**, and specifically regarding the “Technical Guidance”, we suggest replacing the text “*Wood or plant material [...]*” with the following:

“Wood or plant material for smoking should be stored in a dry place away from production areas and the chemical storage room.”

Rationale: The storage conditions for combustion material are extremely important for the characteristics of the end product.

In **Figure 12.2, “Example of a flow chart of a smoked dried fish preparation line”, page 9**, the reference to the packaging material reception is missing.

For this reason, Argentina suggests changing “*packaging material*” to “**Packaging Material Reception**”, given that the reception of packaging material is a step that needs to be taken into account in the development of a flow chart.

Similarly, the procedures that make up the flow chart are not numbered. This would make it easier to understand the chart and would provide an appropriate order for the procedures as they occur. It would also provide indications for the implementation of HACCP plans.

CANADA

GENERAL COMMENTS

Canada continues to support further discussions on the Code of Practice for Smoked Fish. To support advancement of the Code in the Codex Step procedure, Canada is pleased to offer the following comments.

SECTION 12.1 – PROCESSING OF SMOKED FISH

Canada notes that this section of the Code of Practice will need to elaborate on other smoked fish products covered by the corresponding standard currently under development.

SPECIFIC COMMENTS

Section 12.1.2 Salting

- *Technical Guidance*, 2nd bullet, 2nd paragraph (regarding the clause: “Histamine formation may. . .”)

Revise to read: “Histamine formation may take place in fish of susceptible species **including species of *Clupeidae*, *Scombridae*, *Scombrosocidae*, *Pomatomidae* and *Coryphaenidae* families**, if the fish is kept at a ~~too high~~ **an elevated** temperature for a prolonged time.”

Reason: According to the report of the 29th Session of the CCFFP, the Committee noted that further elaboration of species susceptible to histamine formation could be considered in the Code of Practice for Smoked Fish (Alinorm 08/13/18, para 145). Family names should be added for consistency with the specific families of histamine forming fishes in existing Codex fish standards.

- *Technical Guidance*, 6th bullet

Delete the 6th bullet: “~~For fish for cold smoking the salt content in the fish should be more than [3%] [3.5%] salt in the water phase to avoid growth of *Clostridium botulinum*.~~”

Add the following paragraph at the end of this *Technical Guidance* section: “**To control, or assist in the control of *Clostridium botulinum*, Annex 2 of the [Proposed Draft Standard for Smoked Fish, Smoke Flavoured Fish and Smoke-Dried Fish] should be considered.**”

Reason: Specific information on salt content of fish is more appropriately contained and already exists in the Proposed Draft Standard for Smoked Fish, Smoke Flavoured Fish and Smoke-Dried Fish.

- *Technical Guidance*, add an 8th bullet

Append: “**To avoid histamine formation and potential microbiological contamination, the flow of products should be maintained in such a way as to avoid undue accumulation and, consequently, temperature abuse.**”

Reason: The suggested text provides further guidance on proper product handling and helps to more clearly describe the hazard.

Section 12.1.11 Cold Smoking

- *Technical Guidance*, 6th bullet

Delete the 6th bullet: “~~The salt content in the water phase must be above [3 %] to assure effective control of growth of *Clostridium botulinum*.~~”

Add the following paragraph at the end of this *Technical Guidance* section: “**To control, or assist in the control of *Clostridium botulinum*, Annex 2 of the [Proposed Draft Standard for Smoked Fish, Smoke Flavoured Fish and Smoke-Dried Fish] should be considered.**”

Section 12.1.13 Slicing

- *Technical Guidance*, 2nd bullet

Delete the 2nd bullet: “~~The slicing process and the transport of the conveyor belts are critical to the hygiene condition of the end product.~~”

Reason: The importance of the sanitation of the slicers and conveyor belts is discussed in the 5th bullet.

Append a new second bullet: “Implementation of an effective sanitation and employee hygiene program is critical. Microbiological contamination of the product from equipment or from the employee may detrimentally affect the hygienic condition of the end product.”

Reason: Editorial for clarification. Although *Listeria monocytogenes* is of utmost concern, other pathogenic microorganisms such as *Staphylococcus aureus* from worker contamination are also a concern during this step.

Section 12.1.16 Storage

- *Technical Guidance*, add a 3rd bullet

Append: “The maintenance of proper storage temperature (chilled or frozen) for both cold and hot smoked products is of critical importance in controlling microbiological growth; in particular growth of *Listeria monocytogenes*, *Staphylococcus aureus*, and *Clostridium botulinum*”

CUBA

Cuba fully agrees with the text presented in the proposed draft CX/FFP 11/31/5 and would be grateful for this opinion being duly noted.

ECUADOR

In the definitions section, it is important to add certain criteria:

1. It is important to emphasise Histamine as it is an indicator of fish quality.
2. The fact that the product will have a longer storage time than for hot smoking should be added to the definition of cold smoked.
3. In the definition of “smoke condensates” also include “liquid smoke”.
4. The smoke can also come in powder form, so it would be good to add the following definition: “*powdered smoke*”, a preparation that contains natural wood smoke absorbed by a water-soluble food-grade powder.
5. Also add: If liquid or powdered smoke is used, authorisation from a competent official organisation should be obtained.

In the description of the processes:

- In salting, the following should be added: for salting small oily fish, like anchovies or small herrings, dry or layered salting may be used. In some cases for large fish, brine injection should preferably be used.
- In hanging and racking: Racks must be clean and oiled with edible mineral or vegetable oil, or coated with Teflon or any other cleaning agent that prevents the fish from sticking, and that has been approved by the competent official organisation.
- In reception of wood or plant material for smoking: specify that dry wood, shavings or sawdust free of dust or any harmful substances, such as wood preservation products and paint, should be used to produce smoke.
- In regeneration of smoke: Write the health conditions.
- It should be emphasised that hot smoking does not necessarily prevent the proliferation of *Clostridium botulinum* type E and the production of toxins.

EGYPT

2.9 Smoked-Fish, Smoke-Flavoured Fish, Smoke-Dried Fish

- “Smoking”.

Egypt proposes the following:

"Smoking" is a process of treating fish by exposing the fish to the smoke produced or generated from incompletely combusted special wood types (hard wood). This process.....

- "Smoke drying"

How to measure this water activity (0.85 or less), so it must be referred to the procedures for measuring this water activity.

- "Drying"

Egypt proposes the following:

"Drying" is a process in which the moisture content in the fish flesh is decreased by exposing the fish to circulating air under controlled conditions or in sun drying (as in some African countries).

- "Hot smoking"

Egypt proposes the following:

Hot smoking "is a process in which fish is smoked at an appropriate combination of temperature and time sufficient to cause the complete coagulation of the proteins in the fish flesh.

Hot smoking is sufficient to kill parasites and their cysts, to

12.1.9 Smoke generation from wood and other plant material

- Smoke generation is created by smouldering (pyrolysis) and care should be taken to ensure that there is no flame development.

Egypt: propose the following:

Smoke generation is created by smouldering incomplete combustion and care.....

12.1.12 Cooling

- when smoking is finished the fish should be cooled rapidly and thoroughly to a temperature which minimizes the microbiological growth in relation to the determined shelf-life.

*Egypt: proposes the following:

When smoking is finished the fish should be rapidly and thoroughly cooled to a temperature which should be reduced to at least 4°C within few minutes in the geometric centre of the product.

This temperature minimizes microbiological growth in relation to the determined shelf-life.

12.1.14 Packaging

- Egypt: proposes adding this phrase to item 12.1.14

In some cases packaging should be used under vacuum or nitrogen gas.

12.1.15 Cooling or Freezing

- If freezing at this process step is carried out to kill parasites, a time / temperature regime has to be chosen as laid down in Annex 1 of the standard for smoked fish, smoke-flavoured fish and smoke – Dried fish (under development).
- Egypt: propose the following

If freezing at this process step is carried out to kill parasites and their cysts a time /temperature.....

IRAN

Definitions:

2.9:

Part 8 (Smoke flavors); "Smoke flavours" are either smoke condensates or artificial flavour blends prepared by mixing **naturally** or chemically-defined substances in known amounts or any combination of both (smoke-preparation)

Salting (see also sections 11.3 and 11.4)

Part 6: For fish for cold smoking the salt content in the fish should be more than [3%] [3.5%] salt in the water phase to avoid growth of *Clostridium botulinum*. Must be changed to" For fish for cold smoking the salt content in the **final product** should be more than [3%] salt in the water phase to avoid growth of *Clostridium botulinum*.

Part 7: The brine should be kept **cooled** and the temperature should be monitored, in particular if the brine is recycled for pickle injection.

The cooled temperature must be mentioned (e.g. 10-15 C)

The last line" To assure proper salting the fish should be of similar size" Should be changed to" To assure proper salting the fish should be of similar size and **same spices**.

Or we can add new sentence" **Mixing of different species of fish for salting and smoking should be avoided.**

12.1.6: Wood or plant material for smoking should be stored in a dry place; the clean must be added Wood or plant material for smoking should be stored in a dry and **clean** place.

Cold smoking 12.1.11

Part 6: The salt content in the water phase of the **final product** must be above [3 %] to assure effective control of growth of *Clostridium botulinum*.

INTERNATIONAL ORGANIZATION OF THE FLAVOR INDUSTRY (IOFI)

The International Organization of the Flavor Industry (IOFI) is an International Non-Governmental Organization in "Observer Status". In this role IOFI has actively contributed to the development of the Codex Guidelines for the Use of Flavourings which were adopted as CAC/GL 66-2008.

IOFI does not intend to interfere with the development of the Code of Practice for Fish and Fish Products (Section on Smoked Fish), but wishes to draw the attention of the CCFFP to differences between the proposed draft Code of Practice and the Guidelines for the Use of Flavourings when it relates to definitions.

Specifically:

1. The definition for 'smoke flavours' in the proposed draft Code of Practice refers to flavours as "either smoke condensates or artificial flavour blends prepared by mixing chemically defined substances in known amounts or any combination of both (smoke-preparations)". This definition presents smoke flavours as the **products** whereas the definition of flavours in the Guidelines for the Use of Flavourings considers flavours as **a sum of characteristics** (Definition 2.1):

Flavour is the sum of those characteristics of any material taken in the mouth, perceived principally by the senses of taste and smell, and also the general pain and tactile receptors in the mouth, as received and interpreted by the brain. The perception of flavour is a property of flavourings.

2. The definition for 'smoke flavourings' in the proposed draft Code of Practice refers to flavourings as "a **process** in which fish or fish preparations are treated with smoke flavour", whereas in the Guidelines CAC/GL 66-2008 smoke flavourings are considered **products** (Definition 2.2: Flavourings are products) and (Definition 2.2.3):

Smoke flavourings are complex mixtures of components of smoke obtained by subjecting untreated wood to pyrolysis in a limited and controlled amount of air, dry distillation, or superheated steam, then subjecting the wood smoke to an aqueous extraction system or to distillation, condensation, and separation for collection of the aqueous phase. The major flavouring principles of smoked flavourings are carboxylic acids, compounds with carbonyl groups and phenolic compounds.

The differences between the draft Code of Practice definitions for (smoke) flavour and smoke flavourings and the CAC/GL 66-2008 definitions for "flavour", "flavourings" and "smoke flavourings" require a review by the CCFFP in order to avoid potential confusion.

PHILIPPINES

The Philippines is grateful of the efforts undertaken by the Netherlands in redrafting the section on smoked fish for the proposed draft code of practice for fish and fishery products. In general, the Philippines agrees with the draft in substance with the following edits/comments.

1. Under definitions, Sec. 2.9 - cold smoking

“Cold Smoking” is a process of treating fish with smoke using a time/temperature combination that will not cause significant coagulation of the proteins in the fish flesh but that ~~will~~ may cause some reduction of the water activity.

Justification: In the absence of scientific data on the reduction of water activity during cold smoking, the word may instead of “will” would be more appropriate.

2. Under Sec. 12.1.2 Salting (Technical Guidance)

Bullet 1:

Typically fish for hot smoking are brine-salted for only a short time ~~for enhancing flavor, using a low to medium strength salt brine.~~

Justification: A low to medium salt brine solution may vary depending on the size of the fish and other conditions. Hence, the recommendation to delete “*low or medium-strength brine*”.

Bullet 2:

Fish for cold smoking ~~are~~ may be salted by dry salting, wet salting or brine soaking, combined salting or by brine injection of a medium strength salt brine to enhance flavour and for safety purposes. To ensure a uniform salt distribution, ~~throughout the fish, it is left~~ kept for up to 24 hours under refrigeration to equilibrate.

Fish species susceptible to histamine formation ~~may develop in fish of the susceptible species, if the fish is~~ should be kept at a ~~too low~~ high temperature for a ~~prolonged time.~~

Bullet 4:

Brine should be replaced as often as necessary ~~according to the environmental conditions and the process.~~

Bullet 7:

The brine should be kept cooled and the temperature should be monitored, in particular if the brine is recycled for ~~pickle~~ brine injection.

~~Where brine is injected special care should be taken for the maintenance, cleaning and disinfection of the equipment (section 11.4.2).~~

Justification: The second statement is covered under GMP.