

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

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PROPOSED DRAFT GUIDANCE FOR HISTAMINE CONTROL IN THE CODE OF FISH AND FISHERY PRODUCTS (CAC/RCP 52-2003)

Comments of Chile, Japan, Kenya, Thailand, Senegal, African Union

Chile

- 1) Cultured salmonids should not be considered as susceptible to Histamine poisoning, this is supported by;
 - a. Currently the test results for Histamine are under 10 mg / kg in finished product, which indicates that the salmonids are not a species that presents high risk for developing dangerous levels of histamine.
 - b. It should be considered that the transport temperatures of the fish from their harvesting areas to processing in processing plants, is controlled and range between 6 ° to -2 ° C.
 - c. Salmon aquaculture develops in cold environments and there are strict temperature controls throughout the production process

General Comments on the document:

- a. The flow chart for the production of fish at risk of scombrototoxin formation does not correspond to those used by salmon aquaculture. Aquaculture is not fishing is a controlled process throughout the production chain. For example transport of fish from the crop is one of the first activities and killing occurs within the processing plant so the risk during the process of histamine formation is insignificant.

Specific comments:

- b. There is a serious concept of salmon nomenclature error applied in **paragraph X4.3 first bullet**, since the Australian Salmon is NOT a salmonid is a tropical fish of the genus *Arripis* that has no relation with fish of the genus *salmonidae*. The salmonid fish are those corresponding to the genus *Salmo*, *Onchorhynchus* and *salvelinus* cataloged as cold water fish (see table of salmonids). So to avoid confusion we propose to use only the scientific name of this specie.

Table of Salmonids

		Temperature (°C)	Reference
<i>Salvelinus alpinus</i>	Arctic char	12-17	
<i>Salvelinus fontinalis</i>	Brook Trout		
<i>Salvelinus namaycush</i>	Lake char		
<i>Oncorhynchus mykiss</i>	Rainbow trout	12-21	http://www.fao.org/fishery/culturedspecies/Oncorhynchus_mykiss/en
<i>Oncorhynchus masou masou</i>	masu salmon		
<i>Oncorhynchus gorbusha</i>	Pink salmon	5.6 to 14.6°C	

Oncorhynchus nerka	Sockeye salmon		
Oncorhynchus keta	Chum salmon		
Oncorhynchus kisutch	Coho salmon	8-15°C	http://www.fao.org/fishery/culturedspecies/Oncorhynchus_kisutch/en
Oncorhynchus tshawytscha	King salmon	7-16	http://www.salmonoid.com/index.html
Salmo trutta	Brown trout	8-16	http://www.fao.org/fishery/culturedspecies/Salmo_trutta/en
Salmo salar	Atlantic Salmon	5-17	http://www.fao.org/fishery/culturedspecies/Salmo_salar/es

Japan

Specific Comments

X.1.1. Catching fish:

- **Critical limits should be established for the time period between death of the fish and the start of chilling that will effectively prevent histamine production. Time of death of the fish may be the time slaughtered onboard, or where the actual time of death is not observed or truly known, an estimated time based on an observable event, such as the time of deployment of a longline when some of the fish are landed dead.**

The time period between death of fish and chilling that will effectively prevent histamine formation can vary based on the ocean and air temperatures encountered, the sizes and species of fish caught, and other relevant factors particular to the harvesting operation. See the FAO/WHO Expert Report (Section 6.1.1 Chilling) for further guidance on establishing time-temperature critical limits for fish after death.

- The time period that nets or hooks are left in the water, and the number and rate of fish caught, should be optimized to allow live landing of fish where practical.

The rate or volume of catch should not exceed the ability of the crew to quickly initiate chilling, and should not exceed the capability of the vessel's chilling system to maintain critical limits for cooling media temperature, or sufficiency of ice.

- **Fish should be removed from nets and hooks as quickly as possible to prevent death or to minimize the period from death until chilling of the fish.**

- **Rough handling, overcrowding and over stacking of fish should be avoided where practical because crushing, bruising, and lacerations of the skin accelerate the spread of histamine-producing bacteria from the gut, gills, and skin into the fish musculature.**

- If captured fish are held in the sea for too long following death, decomposition commences, and histamine can begin to form. The warmer the seawater, the more rapid the decomposition and the greater the risk of histamine formation. Dead fish that exhibit marginalized quality attributes, consistent with exposure to time-temperature abuse, should not be retained on board the vessel, or, if retained, should be segregated and identified properly to allow testing and proper disposition when off-loaded.

In addition, the harvesting methods should be modified in a way that no dead fish with marginal quality will be brought on board.

- Before landing fish, the deck area and equipment should be hygienically cleaned to avoid contamination of fish (see Section 3.4 Hygiene control program), and the chilling medium should be ready and at the target temperature

- ~~———— Fish should be removed from nets and hooks as quickly as possible to prevent death or to minimize the period from death until chilling of the fish.~~

- ~~———— Critical limits should be established for the time period between death of the fish and the start of chilling that will effectively prevent histamine production. Time of death of the fish may be the time slaughtered onboard, or where the actual time of death is not observed or truly known, an estimated time based on an observable event, such as the time of deployment of a longline when some of the fish are~~

landed dead.

● The time period between death of fish and chilling that will effectively prevent histamine formation can vary based on the ocean and air temperatures encountered, the sizes and species of fish caught, and other relevant factors particular to the harvesting operation. See the FAO/WHO Expert Report (Section 6.1.1 Chilling) for further guidance on establishing time-temperature critical limits for fish after death.

● The rate or volume of catch should not exceed the ability of the crew to quickly initiate chilling, and should not exceed the capability of the vessel's chilling system to maintain critical limits for cooling media temperature, or sufficiency of ice.

● Rough handling, overcrowding and over stacking of fish should be avoided where practical because crushing, bruising, and lacerations of the skin accelerate the spread of histamine-producing bacteria from the gut, gills, and skin into the fish musculature.

Rationale: We propose to arrange control measures in order of time (i.e., setting critical limits >>harvesting fish>> handling caught fish >> landing fish)

X.1.3. Chilling and freezing:

Rapid chilling as soon as possible after death is the most crucial aspect of histamine control because bacterial growth and histamine formation accelerate exponentially with time under unrefrigerated conditions. Few prolific histamine-producing bacteria will grow and multiply at refrigeration temperatures, and the growth rates of those that do are much reduced.

● **Critical limits and monitoring methods and frequencies should be established for the onboard chilling/freezing process. For example, limits may be established for maximum loading volumes and rates, maximum starting temperature for RSW and/or brine tanks, and monitoring frequencies to ensure an adequate chilling environment is maintained for the duration of the chilling operation for each harvested set of fish.**

● Sufficient ice to completely surround each fish, or preferably, ice/seawater slurries or refrigerated seawater (RSW) should be used to bring the internal temperature of fish to below 4°C as quickly as possible after death to slow bacterial growth and enzymatic activity.

● **Where ice is used, fishing vessels should have sufficient ice for the amount of fish that could be caught and for the potential length of the fishing trip. For further information see FAO Fisheries Technical Paper 436 (The use of ice on small fishing vessels)**

● **For larger eviscerated fish, the belly cavity should be packed with ice, or other cooling media, for more rapid chilling of this bacteria-laden region of the fish.**

● Freezing is more effective than refrigerated chilling and maintaining chilled temperatures in preventing histamine formation. It is good practice to gut the fish before freezing. Freezing to -18 °C, or below, will stop the growth of histamine-producing bacteria and will prevent any preformed histidine decarboxylase enzymes from producing additional histamine.

● Note that freezing does not detoxify preformed histamine, nor does it effectively eliminate histamine-producing bacteria and enzymes, which can become active when temperatures increase again, such as during processing or meal preparation.

● Crew members responsible for chilling should provide feedback to the catching operation to assure that the rate or volume of incoming fish does not exceed the ability to rapidly chill the fish within established time-temperature critical limits and maintain the fish in a chilled state.

● Care should be taken to manage the chilling of dead fish to ensure that none are inadvertently left exposed on deck past the critical time limit for the conditions.

● Refrigeration and other chilling equipment should be in good repair, and operated in a manner that quickly chills fish without physical damage. For example, fish should be packed loosely in ice slurries, RSW, and brine tanks to allow good circulation and rapid cooling.

● Where ice is used, fishing vessels should have sufficient ice for the amount of fish that could be caught and for the potential length of the fishing trip. For further information see FAO Fisheries Technical Paper 436 (The use of ice on small fishing vessels).

● For larger eviscerated fish, the belly cavity should be packed with ice, or other cooling media, for more rapid chilling of this bacteria-laden region of the fish.

● Critical limits and monitoring methods and frequencies should be established for the onboard chilling/freezing process. For example, limits may be established for maximum loading volumes and rates,

maximum starting temperature for RSW and/or brine tanks, and monitoring frequencies to ensure an adequate chilling environment is maintained for the duration of the chilling operation for each harvested set of fish.

Rationale: We propose to arrange control measures in order of time (i.e., setting critical limits >>chilling and freezing fish>> providing feedback to the catching operation, etc.)

X.2.4.2. Histamine testing, sampling strategies, next to the 4th bullet (new 5th bullet):

- More sample units should be tested whenever vessel records, sensory analysis, or fish temperatures indicate possible lapses in time - temperature control that could result in elevated histamine.
- **It is best to test the raw fish material upon arrival from the fishing vessels, where individual loin sections can be identified. As the fish get processed into various market forms, or product from different vessel lots gets comingled, assessments of the suitability and safety of the fish from the individual fishing vessels becomes more difficult and less effective.**

Rationale: The bullet is moved here from Section X.2.4.3 because it fits better under this section.

X.2.4.3 Histamine testing, analytical methods, 1st bullet:

- ~~It is best to test the raw fish material upon arrival from the fishing vessels, where individual loin sections can be identified. As the fish get processed into various market forms, or product from different vessel lots gets comingled, assessments of the suitability and safety of the fish from the individual fishing vessels becomes more difficult and less effective.~~

Rationale: Refer to the comment above (transferred to the section X.2.4.2).

X.2.4.3. Histamine testing, analytical methods, 4th and 5th bullets:

- The part of the fish selected for testing will significantly affect the test results. Test portions should be cut from the head-end of the lower loin near the gills because that area has the highest probability of elevated histamine in abused raw fish. Sufficient representation (~~e.g. approximately 250 grams~~) of fish muscle, should be collected to prepare for analysis. For smaller fish, in addition to the lower anterior loin portion, the upper anterior loin, and the mid-section of the lower loin, in that order, can also be collected, and for very small fish, multiple fish may need to be collected to acquire a representative sample unit of fish muscle (~~e.g. approximately 250 grams~~). The entire sample unit should be thoroughly blended so that the smaller aliquot used for the analytical method is representative of the entire sample unit.
- To screen deliveries more economically, sample units from different fish can be optionally combined (composite sample) to reduce the number of histamine analyses required, provided that the histamine level critical limit is lowered proportionately. For example, after independently grinding each of 3 individual sample units, a portion (~~e.g. 100 grams from each of the 250 gram ground units~~) can be further blended together and used for a single composite sample analysis. In this case, the critical limit must be... by the analytical method in use.

Rationale: We propose to delete examples of the sample weight. The weight of a sample unit should be different depending on the sampling strategy and the testing method used. Examples of sample weight should be considered in the future work on sampling plan.

X.4.2. Processing, time and temperature control, new proposal between the 6th and 7th bullets:

- Controlled product flow and batch monitoring is an effective strategy to ensure product is not subjected to unacceptable time-temperature exposures. For example, periodically measure the ambient temperature and the time for a marked batch to begin and complete the processing step.
- **Only the quantity needed for processing should be thawed to avoid refreezing unused portion. Thawed raw materials should be processed as soon as possible.**
- Air thawing of raw material should occur at refrigerated temperatures to prevent excessive warming of the surface of the fish. Immersion in circulating cold water or spraying with cold water may be used to shorten thawing time. For re-chilling and refreezing, see Subsection X.1.3.

Rationale: The guidance for safe thawing should be added.

X.4.6. Monitoring records, the 1st bullet, new sub-bullet point between 2nd and 3rd:

- Processing establishment monitoring records may include, but are not limited to:
 - Transport vehicle or transport vessel temperature log or adequacy of ice, and fish internal temperatures
 - Temperatures and exposure times of product during unrefrigerated processing steps

- **Temperatures and times for heat processing (section X.4.3)**
- Critical control point monitoring records for other validated methods used to control histamine formation in processed fish
- Refrigerated storage temperature logs.

Rationale: We propose to add a major example of monitoring records in the heat processing (*Section X.4.3*). This should be added in addition to the original 3rd sub-bullet (now 4th sub-bullet).

Kenya

GENERAL COMMENTS:

1. The document should be reviewed to make provisions to cater for artisanal industry. However, the provisions of the text on GHP and HACCP based approach are useful in the prevention of histamine formation in fish; thereby ensuring the reduction of the incidences of scombrototoxin fish poisoning. The proposed application of HACCP based approach for all vessels may not be feasible and may be difficult to implement in artisanal fishing industry because they are involved in primary production.
2. The document did not comprehensively address all the steps along the food chain equally. It focuses more on the harvesting and storage than on transportation, processing and distribution. We propose that the document provides more elaboration and guidance on handling, processing and distribution of fish to prevent histamine formation.
3. The document focuses more on the guidance and application of HACCP for histamine control in fish. We propose that this document make more provisions for the use of GHP for control of histamine in fish

Issue: Par. X.1: Implementation of HACCP based approach by fishing vessels

Comment: Kenya supports HACCP system at the level of fishing vessels that process their products on board by factory fishing vessels but does not support the proposed requirement for the implementation HACCP by all fishing vessels. GMP and GHP should be encouraged and implemented in artisanal fishing.

Rationale: The application of GHP and GMP in artisanal fishing is sufficient to prevent production of high levels of histamine. Artisanal fishing is primary production activity and GMPs and GMPs are more feasible to implement than HACCP. The factory fishing vessels should be more equipped to implement HACCP.

Issue: Par. X.1: Training of responsible crew in HACCP Principles

Comment: Kenya supports the training of fishing industry members in GMP, GHP and HACCP Principles to control histamine formation.

Rationale: The training of the fish industry players will enhance capacity to control of histamine formation while improving the food safety.

Figure X.1: Example flow chart for the production of fish at risk of Scombrototoxin formation

Issue: Flow chart illustrating implementation of HACCP Principles for the production of fish at risk of scombrototoxin formation.

Comment: Kenya supports the current flow chart in the text as useful. However we propose the chart to be annexed. We propose the improvement of the flow chart that monitoring and records should apply to all the processing steps. We propose inclusion of Chilling **and/or** freezing at that process step.

Rationale: Monitoring records will inform the effectiveness of the control processes and provide timely intervention.

Issue: Par. X.2.4.1: Histamine testing, achievable histamine level

Freshly harvested scombrototoxin-forming fish typically have histamine levels below 2 mg/kg, and food business operators that apply HACCP principles can achieve a histamine level lower than 15 mg/kg.

Comment: Kenya notes the histamine levels in freshly harvested fish as 2mg/kg and that the business operators that use HACCP can achieve as 15mg/kg. We do not support referenced levels of histamine of 2 mg/kg freshly harvested fish and 15 mg/kg in processing and propose the CCFH seek advice of JEMRA.

Rationale: The reference to 2mg/kg and 15mg/kg in the text may lead to misunderstanding and can be considered as critical limits in the industry; furthermore consultation is needed to consider variations in climatic conditions and differences in conditions under which fish is harvested and processed globally.

Additional comments

Para 36 and 48: whole

Position: remove square brackets

Para 40. Such systems should also specify tolerable limits for time and temperature variations. ~~[Critical]~~ Temperature recording devices should be checked for accuracy, ~~[and where appropriate calibrated]~~ at regular intervals.

Position: delete critical and open square brackets

INCOMING MATERIALS

Para 49.

Only raw materials and other ingredients that are fit for purpose should be used. Incoming materials including food ingredients should be ~~purchased~~~~[procured]~~ according to specifications and their compliance with food safety and suitability specifications should be verified. Incoming materials or ingredients should, where appropriate, be inspected and sorted before processing. Where necessary, laboratory tests should be conducted to verify food safety and suitability of raw materials or ingredients. No incoming material should be accepted by an establishment if it is known to contain chemical, physical or microbiological contaminants which would not be reduced to an acceptable level by controls applied during sorting and/or ~~[where appropriate]~~ processing. Stocks of raw materials and ingredients should be subject to effective stock rotation.

Comment: in the second statement we propose to delete the word 'purchase' and open the square brackets for ~~procured~~ since procurement is a involves the entire process which include purchase.

We also propose to delete the word 'where appropriate' since 'where appropriate' is an open statement.

Para 50: Where appropriate, reusable packaging material should be suitably durable, easy to clean and, where necessary, disinfect.

Comment: we propose the addition of material in the clause.

Water supply

Para 51. An adequate supply of potable ~~[or clean]~~ water with appropriate facilities for its storage, distribution and temperature control, should be available whenever necessary to ensure the safety and suitability of food. Potable water should meet the requirements as specified in the latest edition of WHO Guidelines for Drinking Water Quality, or water of a higher standard.

Comment: we propose the deletion of 'or clean' and the use of potable water as referred to by WHO.

Ice and steam in direct contact with food

Para 57. Ice ~~[in direct contact with food]~~ should be made from potable water. Ice and steam should be produced, handled and stored so they are protected from contamination.

Comment: we propose to open the square brackets and accept the clause as is.

Para 61:

SECTION III: ESTABLISHMENT MAINTENANCE, SANITATION AND PEST CONTROL

Comment: we propose the need to define 'sanitation' for clarity.

Para 63. Cleaning should remove food residues and dirt which may be a source of contamination ~~[including with allergens]~~. The necessary cleaning methods and materials will depend on the nature of the food business. Disinfection may be necessary after cleaning.

Comment: we propose the deletion of the 'including with allergens' within the square brackets since if cleaning is thorough then allergens will be rid-off.

Para 66. ~~[Separate cleaning equipment, suitably designated, should be used for highly contaminated areas e.g. toilets]~~

Comment: we would like to rephrase the sentence to read as follows "separate cleaning equipment for highly contaminated areas such as toilets and food areas"

Para 68. Cleaning procedures will involve, where appropriate:

Bullet 2: applying a detergent solution to loosen soil and bacterial film and other microorganisms (cleaning);

Comment: We propose addition of and other microorganisms.

Para 69: Sanitation ~~[Cleaning and disinfection]~~ Programmes

Comment: we propose deletion of 'cleaning and disinfection' in the square brackets since sanitation includes cleaning and disinfection.

Para 71. Sanitation programmes should be monitored for effectiveness and periodically verified by means such as audits or pre-operational inspections. Where appropriate, microbiological sampling and testing of the environment and food contact surfaces should be carried out to verify the effectiveness of cleaning programmes. ~~[Insert additional examples of types of monitoring e.g. conductivity, pH, water temperature, cleaning agent concentration.]~~ Cleaning [Sanitation] and maintenance procedures should be regularly reviewed and adapted to reflect any changes in circumstances and documented as appropriate.

Comment: we propose the deletion of the examples above since they are not exhaustive. We also propose the deletion of cleaning and to open the brackets since cleaning is included in sanitation.

Para 75. Establishments and surrounding areas should be regularly examined for evidence of infestation. Detectors and traps {e.g. insect light traps and baits stations} should be designed and located so as to prevent potential contamination of materials, products or facilities.

Comment: we propose the deletion of square brackets.

Para 77-78 Waste Management

Para 77. Suitable provision should be made for the removal and storage of waste. Waste {should as far as possible be collected in covered containers and should} not be allowed to accumulate and overflow in food handling, food storage, and other working areas and the adjoining environment except so far as is unavoidable for the proper functioning of the business.

Para 78. Waste stores should be kept ~~appropriately~~ clean and free of pests ~~and be resistant to pest infestation}.~~

Comment: we propose the opening of square brackets in both para 77 and para 78 and deletion as indicated.

Rationale: for clarity.

Para 83. Food handlers should maintain a high degree of personal cleanliness and, where appropriate, wear suitable protective clothing, head {and beard} covering, and footwear. {Controls should be implemented in order to prevent cross-contamination by food handlers through adequate hand washing and, where necessary, wearing gloves. If gloves are worn, appropriate measures will also need to be applied to ensure the gloves do not become a source of contamination.

Comment: we propose the opening of the square brackets and the additions as presented.

~~**Para 85.** When required, personnel should wash hands with soap and water by wetting hands with water and applying sufficient soap to cover all surfaces. Rinse hands with clean, running water and dry thoroughly with a single-use towel or other method that does not re-contaminate hands. Multiple use cloth drying towels should not be used. Hand sanitizers should not replace hand washing and should be used only after hands have been washed.~~

Comment: we propose the opening of the square brackets and rephrase para 85 as follows. "Personnel should wash hands with soap and water covering all surfaces, rinse with clean running water and dry thoroughly with single-use towel, thereafter sanitize the hands".

Para 86. People engaged in food handling activities should refrain from behaviour which could result in contamination of food, for example:

- **Strong perfumes**

Comment: we propose the addition of a bullet on strong perfumes which can affect the organoleptic quality of some foods.

Para 87. Personal effects such as jewellery, watches, pins or other items ~~{such as like~~ false nails and eye lashes} should not be worn or brought into food handling areas. ~~if they pose a threat to the safety and suitability of food.~~

Comment: we propose the opening of the square brackets and deletion and addition as presented.

Thailand

Figure X.1 Example flow chart for the production of fish at risk of scombrototoxin formation

We would like to propose adding 'descaling' in X.1.2 as follows:

X.1.2 Gutting, gilling and **descaling** (optional)

Rationale: Some species specified in Table 2.3 have scales so descaling might also be one of the operations done on harvest vessel. If the proposal is accepted, the sub-heading of X.1.2 in page 6 should also be changed.

X.1.3 Chilling and freezing (bullet point 1)

We would like to propose adding the following sentence at the end of the bullet as follows:

As appropriate, fish may be chilled and maintained between 4 °C and 10 °C with the combination of mixing with salt to ensure water phase salt at 10% or higher.

Rationale: The practice is also accepted in fish at raw material reception of Section 18 Processing of Fish Sauce in Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003).

X.1.5 Monitoring records (fishing and transfer vessel)

We would like to propose the following amendments:

- The records kept depend on the operation and may include:
 - Ocean water temperature, where applicable, and air temperature
 - Dates and times of earliest fish on board death, and times to get fish into appropriate chilling media

Rationale: It may not be necessary for tropical zone where the temperature of air and water does not vary significantly. Furthermore, we think the words 'earliest fish death' are unclear.

X.2.4.1 Histamine testing, achievable histamine level (bullet point 1)

Freshly harvested scombrototoxin-forming fish typically have histamine levels below 2 mg/kg, ~~and food business operators that apply HACCP principles can achieve a histamine level lower than 15 mg/kg.~~

Rationale: The specification of limit at 15 mg/kg is too limited. Also, X.2 is about reception of fish (receiving establishment), thus mentioning the level of histamine for entire distribution chain may not be appropriate.

X.2.4.1 Histamine testing, achievable histamine level (bullet point 3)

Histamine achievable levels at vessel reception should be lower than the achievable levels in product further along the distribution chain because the presence of histamine-forming enzymes, ~~as evidenced by histamine levels approaching 15 mg/kg,~~ is likely to result in additional increases with time and exposure to non-refrigerated temperatures during further processing and handling.

Rationale: Specifying the limit is too limited. Flexibility should be given to FBOs on how to handle or manage their raw materials.

X.4.3 Heat processing (bullet point 1)

We would like to amend the first bullet as follow:

Adequate heat treatment (e.g. cooking, hot smoking) can kill histamine-producing bacteria and inactivate histidine decarboxylase enzymes. ~~*Morganella morganii* is probably the most heat resistant of the histamine-producing bacteria, and in Australian salmon/ kahawai at temperatures between 58 and 62°C, the D-values for eliminating these bacteria and their associated HDC enzymes were between 15 and 1.5 minutes (FAO/WHO 2012).~~

Rationale: The Australian salmon is not a good example for fish with high free histidine level.

Senegal

OBSERVATIONS GÉNÉRALES :

1. Les dispositions du texte sur l'approche basée sur les GHP et HACPP sont utiles dans la prévention de la formation d'histamine chez les poissons ; assurant ainsi la réduction de l'incidence de l'intoxication à la scombrototoxine par le poisson. Cependant, l'application proposée de l'approche HACCP pour tous les navires peut ne pas être réalisable et peut être difficile à mettre en œuvre dans l'industrie de la pêche artisanale parce qu'ils sont impliqués dans la production primaire. Par conséquent, le document devrait être revu afin de prendre des dispositions pour répondre aux besoins de l'industrie artisanale.

2. Le document n'aborde pas entièrement toutes les questions décrites dans le mandat du GTE. Le document n'aborde pas de manière exhaustive toutes les étapes de la chaîne alimentaire. Il se concentre davantage sur la récolte et le stockage que sur le transport, la transformation et la distribution. Il est recommandé que le document fournisse davantage d'indications sur la manipulation, le traitement et la distribution des poissons afin de prévenir la formation d'histamine.

3. Par ailleurs, le document se concentre davantage sur les directives et l'application du système HACCP pour le contrôle de l'histamine chez les poissons. Il est donc recommandé que ce document soit plus souple et prenne davantage des dispositions pour l'utilisation des BPH pour le contrôle de l'histamine chez les poissons.

Contexte : Para X.1 Application des principes d'HACCP par les navires de récolte.

Position : Le Sénégal ne soutient pas l'exigence proposée pour la mise en œuvre du système HACCP par tous les navires de pêche. Toutefois, le système HACCP pourrait être appliqué au niveau des navires de pêche qui transforment leurs produits à bord, mais le système HACCP de mise en œuvre des navires de pêche artisanaux peut être impossible et peu pratique. Les BPH devraient être encouragées et mises en œuvre dans la pêche artisanale.

Justification : La pêche artisanale est une activité de production primaire et les BPH sont plus faciles à mettre en œuvre que l'HACCP. L'application de BPH dans la pêche artisanale est suffisante pour empêcher la production de niveaux élevés d'histamine.

Contexte : Par. X.1: Formation des membres d'équipage responsables en principes d'HACCP

Position : Le Sénégal ne soutient pas la formation des membres d'équipage de pêche artisanale dans les principes HACCP pour contrôler la formation d'histamine. Cependant, une formation en GMP pour l'industrie de la pêche artisanale est recommandée.

Justification : Toutes les entreprises de pêche n'ont pas le même niveau de capacité à mettre en œuvre le système HACCP. Il est donc fortement recommandé que les membres de l'équipage artisanal soient formés aux BPH puisqu'ils sont suffisants pour prévenir la formation d'histamine.

Contexte : Figure X.1. Exemple de diagramme pour la production de poissons présentant un risque de formation de scombrottoxine

Position : Le Sénégal ne soutient pas l'organigramme actuel dans le texte.

Justification : Un organigramme HACCP typique ne doit indiquer que les étapes du procédé et les limites critiques associées, le cas échéant, et non la surveillance et les autres activités connexes en tant qu'étapes du processus.

Contexte: Para X.2.2 : Surveillance de la température: Si une température interne dans un échantillon de poissons dépasse 4°C, alors il faut considérer que l'ensemble de la livraison du navire de pêche pourrait présenter un risque

Position : Le Sénégal s'inquiète du fait de considérer un lot de livraison entier «à risque» sur la base d'une température interne d'un seul échantillon de poisson dépassant 4 ° C. Le Sénégal recommande que le Comité révise le plan d'échantillonnage.

Justification : La taille de l'échantillon d'un poisson sur l'ensemble du lot de pêche est trop petite, très restrictive et ne reflète pas l'ensemble du lot. Il est donc statistiquement biaisé, rendant le rejet du poisson scientifiquement inacceptable. La proposition constitue un obstacle au commerce.

Contexte : Para X.2.4.1 Tests histaminiques, niveau d'histamine atteignable

Les niveaux d'histamine des poissons fraîchement capturés présentant une formation de scombrottoxine sont généralement inférieurs à 2 mg/kg, et les exploitants d'entreprises alimentaires qui appliquent les principes d'HACCP parviennent à atteindre un niveau d'histamine inférieur à 15 mg/kg.

Position :Le Sénégal n'accepte pas en charge les niveaux référencés d'histamine de 2mg/kg de poisson fraîchement récoltés et de 15/mg/kg dans le traitement.

Justification :La référence à 2mg/kg et de 14mg/kg dans le texte peut conduire à des confusions et peut être considérée comme des limites critiques dans l'industrie. De plus, des consultations sont nécessaires pour tenir compte des variations des conditions climatiques et des différences dans les conditions dans lesquelles les poissons sont récoltés et traités à l'échelle mondiale.

Contexte : Para X.2.4.2 Ajout d'un plan d'échantillonnage de l'histamine

Position : Le Sénégal ne soutient pas l'inclusion des tests d'histamine et du plan d'échantillonnage dans le texte à ce stade.

Justification : La 48^{ème} session du CCFH a convenu que les directives sur le contrôle de l'histamine seront les premières à être développées et suivies par l'élaboration de plans d'échantillonnage dans la deuxième phase du travail du comité.

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GENERAL COMMENTS:

4. AU recognizes that the application of the provisions of the text on GHP and HACCP based approach are useful in the prevention of histamine formation in fish; and could help reduce the incidences of scombrototoxin fish poisoning. However, the proposed application of HACCP based approach for all vessels may not be feasible and may be difficult to implement in artisanal fishing industry due to their peculiar needs. Development of the provisions of the Guidance document should therefore give due consideration to the present capabilities in the artisanal fishing industry and the sector's ability to implement the requirements.

5. AU notes that the Guidance document has not fully addressed all the Terms of Reference given to the EWG. The document did not comprehensively address all the steps along the food chain equally. The document appears to focus more on the harvesting and storage steps of the food chain than on transportation, processing and distribution steps which could also be important steps for histamine formation. AU therefore recommends that the document should provide more guidance on handling, processing and distribution of fish to prevent histamine formation.

6. AU further notes that the Guidance document focuses more on the guidance and application of HACCP for histamine control in fish. AU recommends that the Guidance document should also clearly articulate on how GHP can be used to control histamine formation in fish.

Issue: Para. X.1: Implementation of HACCP based approach by fishing vessels

Position: AU does not support the proposed requirement for the implementation HACCP by all fishing vessels. However, HACCP system at the level of fishing vessels that process their products on board may be applied, but the implementation HACCP system at artisanal fishing vessels may not be feasible and practical. GHP should be encouraged and implemented in artisanal fishing.

Rationale: Artisanal fishing is primary production activity and GHPs are more feasible to implement than HACCP. The application of GHP in artisanal fishing is sufficient to prevent formation of high levels of histamine.

Figure X.1: Example flow chart for the production of fish at risk of Scombrototoxin formation

Issue: Flow chart illustrating implementation of HACCP Principles for the production of fish at risk of scrombototoxin formation.

Position: AU recommends that the flow chart should be amended.

Rationale: A typical HACCP flow chart should only indicate process steps and associated critical limits, where relevant, and not monitoring and other related activities as process steps.

Issue: X.2.2, Temperature monitoring: If an internal temperature in a sample of fish exceeds 4°C, then the entire fishing vessel delivery lot should be considered at risk.

Position: AU is concerned about whether it is appropriate to consider an entire vessel delivery lot as "at risk" based on an internal temperature of just one sample of fish exceeding 4°C. AU therefore does not support the current sampling plan and recommends that the Committee revises the sampling plan.

Rationale: The sample size of one fish out of the entire fishing vessel lot is too small, very restrictive and is not representative of the whole lot. It is therefore statistically biased, making rejection of the fish scientifically unacceptable. The current sampling plan has a potential of being a barrier to trade.

Issue: Para. X.2.4.1: Reference to the levels of histamine in freshly harvested scombrototoxin forming fish as 2 mg/kg and that business operators can achieve 15 mg/kg in the text.

Position: AU does not support the inclusion of the referenced levels of histamine of 2 mg/kg for freshly harvested fish and 15 mg/kg in processing in the Guidance document.

Rationale: Although useful, the reference to 2mg/kg and 15mg/kg in the text could lead to misunderstanding and can be considered as critical limits in the industry. Moreover, due to variations in climatic conditions and differences in conditions under which fish is harvested and processed globally the reference values of 2mg/kg and 15mg/kg may differ. Hence AU recommends that the reference should be removed from the document.

Issue: X.2.4.2: Addition of histamine sampling plan

Position: AU does not support the inclusion of histamine testing and sampling plan in the text at this stage.

Rationale: The 48th Session of CCFH agreed that the guidelines on histamine control will be the first to be developed. The sampling plan was to be developed in the second phase of the committee's work based on

the agreed provisions in the current guidance which is still under development. **AU** therefore recommends that the CCFH should focus its attention on developing and finalizing the Guidance for the control of histamine.