

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

Forty-ninth Session

Chicago, Illinois, United States of America, 13 - 17 November 2017

LIAISON WITH ISO/TC 34 "FOOD PRODUCTS"/SC 9 "MICROBIOLOGY: TABLE OF 15 ISO STANDARDS PUBLISHED

Information from ISO

Part I:

In 2017, ISO has published 15 Standards on reference methods of detection, enumeration or quantification of pathogenic food-borne micro-organisms (bacterial and viruses), their metabolites (histamine) or their toxins. These 15 reference methods have been fully validated by inter-laboratories studies organized and funded by a mandate from European Commission to CEN (European Committee for Standardization), with about 150 participating laboratories, some of them being from outside Europe.

Reference Publication 2017	Title <i>Microbiology of the food chain –</i>	Scope	Current or future reference in European Regulation
ISO 15216-1	<i>Horizontal method for determination of hepatitis A virus and norovirus in food using real-time RT-PCR -- Part 1: Method for quantification</i>	<p>This document specifies a method for the quantification of levels of HAV and norovirus genogroup I (GI) and II (GII) RNA, from test samples of foodstuffs (soft fruit, leaf, stem and bulb vegetables, bottled water, 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.</p> <p>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 in foodstuffs, food surfaces or other matrices.</p>	
ISO 19343	<i>Detection and quantification of histamine in fish and fishery products – HPLC method</i>	This document specifies a high performance liquid chromatography (HPLC) method to analyse histamine in fish and fishery products (fish sauces, fish matured by enzyme in brine, etc.) intended for human consumption.	EC 2073/2005 ¹
ISO 19020	<i>Horizontal method for the immunoenzymatic detection of staphylococcal</i>	This document specifies a screening method for the detection of staphylococcal enterotoxins SEA, SEB, SECs, SED and SEE in foodstuffs. It consists of two main steps: a) extraction followed by a concentration based on dialysis principle; and b) an	EC 2073/2005

¹ EC Regulation on microbiological criteria for foodstuffs

	enterotoxins in foodstuffs	<p>immunoenzymatic detection using commercially available detection kits.</p> <p>This document is applicable to the screening of staphylococcal enterotoxins SEA to SEE in products intended for human consumption.</p> <p>Other staphylococcal enterotoxins such as types SEG, SEH, SEI, SER, SES and SET can also cause illness. Due to the lack of commercially available detection kits, this document is applicable only to types SEA to SEE, but may apply to other types of toxins, subject to validation of the method.</p>	
ISO 18465	Quantitative determination of emetic toxin (cereulide) using LC-MS/MS	<p>This document describes the quantitative analysis of the emetic toxin cereulide using high performance liquid chromatography (HPLC) or ultra performance liquid chromatography (UHPLC) connected to a tandem mass spectrometer (LC-MS/MS).</p> <p>This document is applicable to the analysis of the toxin in products intended for human consumption.</p>	
ISO 22964	<i>Horizontal method for the detection of Cronobacter spp.</i>	<p>This document specifies a horizontal method for the detection of <i>Cronobacter</i> spp. Subject to the limitations discussed in the introduction, this document is applicable to— food products and ingredients intended for human consumption and the feeding of animals, and— environmental samples in the area of food production and food handling.</p>	EC 2073/2005
ISO 21872-1	<i>Horizontal method for the determination of Vibrio spp. – Part 1: Detection of potentially enteropathogenic Vibrio parahaemolyticus, Vibrio cholerae and Vibrio vulnificus</i>	<p>This document specifies a horizontal method for the detection of enteropathogenic <i>Vibrio</i> spp., which causes human illness in or via the intestinal tract. The species detectable by the methods specified include <i>Vibrio parahaemolyticus</i>, <i>Vibrio cholerae</i> and <i>Vibrio vulnificus</i>.</p> <p>It is applicable to the following:</p> <ul style="list-style-type: none"> — products intended for human consumption and the feeding of animals; — environmental samples in the area of food production and food handling. <p>NOTE 1 This method may not be appropriate in every detail for certain products (see Introduction).</p> <p>NOTE 2 The World Health Organization (WHO) has identified that <i>V. parahaemolyticus</i>, <i>V. cholerae</i> and <i>V. vulnificus</i> are the major food-borne <i>Vibrio</i> spp. However, the method in this document can also be appropriate for the identification of other <i>Vibrio</i> spp. causing illness in humans.[1]</p>	
ISO 21528-1	<i>Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 1: Detection of Enterobacteriaceae</i>	<p>This document specifies a method, with enrichment, for the detection of <i>Enterobacteriaceae</i>. It is applicable to</p> <ul style="list-style-type: none"> — products intended for human consumption and the feeding of animals, and— environmental samples in the area of primary production, food production and food handling. <p>This method is applicable</p>	EC 2073/2005

		<p>— when the microorganisms sought are expected to need resuscitation by enrichment, and— when the number sought is expected to be below 100 per millilitre or per gram of test sample.</p> <p>A limitation on the applicability of this document is imposed by the susceptibility of the method to a large degree of variability (see Clause 11).</p> <p>NOTE Enumeration can be carried out by calculation of the most probable number (MPN) after incubation in liquid medium. See <u>Annex A</u>.</p>	
ISO 21528-2	<i>Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count method</i>	<p>This document specifies a method for the <u>enumeration of Enterobacteriaceae</u>. It is applicable to</p> <p><u>— products intended for human consumption and the feeding of animals, and— environmental samples in the area of primary production, food production and food handling.</u></p> <p><u>This technique is intended to be used when the number of colonies sought is expected to be more than 100 per millilitre or per gram of the test sample.</u></p> <p><u>The most probable number (MPN) technique, as included in ISO 21528-1, is generally used when the number sought is expected to be below 100 per millilitre or per gram of test sample.</u></p>	EC 2073/2005
ISO 11290-1	<i>Horizontal method for the detection and enumeration of Listeria monocytogenes and other Listeria spp.- Part 1: Detection method</i>	<p>This document specifies a horizontal method for</p> <p>— the detection of <i>L. monocytogenes</i>, and</p> <p>— the detection of <i>Listeria</i> spp. (including <i>L. monocytogenes</i>).</p> <p>This document is applicable to — products intended for human consumption and for the feeding of animals, and— environmental samples in the area of food production and food handling.</p> <p>It is possible that certain additionally described <i>Listeria</i> species may not be detected or confirmed by this method.</p>	EC 2073/2005
ISO 11290-2	<i>Horizontal method for the detection and enumeration of Listeria monocytogenes and other Listeria spp.- Part 2: Enumeration method</i>	<p>This document specifies a horizontal method for</p> <p>— the enumeration of <i>L. monocytogenes</i>, and</p> <p>— the enumeration of <i>Listeria</i> spp. (including <i>L. monocytogenes</i>).</p> <p>This document is applicable to — products intended for human consumption and for the feeding of animals, and— environmental samples in the area of food production and food handling.</p> <p>It is possible that certain additionally described <i>Listeria</i> species may not be detected or confirmed by this method.</p>	EC 2073/2005
ISO 16654:2001/AMD1	<i>Horizontal method for the detection of E. coli O157 Amendment 1 : Annex B: Result of</i>	<p>This International Standard specifies a horizontal method for the detection of <i>Escherichia coli</i> serogroup O157.</p> <p>Subject to the limitations discussed in the introduction, this International Standard is applicable</p>	EC 2073/2005

	<i>interlaboratories studies</i>	to products intended for human consumption or for animal feeding stuffs.	
ISO 10272-1	<i>Horizontal method for detection and enumeration of Campylobacter spp. – Part 1: Detection method</i>	This document specifies a horizontal method for the detection by enrichment or direct plating of <i>Campylobacter</i> spp. It is applicable to — products intended for human consumption, — products intended for animal feeding, — environmental samples in the area of food and feed production, handling, and — samples from the primary production stage such as animal faeces, dust, and swabs.	EC 2073/2005
ISO 10272-2	<i>Horizontal method for detection and enumeration of Campylobacter spp.– Part 2: Colony count technique</i>	This document specifies a horizontal method for the enumeration of <i>Campylobacter</i> spp. It is applicable to — products intended for human consumption, — products intended for animal feeding, — environmental samples in the area of food and feed production, handling, and — samples from the primary production stage such as animal faeces, dust, and swabs.	EC 2073/2005
ISO 6579-1	<i>Horizontal method for the detection, enumeration and serotyping of Salmonella - Part 1: Detection of <u>Salmonella</u> spp.</i>	This document specifies a horizontal method for the detection of <i>Salmonella</i> . It 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; — samples from the primary production stage such as animal faeces, dust, and swabs. With this horizontal method, most of the <i>Salmonella</i> serovars are intended to be detected. For the detection of some specific serovars, additional culture steps may be needed. For <i>Salmonella</i> Typhi and <i>Salmonella</i> Paratyphi, the procedure is described in Annex D. The selective enrichment medium modified semi-solid Rappaport-Vassiliadis (MSRV) agar is intended for the detection of motile <i>Salmonella</i> and is not appropriate for the detection of non-motile <i>Salmonella</i> strains.	EC 2073/2005
ISO 10273	<i>Horizontal method for the detection of pathogenic <u>Yersinia enterocolitica</u></i>	This document specifies a horizontal method for the detection of <i>Y. enterocolitica</i> associated with human disease. It is applicable to — products intended for human consumption and the feeding of animals, and — environmental samples in the area of food production and food handling.	

Part II:

ISO standards which are already referenced in Codex documents and updated

Codex document	Reference in the text	New ISO standard published
Code of Hygienic Practice for Low-Moisture Foods (CAC/RCP 75-2015)	The methods to be employed should be the most recent version of ISO 6579,	ISO 6579-1:2017 has superseded ISO 6579:2002
Standard for Smoked Fish, Smoke-Flavoured Fish and Smoke-Dried Fish (CODEX STAN 311- 2013) Guidelines on the Application of General Principles of Food Hygiene to The Control of Listeria Monocytogenes in Foods (CAC/GL 61 - 2007)	ISO 11290-1, ISO 11290-2 and ISO 16140).	ISO 11290-1 and ISO 11290-2 have been updated in 2017 and validated by inter-laboratories studies ISO 16140-2:2016 superseded ISO 16140:2003
Histamine in Salmonids: A literature review, in CX/FH 17/49/3	HPLC method from regulation EC 2073/2005	HPLC method has been standardized and ISO 19343:2017 published