



COMMITTEE ON FISHERIES

SUB-COMMITTEE ON FISH TRADE

Seventeenth Session

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QUALITY AND SAFETY OF FISH AND FISHERY PRODUCTS

Executive Summary

This document reviews recent developments in food safety related to market access for fish and fishery products; FAO activities on food quality and safety in the fisheries and aquaculture sectors carried out in the past two years; FAO's work in relation to scientific advice to the Codex Alimentarius Commission and support provided to member countries to implement the Codex standards; and recent activities on fish loss and waste carried out by FAO.

Suggested action by the Sub-Committee

- Recommend future areas of work for ensuring food safety in the fisheries and aquaculture sectors in a changing environment;
- Comment and provide guidance on FAO's overall work in the area of quality and safety for fish and fishery products, particularly the collaboration with Codex Alimentarius and the scientific advice for implementing the Codex Standards and Code of Practice;
- Suggest additional areas for data collection and dissemination in the area of food safety and quality;
- Illustrate national experiences of market access issues involving border rejections of fish and fish products;
- Share national challenges and opportunities towards the prevention and reduction of fish loss and waste and suggest activities to be undertaken by FAO to reduce its negative relationship with fish trade.



- Identify national needs for technical assistance or capacity building on market access issues involving food safety.

SANITARY AND PHYTOSANITARY (SPS) ISSUES IN THE FISHERIES AND AQUACULTURE SECTOR - FISHERIES AND AQUACULTURE REJECTION AND DETENTIONS ANALYSIS

1. One of the greatest difficulties for exporters of fish and fishery products is the variety of inspection frameworks, and requirements existing in different markets since each country has its own food inspection system at borders to ensure consumer protection. Recently, FAO has been analysing border detentions and rejections of the main importing countries and is making them publicly¹ available to promote transparency.

Border rejections and detentions of fish and fishery products in 2017 and 2018

2. In **Canada**, a total of 990 detentions were recorded in the Automated Import Reference System. Within the top category of detentions, “other causes”, the main issue was related to label verification with 699 cases, decreasing from 836 cases in 2017. The main chemical issue was the presence of non-permitted additives with 23 cases, decreasing from 31 cases in 2017. *Staphylococcus aureus*, “sterility” and *Listeria monocytogenes* were the main microbiological issues. In 2018, 15 detentions were recorded due to the detection of histamine above the maximum limits; they have halved compared to 2017.

Canada border rejections by causes (2012–2018)

Causes	2012	2013	2014	2015	2016	2017	2018	Total
Others	2 102	1 880	1 637	1 581	1 265	1 097	892	10 454
Chemical	219	175	159	131	102	133	76	995
Histamine	21	14	20	17	13	30	15	130
Microbiological	2	6	13	6	8	6	7	48
Total	2 344	2 075	1 829	1 735	1 388	1 266	990	11 627

Source: Canadian Food Inspection Agency.

3. In the **European Union**, a total of 208 alert and border detentions were recorded through the Rapid Alert System for Food and Feed in 2018. It is important to note that the profile of detentions and rejections varied from 2017 and 2018. The main category was “other causes”, with the main issues related to poor temperature control with 86 cases. The most frequently reported bacteria was *Listeria monocytogenes* with 24 cases, followed by *Escherichia coli* and *Norovirus* (21 cases each one). The main chemical issue was mercury presence above the maximum limits, with 42 cases, a significant decrease from the 95 cases in 2017.

¹ <http://www.fao.org/in-action/globefish/border-rejections/en/>

EU Alerts and border rejections by causes (2012–2018)

Causes	2012	2013	2014	2015	2016	2017	2018	Total
Chemical	83	90	167	92	114	159	73	778
Others	156	90	55	87	96	115	139	738
Microbiological	65	75	78	41	62	41	75	437
Histamine	16	21	16	15	20	30	13	131
Toxins	8	16	13	10	12	11	7	77
Parasites	16	4	7	1	3	3	1	35
Total	344	296	336	246	307	359	308	2 196

Source: European Union Rapid Alert System for Food and Feed Portal.

4. In **Japan**, a total of 106 border detentions were recorded by the Ministry of Health, Labour and Welfare, the majority of them due to microbiological issues. *Coliform* represents the main microbiological issue accounting for 42 cases in 2018, followed by the presence of live bacteria in 19 cases, both cases decreasing compared to 2017. The presence of antimicrobials is the most reported chemical issue, with a total of 15 detentions, halving from 2017. The most frequently reported types of antimicrobials were *enrofloxacin* and *furazolidone*. Among the category “other causes”, the only issue was related to unfinished disposal of offal, with the only case recorded in pufferfish.

Japan border rejections by causes (2012– 2018)

Causes	2012	2013	2014	2015	2016	2017	2018	Total
Microbiological	98	107	84	93	94	99	81	656
Chemical	140	78	68	59	42	36	24	447
Toxins	3	1	2	5	0	0	0	11
Others	1	0	0	1	0	8	1	11
Total	242	186	154	158	136	143	106	1 125

Source: Japanese Ministry of Health, Labour and Welfare.

5. In the **United States of America**, in 2018, a total of 1 457 border detentions were recorded in the Import Refusal Report system. Most detentions were due to “other causes”, with the main problems associated with products that were found to be unfit for human consumption, decomposed or putrid. All of these issues were categorized as “filthy”, accounting for 602 cases (increasing from 556 cases in 2017) and representing 66 percent of this category and 41 percent of the total border detentions of fish and fishery products. The main microbiological cause was *Salmonella* with 202 cases, which had decreased from the 246 cases in 2017. The main chemical issues were residues of veterinary drugs, representing 80 percent of the chemical causes; compared with the previous year, there was an increase in the number of detentions due to the presence of residues of veterinary drugs from 117 cases in 2017 to 192 cases in 2018.

US Rejections by causes (2012 – 2018)

Causes	2012	2013	2014	2015	2016	2017	2018	Total
Others	1 799	1 184	896	1 161	1 553	1 114	917	8 624
Microbiological	718	472	330	280	253	281	275	2 609
Chemical	198	117	263	469	233	156	241	1 677
Toxins	50	24	14	14	1	1	0	104
Histamine	31	26	4	3	32	25	24	145
Total	2 796	1 823	1 507	1 927	2 072	1 577	1 457	13 159

Source: USFDA - Import Refusal Report system.

RECENT DEVELOPMENTS IN THE STANDARD SETTING PROCESS ADOPTED BY THE CODEX ALIMENTARIUS COMMISSION

6. The Codex Alimentarius guides and promotes the elaboration and establishment of definitions and requirements for foods to assist in their harmonization and facilitate international trade.
7. Periodically, Codex standards and related texts are revised or removed to ensure that they are consistent with and reflect current scientific knowledge and other relevant information.
8. The last two Sessions of the Codex Alimentarius Commission² adopted the following Codex texts relevant to fishery products:
 - The revision of the Code of Practice for Fish and Fishery Products (CXC 52-2003) with regard to guidance for histamine control, with reservations expressed from few countries about the list of fish species that need to be considered as histamine producers. The list will be kept open until further data support the inclusion of other histamine producing species. The guidance will be published upon completion of the Codex Committee on Food Hygiene work on histamine in the Code of Practice for Fish and Fishery Products.
 - The new maximum limits for methylmercury in some fish species (predatory fish, tuna, alfonsino, marlin and sharks) were adopted, with reservations from several countries that expressed their disagreement with the changes. The Codex Committee on Contaminants in Food could consider revising the maximum limits for tuna in the light of additional data after three years. An electronic working group has been established to prepare a discussion paper on the establishment of additional fish species.
 - The revised food additive sections of the Standard for Canned Salmon (CXS 3-1981); Canned Shrimps or Prawns (CXS 37-1991); Canned Tuna and Bonito (CXS 70-1981); Canned Crab Meat (CXS 90-1981); Canned Sardines and Sardine-Type Products (CXS 94-1981); Canned Finfish (CXS 119-1981); Salted Fish and Dried Salted Fish of the *Gadidae* Family of Fishes (CXS 167-1989); Dried Shark Fins (CXS 189-1993); Crackers from Marine and Freshwater Fish, Crustacean and Molluscan Shellfish (CXS 222-2001); Boiled Dried Salted Anchovies (CXS 236-2003); Salted Atlantic Herring and Salted Sprat (CXS 244-2004); Sturgeon Caviar (CXS 291-2010); Fish Sauce (CXS 302-2011) and Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish (CXS 311-2013).
 - The new maximum residue levels for amoxicillin, ampicillin and lufenuron.

² 41st and 42nd Session of the Codex Alimentarius Commission (2018 and 2019).

9. Other relevant texts adopted, not limited only to fishery products are:
 - The Code of Practice for the prevention and reduction of dioxins, dioxin-like polychlorinated biphenyls (PCBs) and non dioxin-like PCB contamination in food and feed (CXC 62-2006).
 - The revision of the General Standard for the Labelling of Prepackaged Foods: Date Marking (CXS 1-1985).
 - The Draft Principles and Guidelines for the Assessment and Use of Voluntary Third-Party Assurance.
10. Further information can be found in the reports from the Commission and Codex Committees³.

RELEVANT CHANGES IN REGULATIONS FROM SOME OF THE MAIN IMPORTING COUNTRIES

European Union

11. Official Controls Regulation (EU) 2017/625 “addresses official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products.” These regulations represent a significant expansion of official controls and provide for more harmonized and standardized control structures across various sectors, including fisheries. The majority of the new regulations will enter into force in December 2019 and will replace Regulation (EU) No 882/2004. The remaining parts will enter into force on December 2022.⁴

12. The new elements in the regulations include: expanded scope covering the entire food chain; increased transparency for official control activities carried out by competent authorities, including the calculation of fees for official controls; more specific rules to target fraud, which include Member State obligations to perform regular and un-announced, risk-based controls; financial penalties targeting fraudulent behaviour, which reflect the economic advantage gained by the perpetrator; stronger rules on administrative assistance and cooperation between Members in cases of cross-border non-compliance; a common framework for import controls with risk-adjusted frequencies for all import checks; replacement of current Border Inspection Posts and Designated Points of Entry with Border Control Posts; use of one Common Health Entry Document for consignments from third countries; and formation of the Integrated Information Management System to link all existing and future computer systems. The new regulatory framework also clarifies and strengthens the rules on Members' cooperation and administrative assistance.

Canada

13. The Canadian Food Inspection Agency (CFIA), under the Safe Food for Canadians Regulations (SFCR)⁵, has adopted a risk-based approach to inspection, which has resulted in changes to current import processes. It is mandatory for importers to adopt and comply with the new requirements which came into force on 15 January 2019.

³ <http://www.fao.org/fao-who-codexalimentarius/en/>

⁴ For elaboration on the specifics of the application timeline, please refer to https://ec.europa.eu/food/sites/food/files/safety/docs/oc_application_timeline_20170407.pdf

⁵ <https://sfc-rsac.com/>

14. The main modifications to the CFIA's fish import processes include changes to import notification and release of shipments; importer licenses and associated import fees; CFIA Inspection processes; and requests for re-inspections. Under SFCR, importers will use the Single Window – Electronic Data Interchange for import notification and release of shipments allowing to notify before or at the time of import. Furthermore, Fish Import Notifications are no longer required by the CFIA to obtain the release of shipment, and once the shipment is released by Canada Border Services Agency, all shipments can be distributed immediately. The import declaration, at the time of import, is now the only requirement. The new regulations have also moved away from the two levels of fish import licenses, with requirements and nature of CFIA's compliance verification activities varying for each level. The Quality Management Program Import and basic licenses have been replaced by a single SFCR license and the requirement for a Preventative Control Plan (PCP). Mandatory product inspections, triggered by the Mandatory Inspection List and the Enhanced Inspection List, will be replaced by ongoing compliance verifications conducted on an importer's PCP.

SCIENTIFIC ADVICE AND POLICY GUIDANCE PROVIDED BY FAO

15. The need for developing international guidance for implementation of bivalve mollusc sanitation programmes within the framework of the Section 7 of the Codex Code of Practice for Fish and Fishery Products was identified by the representatives of 15 major bivalve producing and trading countries participating in the second International Workshop on Molluscan Shellfish Sanitation held in Newport, USA, in 2012. The 33rd Session of the Codex Committee on Fish and Fishery Products and the COFI Sub-Committee on Fish Trade supported the development of international guidance by FAO and the World Health Organisation (WHO). The guidance was developed by a team of international experts representing different geographical regions and different bivalve mollusc production practices. The development of the guideline further benefitted from consultation with a larger group of experts and stakeholders attending the International Conference on Molluscan Shellfish Safety, held in Puerto Varas, Chile and in Galway, Ireland in 2015 and 2017, respectively. The "Technical guidance for the development of the growing area aspects of bivalve mollusc sanitation programmes" has been finalized and is available on the FAO website⁶. The FAO Fisheries and Aquaculture Department is currently developing e-learning material to support the implementation of bivalve sanitation programmes for Members, with the first module now available⁷.

16. At its 48th Session, the Codex Committee on Food Hygiene noted the importance of water quality in food production and requested FAO and WHO to provide guidance for those scenarios where the use of "clean water" was indicated in Codex texts, in particular, for irrigation water, clean seawater, and on the safe reuse of processing water. In addition, guidance was sought on where it is appropriate to use "clean water". The FAO Fisheries and Aquaculture Department contributed to the Joint FAO/WHO Expert Meeting on the Safety and Quality of Water Used in Food Production and Processing to provide advice on matters related to seawater use and water management for fisheries and aquaculture. The resulting FAO/WHO Joint Report will provide the basis for guiding the elaboration of appropriate Codex texts and advice to Members.

⁶ <http://www.fao.org/3/CA1213EN/ca1213en.pdf>

⁷ <https://elearning.fao.org/course/view.php?id=481>

17. Ciguatera Poisoning was raised at the Codex Committee on Contaminants in Food at its 11th Session (CCCF11, April 2017). The Committee agreed to request scientific advice from FAO/WHO to allow the development of appropriate risk management options. In particular, the requested scientific advice from FAO/WHO entails: full evaluation of known ciguatoxins (toxicological assessment and exposure assessment), including geographic distribution and rate of illness, congeners, and methods of detection; and based on this, guidance for the development of risk management options. The expert meeting took place in November 2018, and the resulting FAO/WHO Joint Report will provide the basis for guiding the elaboration of appropriate Codex texts and advice to Members.

18. The second joint technical meeting of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC-UNESCO), the International Atomic Energy Agency (IAEA), FAO and WHO for the development of an Inter-Agency Global Ciguatera Strategy took place in Monaco, at the IAEA Environment Laboratories in April 2018. The purpose of the event was to develop a coordinated strategy to address ciguatera poisoning covering the improvement of: (a) the detection and monitoring of organisms contaminated with ciguatoxins, as well as risk forecasting; (b) the detection of toxins in dinoflagellate cells and fish tissue; and (c) epidemiological data collection, reporting and assessments.

19. The FAO Fisheries and Aquaculture Department has also been providing advice to relevant Codex electronic working groups such as: Guidelines on recognition and maintenance of equivalence of National Food Control Systems; Guidance on paperless use of electronic certificates; Guidance on regulatory approaches to third party assurance schemes in food safety and fair practices in the food trade; Future work on maximum level for methylmercury in other fish species - CCCF 12; Guidance for histamine control in the Codex of Practice for Fish and Fishery Products (CAC/RCP 52-2003) and sampling plans for histamines in standards for fish and fishery products; and Proposed draft revision of the code of practice to minimize and contain antimicrobial resistance (CXC 61-2005).

20. FAO is working closely with key partners such as the World Organisation for Animal Health, WHO and others in a global response to the threat of antimicrobial resistance. The FAO Fisheries and Aquaculture Department has updated the FAO Guidelines for Risk-based Fish Inspection to revise the relevant chapters to include antimicrobial resistance as a potential hazard in fish products coming from aquaculture and to update the text to include the provisions in Codex guidelines for performing risk analysis of foodborne antimicrobial resistance (Codex Guideline CAC/GL 77-2011).

21. One of the main food safety concerns in the fisheries and aquaculture sectors is harmful algal blooms (HABs), which have become more frequent and wide spread due to climate change and over-enrichment of waters. For this reason, FAO and the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) held a special event titled "Harmful algal blooms and food security and safety in the context of climate change". This session brought together international experts and different United Nations organizations such as the IOC-UNESCO and IAEA, and discussed existing scientific knowledge on harmful algal blooms and their impact on food security and food safety. In this regard, FAO and IOC-UNESCO are working jointly for the establishment of a global food safety early warning system for toxic HAB events and marine toxins using the Harmful Algae Event Database⁸ as the basis to start this work.

22. In 2018, FAO published the Fisheries and Aquaculture Technical Paper 627 "Impacts of climate change on fisheries and aquaculture", which provides a set of food safety adaptation measures, good practices and emergency preparedness solutions for the fisheries and aquaculture sector, which can be used as policy guidance for Members.

⁸ <http://haedat.iode.org/>

23. The Global Oceans Action Summit for Food Security and Blue Growth⁹ requested that FAO, the International Maritime Organization and the United Nations Environment Programme work, together with the GESAMP, to improve the knowledge base on microplastics in the marine environment and provide policy advice on this topic. FAO was requested to contribute specifically on fisheries and aquaculture. FAO worked closely with key partners and academia, which resulted in a report called "Microplastics in fisheries and aquaculture"¹⁰ containing a set of recommendations and best practices to reduce the possible impact of microplastics on fish populations and stocks, as well as on food safety issues arising from seafood consumption.

RECENT DEVELOPMENTS IN FISH SAFETY AND QUALITY IN FAO IN THE AREA OF CAPACITY BUILDING

24. FAO continued its capacity building activities in fish safety and quality by:

- Supporting Members¹¹ to meet major market requirements, to implement and comply with SPS requirements by assisting in the implementation of Codex Standards and texts;
- Organizing training programmes with other institutions¹² to disseminate market access requirements related to food safety and quality, traceability and labelling;
- Supporting the organization of international courses and conference, fostering the participation of developing countries¹³;
- Disseminating information on regulatory requirements¹⁴, including border rejections¹⁵, on the GLOBEFISH website.

RECENT DEVELOPMENTS IN FISH LOSS AND WASTE

25. Food loss (decrease in quantity or quality of food) and food waste (discarding or alternative "non-food" use of safe and nutritious food for human consumption)¹⁶ occur in most, if not all, fish supply chains during fishing, landing, distribution, processing, marketing and consumption. Reducing food loss and waste (FLW) is becoming increasingly more important as demand for fish as food increases. For this reason, the FAO Fisheries and Aquaculture Department is continually seeking improvements in this area by providing capacity building, disseminating information and participating in the development of international guidance and tools.

26. In 2019, FAO launched an online repository of information related to FLW¹⁷. This initiative was one of the responses to the recommendation from the 32nd Session of the Committee on Fisheries to take action to reduce food loss and waste in the fisheries and aquaculture sectors. The repository outlines that solutions to FLW rely on a combination of the right policy, application of appropriate technology, skills and knowledge, services and infrastructure, regulatory environment, social and gender equity and good linkages.

⁹ <http://www.globaloceansactionsummit.com/>

¹⁰ <http://www.fao.org/3/a-i7677e.pdf>

¹¹ Bangladesh, Equatorial Guinea, Eritrea, Federated States of Micronesia, Philippines, Thailand, Ukraine, Viet Nam and Zambia

¹² For example, the International Centre for Advance Mediterranean Agronomic Studies (CIHEAM) and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS)

¹³ For example, the biannual "World Seafood Congress" that brings together regulators, fisheries and aquaculture certifying bodies, representatives of the fish processing industry, and fish inspection and certification services from major countries.

¹⁴ <http://www.fao.org/in-action/globefish/countries/en/>

¹⁵ <http://www.fao.org/in-action/globefish/border-rejections/en/>

¹⁶ <http://www.fao.org/platform-food-loss-waste/en/>

¹⁷ <http://www.fao.org/flw-in-fish-value-chains/en/>

27. Self-paced e-learning courses are being developed, each focusing on different thematic areas, to build-up and extend the knowledge on FLW cost-effectively. The courses will be delivered online, through the FAO e-learning centre¹⁸ and will be offered free of charge as a global public good. The courses will also be made available to a global audience via the Food Loss and Waste in Fish Value Chains web resource¹⁹.

28. The FAO Fisheries and Aquaculture Department is supporting the FAO Statistics Division to develop cost-effective data collection methods for countries seeking to monitor SDG target 12.3, which requires "by 2030 to halve per capita global food waste at the retail and consumer level, and reduce food losses along production and supply chains including post-harvest losses". The new guidelines for the measurement of post-harvest losses of fish are planned to be field-tested in selected countries.

29. Two FAO Fisheries Circulars are planned for 2019, both focusing on profiling food loss and waste to disseminate unique information on food loss and waste and fishing gear losses, thus facilitating decision making and policy formulation and implementation. These two Circulars will be based on studies overseen by FAO under the Food Loss Assessment and Waste Reduction Programme in the Amazon Basin and in India.

¹⁸ <https://elearning.fao.org/>

¹⁹ <http://www.fao.org/flw-in-fish-value-chains/en/>