

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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Agenda Item 2b)

CX/FFP 11/31/2 Add.1

JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON FISH AND FISHERY PRODUCTS

Thirty-first Session
Tromsø, Norway
11 – 15 April 2011

MATTERS ARISING FROM THE WORK OF FAO AND WHO

(Prepared by FAO and WHO)

1. **Salmonella in bivalve molluscs:** The 29th Session of the Codex Committee on Fish and Fishery Products (CCFFP), while approving the *Draft Standard for Live and Raw Bivalve Molluscs*, also agreed to ask FAO and WHO to address the following question: “In the context of harvesting area monitoring for faecal contamination and lot contamination, estimate the risk mitigation for *Salmonella* in bivalve molluscs when different sampling plans and microbiological criteria are applied”. As an initial response, FAO/WHO undertook a review of the sampling plans used by various member countries and of *Salmonella* prevalence levels and the epidemiological and scientific reports on illness associated with *Salmonella* in bivalve molluscs. This review was presented to and discussed during the 30th Session of the CCFFP and based on its contents, several delegations questioned whether there was a need to have criteria for *Salmonella* in the Standard, especially taking into account the guidance for the development of criteria given in the *Principles for the Establishment and Application of Microbiological Criteria for Food* (CAC/GL 21-1997) which states that criteria should be developed only when there was a need and that such criteria are meaningful for consumer protection. The Committee then agreed to request FAO/WHO to undertake a risk assessment to determine whether there is a significant public health risk from *Salmonella* associated with the consumption of bivalves and to evaluate whether criteria for *Salmonella* are meaningful to ensure adequate consumer health protection. It was agreed to retain the current criteria for *Salmonella* and the associated sampling plan, which are based on existing practices within countries rather than an international scientific assessment, until the result of this assessment becomes available.

To address this question, FAO and WHO have been working electronically with an expert group, consisting of microbiologists, modellers, bivalve safety managers and public health experts, with the following terms of reference: (1) Re-assess and update the review presented to the 30th Session of CCFFP considering any additional scientific information that has become available in the interim, previous FAO/WHO microbiological risk assessments and if feasible develop a model for exposure assessment for *Salmonella* in live/raw bivalve molluscs, (2) Examine whether risk characterization for *Salmonella* in bivalves can be performed using the dose response curve for *Salmonella* developed in FAO/WHO RA for *Salmonella* in eggs and broiler chicken, (3) Assess the impact of microbiological criteria for *Salmonella* in live bivalves on public health and compare the performance of sampling plans with respect of risk reductions that can be achieved through their implementation, (4) Provide scientific advice to FAO/WHO to address the question raised by the 30th Session of CCFFP, and (5) Prepare a draft risk assessment report for peer review. This work began in late 2010 and will continue through 2011. However, an interim report of this expert group will be presented to the committee as a CRD.

2. **Risk management tools for *Vibrio* spp in seafoods:** The Codex Committee on Food Hygiene (CCFH), while agreeing to forward the draft Annex on Control Measures for *Vibrio parahaemolyticus* and *Vibrio vulnificus* in Bivalve Molluscs (Annex to the Guidelines on the Application of General Principles of Food Hygiene to the Control of Pathogenic *Vibrio* species in Seafood) to the 33rd Session of the Commission for adoption at Step 5/8, the 41st Session of CCFH recognized the need to validate the predictive risk models with a view to constructing more applicable models for wide use among countries. CCFH requested FAO/WHO to convene an expert meeting with following terms of reference:

- Conduct validation of the predictive risk models developed by the United States of America, based on the FAO/WHO risk assessments, with a view to constructing more applicable models for wide use among member countries, including adjustment of strain virulence variations and ecological factors;
- Review the available information on testing methodology, and recommend microbiological methods for *Vibrio* spp. in order to monitor the levels of pathogenic *Vibrio* spp. in seafood and/or water;
- Conduct validation of the growth rates and doubling times for *V. parahaemolyticus* and *V. vulnificus* in *Crassostrea virginica* provided in Table 1 of the draft Annex with a view of including more strains isolated from different parts of the world and different bivalve mollusk species.

The Expert Meeting was held during 13-17 September, 2010. A summary of the outcome was presented to CCFH during the 42nd Session held in Kampala in November 2010 and can be found in CX/FH 10/42/03 (ftp://ftp.fao.org/codex/ccfh42/fh42_03e.pdf). The Committee was asked to consider whether or not it supported/recommended this work to continue, and if so the direction it should take i.e. focus on data collection for a couple of years before further modelling work is attempted or develop a generic model including all relevant steps whereby selection and characterization of those steps would be completely reliant on the data inputs of the user. The 42nd Session of CCFH recommended continuation of the work in the following manner:

- Step 1: Provide recommendations on a range of test methods for quantifying *V. parahaemolyticus* (total and pathogenic (e.g. *tdh+*, *trh+*) and *V. vulnificus* in seawater and bivalves and facilitate performance evaluation of the proposed methodologies;
- Step 2: Develop data collection strategies (that would facilitate the collection of data) by countries to support the modification/development of models with a broader scope than those which currently exist;
- Step 3: Encourage the collection of data in different regions, in different bivalve species and for geographically diverse strains of pathogenic *V. parahaemolyticus* and *V. vulnificus* according to the data collection strategy and using recommended test methods; and
- Step 4: To modify/develop risk assessment models that could be used to address a range of risk management questions in a number of different regions and products, when adequate data becomes available

FAO/WHO is currently developing a workplan to address this request and is in discussion with various experts on *Vibrio* detection methodologies and potential contributors of strains from environmental and clinical sources from different parts of the world. The potential to use existing networks such as Global Foodborne Infections Network (GFN) is also being explored. FAO/WHO are interested in hearing from delegations who might be interested in contributing to or partnering with FAO/WHO on this initiative.

3. **Minimising problems due to *Salmonella* in products of aquaculture:** During an FAO study of causes of detentions and rejections of exported seafood it was observed that annually there are over 300 import alerts due to *Salmonella* in fish and fishery products. To get a better understanding of the public health impact of *Salmonella* associated with aquacultured products, FAO organized an Expert Workshop on the **Application of biosecurity measures for the control of *Salmonella* in sustainable aquaculture** in Mangalore, India on 19-21 January, 2010. The Experts concluded that

(a) although *Salmonella* is a major foodborne pathogen, products of aquaculture are rarely involved in outbreaks of salmonellosis; (b) serovars of *Salmonella* detected in raw products of aquaculture are rarely detected in human cases of salmonellosis in fish importing countries; (c) very low levels of prevalence are seen in raw products of aquaculture in developed countries, but this has not led to any significant public health problem in these countries; (d) there are a variety of pathways reported as to how *Salmonella* can enter the aquaculture environment ranging from feed stock, wild animals, domestic stock, poor sanitation and inappropriate disposal of human and animal wastes. Control of such pathways pose major challenges, particularly in such cases as land runoff during rains and control of wild animals in the farm environment; (e) Good hygienic practices during aquaculture production and biosecurity measures can minimise but not eliminate *Salmonella* in products of aquaculture; (f) and currently there is insufficient data to carry out a quantitative risk assessment for *Salmonella* in aquaculture.

The report of this Workshop has been published by FAO as FAO Fisheries and Aquaculture Report No. 937. The report is available from FAO website using the following link: <http://www.fao.org/docrep/013/i1547e/i1547e00.pdf>. FAO/WHO is seeking further advice from this Committee on the continuation of this work and the direction it should take.

4. **Work on viruses in bivalve molluscs:** FAO/WHO is providing technical support to the Electronic Working Group of the CCFH working on Draft Guidelines on the Application of General Principles of Food Hygiene for Control of Viruses in Foods, in which there is an Annex on Control of hepatitis A virus and Norovirus in bivalve molluscs.
5. **Assessing the risks and benefits of fish consumption:** The 29th Session of the Joint FAO/WHO Food Standards Programme, Codex Alimentarius Commission held in Geneva, Switzerland, 3-7 July 2006, requested FAO and WHO to consider holding an FAO/WHO Expert Consultation on the health risks associated with methylmercury and dioxins and dioxin-like PCBs in fish and the health benefits of fish consumption, based on a recommendation from the 38th session of the Codex Committee on Food Additives and Contaminants (CCFAC).

In order to better address the request from Codex, FAO and WHO first held a small expert group meeting to get advice on these issues and the most appropriate way forward. This expert meeting noted that a large number of national studies and assessments were available and that these could form the basis for further development of assessment models and for the evaluation. However, a quantitative risk-benefit approach may not be possible at the international level, so other options may need to be explored.

FAO and WHO held the Expert Consultation on the Risks and Benefits of Fish Consumption 25 to 29 January 2010 at FAO Headquarters, Rome, Italy. Seventeen experts in nutrition, toxicology, epidemiology, dietary exposure and risk-benefit assessments discussed the risks and the benefits of fish consumption. The tasks of the experts were to assess the health benefits and risks associated with consumption of fish. Based on existing evidence, the main objective was to give advice, targeted at vulnerable population subgroups, on a neutral basis, in order to assist countries and their institutions, policy makers, health authorities, fisheries bodies, public health advisors, etc., to balance the risks and the benefits of fish consumption.

The report of the expert consultation is under preparation and the executive summary is available at: ftp://ftp.fao.org/FI/DOCUMENT/risk_consumption/executive_summary.pdf.

6. **Technical guidelines on aquaculture certification:** The FAO Technical Guidelines on Aquaculture Certification was approved by the FAO Committee on Fisheries (COFI) during the 29th Session held in Rome during January 31- Feb 04, 2011. The guidelines include minimum substantive criteria in four major areas: food safety, animal health and welfare, environmental integrity and socio-economic issues. FAO has been providing technical assistance to member countries for implementation of good aquaculture practices, improving aquaculture practices to minimise the use of veterinary drugs and reduce hazards due to fishborne parasites. Presently, FAO is a partner in an EU funded project "Sustaining Ethical Aquaculture Trade" (SEAT) in which FAO is studying constraints in accessing information related to international regulations and food safety in aquaculture and strategies to improve information access.

7. **Dissemination of scientific information related to fish safety management:** FAO is finalising a Fisheries Technical Paper entitled “Assessment and management of biotoxin risks in bivalve molluscs”. This is based on background papers prepared for the 2004 FAO/WHO/IOC expert consultation that were subsequently reviewed and updated. This is expected to be released during 2011. The FAO Fisheries Technical Paper 444 “Assessment and Management of Fish safety and Quality” has been updated and is going to press shortly. FAO co-sponsored the 2nd International Conference on Seafood Technology in which experts from different areas of fish processing reviewed the recent technological developments. FAO is in the process of publishing the Proceedings. FAO has recently released Fisheries Technical Paper 553, Private Standards and Certification in Fisheries and Aquaculture that provides an overview of current practices and highlights emerging issues. FAO is also working on updating the Fisheries Technical Report 473 Causes of Detentions and Rejections in International Fish Trade.
8. **Capacity building activities** FAO has been providing technical support to developing member countries for implementation of Codex Code of practice for fish and fishery products. A Regional Workshop on “National Strategies for improving fish utilisation and trade” was held in New Delhi, India during July 2010. FAO implemented a Regional Project supported by WTO STDF Capacity Building to Enhance Fish Trade Performance in Selected African Countries, particularly emphasising on capacity to deal with SPS issues and implementation of Codex codes of practice in fish handling and processing. FAO co-sponsored with the International Center for Advanced Mediterranean Agronomic Studies (CIHEAM), Zaragoza an Advanced Course on “Bivalve shellfish safety management” at the University of Santiago de Compostella, Spain. FAO supported participation of developing countries in this course. Considering the ongoing work of Codex on *Vibrio* spp in seafoods, FAO supported participation of developing countries in the International Conference “Vibrios in the Environment 2010” held at Bilixi, USA.
9. **Foodborne parasites;** the 42nd session of the CCFH highlighted the public health and trade importance of foodborne parasites and the need to address these foodborne parasites in a horizontal manner by developing a general guidance document, which would provide a framework in which annexes on specific parasite / commodity combinations could be addressed. However, it was noted that, in order to undertake this work there was a need for a review of all available information on parasites to better assess the global problem associated with them, the commodities involved and the related public health issues and that this work could be carried out in parallel to the proposed. In light of this the Committee requested FAO/WHO to review the current status of knowledge on parasites in food and their public health and trade impact, in order to provide the CCFH with advice and guidance on the parasite-commodity combinations of particular concern, the issues that need to be addressed by risk managers and the options available to them. FAO/WHO will initiate this process though an extensive data collection process. A call for data will be issued in the coming weeks and circulated through Codex mailing list. Responding to this call, by drawing attention to of any relevant information on fishborne parasites, is important to ensure that they are considered in an optimal manner.