

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

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Agenda Items 7, 8 and 9

CRD12

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

Fifty- third Session

San Diego, United States of America

29 November – 2 December 2022 and 8 December 2022

Comments of ISO

Codex and ISO

There is a long history of collaboration between Codex and ISO, the International Organization for Standardization (ISO). Any general information regarding ISO can be found on <http://www.iso.org>.

This CRD provides a summary of current work undertaken by the ISO committee on food chain microbiology (ISO/TC 34/SC 9) that may be of interest to CCFH 53. ISO/TC 34/SC 9 is chaired by Dr Bertrand Lombard (ANSES, The French food, environmental safety agency) and the committee manager is Dr Gwénola Lefresne Hardouin (AFNOR, the French national standardization organization). ISO/TC 34/SC 9 deals with the standardization of reference methods for the analysis of microorganisms (pathogenic and non pathogenic bacteria, viruses and parasites) in the field of microbiological analysis of the food chain (90 ISO Standards published).

Point 7 - Discussion paper on the revision of Guidelines on the Application of General Principles of Food Hygiene to the Control of Pathogenic *Vibrio* Species in Seafood (CXG 73-2010)

ISO published 2 methods of analysis of interest for CCFH for the determination (detection and quantification) of *Vibrio* spp. and there is one current project to replace the one on quantification:

ISO 21872-1:2017 *Microbiology of the food chain — Horizontal method for the determination of *Vibrio* spp. — Part 1: Detection of potentially enteropathogenic *Vibrio parahaemolyticus*, *Vibrio cholerae* and *Vibrio vulnificus**

Scope: ISO 21872-1:2017 specifies a horizontal method for the detection of enteropathogenic *Vibrio* spp., which causes human illness in or via the intestinal tract. The species detectable by the method specified include *Vibrio parahaemolyticus*, *Vibrio cholerae* and *Vibrio vulnificus*.

ISO 21872-1:2017 is applicable to the following:

- products intended for human consumption and the feeding of animals;
- environmental samples in the area of food production and food handling.

This method is based on conventional microbiology and a PCR-based confirmation.

ISO/TS 21872-2:2020 *Microbiology of the food chain — Horizontal method for the determination of *Vibrio* spp. — Part 2: Enumeration of total and potentially enteropathogenic *Vibrio parahaemolyticus* in seafood using nucleic acid hybridization*

Scope: This document specifies a method for the direct enumeration of potentially enteropathogenic *V. parahaemolyticus* (*tdh* and/or *trh* positive) and/or the enumeration of total *V. parahaemolyticus* in seafood.

This method uses colony hybridization.

Quantification of *Vibrio*

A project has started on quantification of *Vibrio* by real-time PCR, to revise ISO 21872-2.

Point 8 - Discussion paper on revision of the Guidelines on the Application of the General Principles of Food Hygiene to the Control of Viruses in Food (CXG 79-2012)

ISO published 2 methods of analysis of interest for CCFH for the determination of hepatitis A virus and norovirus, and there is one current project on hepatitis E virus:

ISO 15216-1:2017 *Horizontal method for determination of hepatitis A virus and norovirus in food using real-time RT-PCR - Part 1: Method for quantification*

Scope: ISO 15216-1:2017 specifies a method for the quantification of levels of Hepatitis A virus (HAV) and norovirus genogroup I (GI) and II (GII), from test samples of foodstuffs (soft fruit, leaf, stem and bulb vegetables, bottled water, bivalve molluscan shellfish (BMS)) or food surfaces. Following liberation of viruses from the test sample, viral RNA is then extracted by lysis with guanidine thiocyanate and adsorption on silica. Target sequences within the viral RNA are amplified and detected by real-time RT-PCR.

This method is not validated for the analysis of the target viruses in other foodstuffs (including multi-component foodstuffs), or any other matrices, nor for the analysis of other viruses.

ISO 15216-2:2019 *Microbiology of the food chain — Horizontal method for determination of hepatitis A virus and norovirus using real-time RT-PCR — Part 2: Method for detection*

Scope: This document specifies a method for the detection of hepatitis A virus (HAV) and norovirus genogroups I (GI) and II (GII), from test samples of foodstuffs [(soft fruit, leaf, stem and bulb vegetables, bottled water, bivalve molluscan shellfish (BMS))] or surfaces using real-time RT-PCR.

This method is not validated for detection of the target viruses in other foodstuffs (including multi-component foodstuffs), or any other matrices, nor for the detection of other viruses.

Hepatitis E virus

A project has started on the determination of Hepatitis E virus in meat-based products.

Point 9 - New work / forward workplan

Potential revision of the guidelines on the Application of General Principles of Food Hygiene to the Control of *Listeria monocytogenes* in Foods (CXG 61-2007)

In the framework of microbial risk assessment, several complementary approaches are developed to estimate risks posed by pathogens or spoilage microorganisms in the food chain. Challenge testing is one of the recognized approaches used to validate control measures within the HACCP system, as well as to assess microbiological safety and quality of food, food production processes, food storage conditions and food preparation recommendations for consumers.

ISO published 2 recent standards relating to challenge tests that could be of interest for CCFH. The objective of these ISO standards is to specify protocols for conducting microbiological challenge tests.

The referencing of these ISO standards at the CODEX level would allow international harmonization. One possibilities could be to include these ISO references in the guidelines on *Listeria monocytogenes*, with for instance a simple footnote that could be added in annex II.

ISO 20976-1:2019: *Microbiology of the food chain — Requirements and guidelines for conducting challenge tests of food and feed products — Part 1: Challenge tests to study growth potential, lag time and maximum growth rate.*

Scope: This document specifies protocols for conducting microbiological challenge tests for growth studies on vegetative and spore-forming bacteria (including *Listeria monocytogenes*) in raw materials and intermediate or end products.

ISO 20976-2:2022: *Microbiology of the food chain — Requirements and guidelines for conducting challenge tests of food and feed products — Part 2: Challenge tests to study inactivation potential and kinetic parameters*

Scope: This document specifies the protocols for conducting microbiological challenge tests for inactivation studies on vegetative bacteria and bacterial spores in the raw materials and ingredients, intermediate or end products.

Recommendations

ISO invites the CCFH:

- to consider the opportunity, during the current work on Vibrio and virus, to refer to the existing ISO methods of analysis on Vibrio and virus
- in case of a future update of the Listeria guidelines, to consider the referencing to ISO standards on challenge tests and to register this objectif in the working plan of CCFH