

INTRODUCTION

1. The Codex Committee on Food Hygiene (CCFH) held its 53rd session in San Diego, United States of America, from 29 November to 2 December 2022 with virtual report adoption on 8 December 2022, at the kind invitation of the Government of the United States of America. Dr Jose Emilio Esteban, Chief Scientist, Food Safety and Inspection Service, Office of Public Health Science, United States Department of Agriculture (USDA) chaired the Session, which was attended by 51 Member countries, one Member Organization and 11 Observer Organizations. The list of participants is included in Appendix I.

OPENING¹

2. Mr Steve Wearne, the Chairperson of the Codex Alimentarius Commission (CAC) delivered opening remarks. He recognized the opportunity meeting physically provided to nurture, renew and grow the relationships core to the effectiveness of Codex. He acknowledged the appetite to progress work on the guidelines for the control of Shiga toxin-producing *Escherichia coli* (STEC) and on safe use and reuse of water, highlighting that discussions such as those on the safe use and re-use of water in food production exemplified our adaptation to the food safety challenges posed by changes in the world around us
3. Dr Linda J Harris, Professor of Cooperative Extension in Microbial Food Safety, Food Science and Technology, University of California, Davis, delivered the keynote address. Recalling the importance of agriculture production in the state, she highlighted some of the key challenges faced from water availability to risk factors affecting the survival of foodborne pathogens in the fresh produce production environment. She underlined the problems posed by STEC in the United States of America (USA) with reference to STEC outbreaks in various food commodities including leafy green vegetables, as well as and foodborne illness outbreaks linked to unpasteurized milk. She drew the attention of CCFH53 to the cycle of surveillance, epidemiological investigations, basic and applied research and prevention and control measures in containing foodborne pathogens and the constant need to evolve the approach to incorporate innovation and address new foods, pathogens or food/pathogen associations. Finally, she commended CCFH's contribution to protecting consumers' health by establishing guidelines for the control of STEC and the safe use and re-use of water in food production.
4. CCFH53 expressed appreciation to Dr Harris for the timely presentation.

Division of competence²

5. CCFH53 noted the division of competence between the European Union (EU) and its Member States, in accordance with paragraph 5, Rule II, of the Rules of Procedure of the CAC.

ADOPTION OF THE AGENDA (Agenda Item 1)³

6. CCFH53 adopted the provisional agenda as its agenda for the Session.

MATTERS REFERRED BY THE CODEX ALIMENTARIUS COMMISSION AND/OR OTHER CODEX SUBSIDIARY BODIES TO THE COMMITTEE (Agenda Item 2)⁴

Matters for information

7. The Codex Secretariat outlined the crosscutting activities taking place at the Codex Alimentarius Commission (CAC) and the Executive Committee of the Codex Alimentarius Commission (CCEXEC), including a model for future Codex work, the 60th Anniversary of the CAC, new food sources and production systems and monitoring the use and impact of Codex Standards. She presented an update of the latest discussions on these matters from CAC45 and CCEXEC83, noting that this information had not been included in CX/FH 22/53/2 due to the short time period between CAC45/CCEXEC83 and CCFH53.
8. She confirmed that CAC45 had adopted the Guidelines for the Management of Biological Foodborne Outbreaks and the revision to the *General Principles of Food Hygiene* (CXC 1-1969) and that the Chairperson of CAC45 had noted that adoption of the revision to CXC 1-1969 had concluded an extensive revision of that text, foundational to many Codex food hygiene texts and extensively cross-referenced in other Codex texts. It was therefore necessary to ensure that Codex texts were fully aligned with the latest version of CXC 1-1969 and CAC45 requested that CCFH undertake work on the alignment of all food hygiene texts with CXC 1-1969, in line with its work management approach. It was noted that this item would be further considered under agenda item 9.
9. The Secretariat also noted that the work on the future of Codex, which considered future working modalities, was relevant for all committees and Members and that consultations with chairpersons and host secretariats

¹ CRD21 (Opening remarks)

² CRD1 (Division of competence and voting right between the European Union and its Member States)

³ CX/FH 22/53/1

⁴ CX/FH 22/53/2; CRD2 (Morocco and Thailand)

had been initiated while there would be an opportunity for Members and Observers to provide their input in March-April 2023. With regard to new food sources and production systems (NFPS), she noted the recommendation of CCEXEC83 to encourage Members to submit proposals related to NFPS using existing Codex mechanisms, and Codex subsidiary bodies to consider NFPS in their deliberations. Noting the ongoing work on monitoring of the use and impact of Codex standards, she highlighted that CXC 1-1969 was one of the texts included in the pilot survey on use and impact and that respondents indicated a high degree of familiarity and good level of satisfaction with it.

Matters for action

Review of the methods of analysis for irradiated foods contained in the General Methods for the Detection of Irradiated Foods (CXS 231-2001)

10. Brazil recalled that following CCFH51 (2019) they had reviewed the methods in the *General Methods for the Detection of Irradiated Foods* (CXS 231-2001) to determine their fitness for purpose and their possible conversion to performance-based criteria. Brazil stated that, after careful review, it was clarified that there was no possibility to convert the existing methods of analysis in CXS 231-2001 to performance-based criteria for the following reasons:
 - The methods of analysis contained in CXS 231-2001 were used for labelling purposes and only provided an estimate of positive or negative results. As such, the necessary parameters to establish performance-based criteria such as accuracy, applicability, detection limit, determination limit, precision, repeatability intra-laboratory and reproducibility inter-laboratory were not available.
 - The maximum and minimum level, which were needed for performance-based criteria, were not specified for the methods of analysis in CXS 231-2001.
11. Brazil noted the overall support from Members and Observers in response to CL 2020/55-FH to the proposal regarding performance criteria; the removal of the year of the approval of the methods of analysis in order to be consistent with CCMAS's decision on the *Recommended Methods of Analysis and Sampling* (CXS 234-1999); the change of the names of the commodities to provide further clarity; and that the methods of analysis in CXS 231-2001 were fit-for-purpose. In addition, Brazil drew the attention of CCFH53 on EN 13783 which, in their view, no longer be applied to "raw minced meat" due to the lack of detailed information on validation for this commodity.
12. CCFH53 noted the observation of one Member that the fitness for purpose of EN1785 to detect radiation-induced 2-alkylcyclobutanone in irradiated foods should be reviewed since 2-alkylcyclobutanone was reported to be present in some non-irradiated foods and thus, EN1785 may be inappropriate to distinguish irradiated foods from non-irradiated foods in such cases. CCFH53 also took note of written comments on whether it was appropriate to modify the principle of EN1785 to gas chromatographic/mass spectrometric analysis to align with the original document and whether to specify that EN13751 was a screening method (CRD2). CCFH53 agreed to bring these issues to the attention of CCMAS.

Conclusion

13. CCFH53:
 - i. took note of the information provided in the working document and the additional information provided by the Codex Secretariat during the session;
 - ii. encouraged Members and Observers. on occasion of the 60th anniversary of Codex in 2023, to plan and implement activities to build awareness of Codex and to engage high level political support for Codex work; and
 - iii. encouraged Members and Observers to actively engage in opportunities to contribute to the discussions on the future of Codex.
14. CCFH53 further agreed:
 - i. to inform CCMAS that it was not possible to establish performance criteria for the methods of analysis for irradiated foods contained in the *General Methods for the Detection of Irradiated Foods* (CXS 231-2001) as they were detection methods recommended solely for the purposes of food labelling and the necessary parameters (e.g. accuracy; applicability; detection limit; determination limit; precision) that enable establishment of performance criteria were not available;
 - ii. to recommend to CCMAS that the methods of analysis for irradiated foods listed in CXS 231-2001 were still fit-for-purpose. CCFH53 also proposed that CCMAS consider: whether EN13751 should be specified as a screening method; and the applicability of EN 13783 to raw minced meat since no information was found on validation for this commodity; and to note the report of one Member that 2-alkylcyclobutanone was also present in some non-irradiated foods and hence EN1785 may need

further consideration as a method for detection of irradiated foods.

- iii. to recommend that the methods in CXS 231-2001 should be included in CXS 234-1999 with the changes as proposed in Table 1 (see Appendix II), subject to confirmation of the assigned method type by CCMAS and resolution of the issues identified in point ii; and
- iv. following the inclusion of the methods of analysis for irradiated foods in CXS 234-1999, to recommend that CAC revoke the *General Methods for the Detection of Irradiated Foods* (CXS 231-2001).

MATTERS ARISING FROM THE WORK OF FAO AND WHO (INCLUDING JEMRA) (Agenda Item 3)⁵

15. The FAO Representative, on behalf of both FAO and WHO, expressed appreciation to all the Members who supported the work of the Joint FAO/WHO Scientific Advice Programme, notably the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA).
16. The Representative provided a summary of work undertaken since CCFH52, as well as the planned future work related to CCFH and highlighted the following:
 - JEMRA published, since CCFH52, five full reports on: i) Ranking of low moisture foods in support of microbiological risk management: meeting report and systematic review⁶; ii) Microbiological hazards in spices and dried aromatic herbs: meeting report⁷; iii) Risk assessment of food allergens, part 1: review and validation of Codex Alimentarius priority allergen list through risk assessment: meeting report⁸; iv) *Listeria monocytogenes* in ready-to-eat (RTE) foods: attribution, characterization and monitoring⁹; and v) Control measures for Shiga toxin-producing *Escherichia coli* (STEC) associated with meat and dairy products¹⁰.
 - Three JEMRA meetings had been held since March 2022 on the following topics: i) Prevention and control of microbiological hazards in fresh fruits and vegetables (part 4)¹¹; ii) Pre-and post-harvest control of non-typhoidal *Salmonella* spp. in poultry meat¹²; iii) Microbiological risk assessment of *Listeria monocytogenes* in foods¹³ and one ad hoc expert consultation on risk assessment of food allergens (evaluation of exemptions for derivatives of priority food allergens). Four summary reports related to these meetings, including an update on recommended allergen threshold levels for milk and sesame¹⁴, were published since March 2022.
 - One JEMRA workshop on the safety and quality of water used with fresh fruits and vegetables was conducted in Honduras with participation from ten Latin American countries.
17. The Representative informed CCFH53 that meeting planning for 2023 was already underway and JEMRA had scheduled a meeting on pre- and post-harvest control of *Campylobacter* spp. in poultry meat. He further noted that JEMRA would also be convening meetings on a farm-to-table risk assessment of *Listeria monocytogenes* (part II); viruses in foods; and risk assessment of *Salmonella* and *Campylobacter* in poultry meat.
18. The Representative of WHO brought the attention of CCFH53 to the work of the Foodborne Disease Burden Epidemiology Reference Group (FERG), explaining its three-year strategic framework and its main activities. The Representative also highlighted the recent activities of the joint FAO/WHO International Food Safety Authorities Network (INFOSAN) including the launch of the new INFOSAN Community Website noting that INFOSAN continued to develop and strengthen the Network as well as capacities for preparedness and response to food safety incidents.
19. Specific scientific and microbiological risk assessment information was provided under the relevant agenda items. The JEMRA Secretariat also indicated their availability for ongoing dialogue and exchange with CCFH and in particular chairs and co-chairs of electronic working groups (EWG). To facilitate such ongoing dialogue JEMRA has set time aside on the last Tuesday of every month from 16:00 to 17:00h CET (referred to as

⁵ CX/FH 22/53/3

⁶ <https://www.fao.org/3/cc0763en/cc0763en.pdf> and <https://www.who.int/publications/i/item/9789240044036>

⁷ <https://www.fao.org/3/cb8686en/cb8686en.pdf> and <https://www.who.int/publications/i/item/9789240045187>

⁸ <https://www.fao.org/3/cb9070en/cb9070en.pdf> and <https://www.who.int/publications/i/item/9789240042391>

⁹ <https://www.fao.org/3/cc2400en/cc2400en.pdf>

¹⁰ <https://www.fao.org/3/cc2402en/cc2402en.pdf>

¹¹ <https://www.fao.org/3/cc2007en/cc2007en.pdf> and https://cdn.who.int/media/docs/default-source/food-safety/jemra/jemra-microbiological-hazards-in-fruits-vegetables-part4-summary-report.pdf?sfvrsn=d8813293_5

¹² <https://www.fao.org/3/cc2579en/cc2579en.pdf> and https://cdn.who.int/media/docs/default-source/food-safety/jemra/jemra-meeting-salmonella-poultry-meat-summary-and-conclusions-oct2022.pdf?sfvrsn=85adc558_3

¹³ <https://www.fao.org/3/cc2966en/cc2966en.pdf> and https://cdn.who.int/media/docs/default-source/food-safety/jemra/jemra-listeria-meeting-summary-and-conclusion.pdf?sfvrsn=3f502119_3

¹⁴ <https://www.fao.org/3/cb9312en/cb9312en.pdf> and https://cdn.who.int/media/docs/default-source/food-safety/jemra/2nd-allergen-summary-report-milk-and-sesame-apr2022.pdf?sfvrsn=35130ec2_7

JEMRA office hours), but could also be available at another mutually agreed upon time. To make the best use of this time, the JEMRA Secretariat requested one-week advance notification to jemra@fao.org or jemra@who.int, indicating the topic for discussion, so as to facilitate preparation for the meeting.

Conclusion

20. CCFH53:

- i. noted the information provided by FAO and WHO and expressed appreciation for the valuable work that had been undertaken over the past eight months;
- ii. encouraged Members to utilize the JEMRA office hours to discuss ongoing work and requests for scientific advice; and
- iii. acknowledged that the future work plan of JEMRA would be demanding and stressed the importance of prioritizing any new work.

INFORMATION FROM THE WORLD ORGANISATION FOR ANIMAL HEALTH (Agenda Item 4)¹⁵

21. The Representative of the World Organisation for Animal Health (WOAH) could not join the session but submitted a statement to the meeting noting that WOAH continued to follow the work of CCFH to ensure engagement, as relevant, or to align relevant WOAH standards. In particular the willingness to engage in any revision of the *Guidelines for the Control of Campylobacter and Salmonella in Chicken Meat* (CXG 78-2011), was noted. The Representative also highlighted ongoing updates to Chapter 6.10. Responsible and prudent use of antimicrobial agents in veterinary medicine, of the *Terrestrial Code* indicating that it considered the outputs of the Codex Task Force on Antimicrobial Resistance to ensure alignment and that work to revise Chapter 5.2 was forthcoming. The relevant WOAH Specialist Commissions had in September 2022 agreed to prioritise work to revise the certification procedures of both the *Aquatic Code* and *Terrestrial Code*, to include more information on electronic veterinary certification and to align them with the recently updated *Codex Guidelines for design, production, issuance and use of generic official certificates* (CXG 38-2001). Finally, the Representative highlighted the rebranding of WOAH noting that it aimed to promote the overarching purpose and main activities of the organization in a concise and dynamic way.

Conclusion

22. CCFH53 noted the ongoing commitment of WOAH to work with CCFH on relevant areas and the importance of ongoing collaboration in order to continue to be effective in the future.

PROPOSED DRAFT GUIDELINES FOR THE CONTROL OF SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI* (STEC) IN RAW BEEF, FRESH LEAFY VEGETABLES, RAW MILK AND RAW MILK CHEESES, AND SPROUTS (Agenda Item 5)¹⁶

23. Chile, speaking also on behalf of France, New Zealand and the United States of America introduced the item and recalled the efforts that had been made since CCFH52 to progress the text including in the EWG, through a virtual meeting of the working group open to all members, and a physical working group (PWG) immediately prior to the Session. She further noted that the co-chairs had revised the general section and the annexes (except sprouts) based on the written comments received and the discussions in the PWG on the general section and part of the annex on raw beef which were available as CRD13 and proposed that this document be considered for further discussion.

Discussion

24. CCFH53 considered the revised proposed draft guidelines including the annexes on raw beef and raw milk and raw milk cheeses contained in CRD13 section by section. Unless otherwise stated below CCFH53 agreed with the revisions in CRD13 and in addition to the changes outlined below made editorial corrections, and amendments to improve accuracy, clarity and consistency within the proposed draft guidelines.

General section

Objective

25. In response to concerns raised in the PWG regarding the need to qualify that raw milk as indicated in the guidelines was intended for drinking and not for further processing, the Chairperson of the Working group

¹⁵ CX/FH 22/53/4

¹⁶ CX/FH 22/53/5; CX/FH 22/53/5 Add.1 (Argentina, Australia, Canada, Colombia, Costa Rica, Cuba, Egypt, India, Japan, Kenya, Malaysia, Morocco, Peru, Republic of Korea, Saudi Arabia, Singapore, Thailand, United Kingdom, USA and IDF/FIL); CRD3 (Brazil, European Union, India, Indonesia, Morocco, Philippines and Uruguay); CRD9 (Dominican Republic); CRD13 (Report of the PWG on the Proposed Draft Guidelines for the Control of Shiga Toxin-Producing *Escherichia coli* (STEC) in Raw Beef, Fresh Leafy Vegetables, Raw Milk and Raw Milk Cheeses, and Sprouts); CRD17 (Nigeria); CRD18 (Thailand)

recalled the history of discussions that had led to the current title of raw milk and raw milk cheeses. Noting that the annex on this topic clarified this issue, for clarity and consistency it was agreed to also include “intended for drinking” after raw milk in the objective.

Scope and Use

26. As further clarification with regard to raw milk, a footnote was added to the reference to raw milk in the scope to clarify that these guidelines present specific guidance for control of STEC related to raw milk intended for drinking and for production of raw milk cheeses.

Definitions

27. CCFH53 confirmed their agreement with the revised definition for; i) fresh leafy vegetables with an editorial change to put a slash between coriander and cilantro in recognition that in some countries these were considered to be the same product; and ii) sprouts, confirming that it should include reference to both seeds and beans in line with the JEMRA report; and control measures as proposed by the PWG.
28. The footnote to the definition of raw milk, referring to the impact of temperatures between 40°C and pasteurization temperatures, was revised with the first sentence moved to become the second sentence for ease of understanding.
29. There was extensive discussion on the proposed footnote 9 in CRD13 to the definition of STEC which indicated that generally production of the Shiga toxin alone was not sufficient to cause severe illness without adherence of bacterial cells to gut epithelial cells. Some members were of the view that this footnote was potentially misleading and could be interpreted that the guidelines were only focused on controlling STEC that had both *stx* and adherence genes, which in their view was not the case, they further noted that the differences in risk associated with the different virulence genes were adequately described in the section on “Laboratory analysis criteria for detection” of STEC and Table 1 in the guidelines. Others were of the view that it was useful to indicate early in the document that there were differences in risk between STEC with different virulence genes to enhance understanding of the risk-based approach presented in these guidelines. JEMRA indicated that STEC with the *stx_{2d}* gene alone had caused severe illness. Based on this CCFH53 agreed to delete the footnote.

Primary production to consumption approach to control measures

30. Responding to a concern in the second paragraph that GHPs were not sufficiently broad to cover the foundation of most food safety control systems, it was agreed to also include “prerequisite programmes” which addressed the concern and also ensured consistency with both the *Guidelines for the Control of Nontyphoidal Salmonella spp. in Beef and Pork Meat* (CXG 87-2016) and the *General Principles of Good Hygiene* (CXC 1-1969). In the same paragraph, “food safety control system” was replaced with “food hygiene system” which was defined in the CXC 1-1969 to avoid introduction of a new term.

Primary production control measures

31. In order to provide clarification of the term “plants” in this section, additional text was added to indicate these were vegetation (crops) rather than physical processing facilities.
32. In response to a proposal that this and the two subsequent sections should be sub-sections under primary production, it was clarified that the structure followed that of the *Guidelines for the Control of Nontyphoidal Salmonella spp. in Beef and Pork Meat* (CXG 87-2016) and for consistency it should remain the same.

Implementation of control measures

33. The title of this section was changed to “Validation, implementation and verification of control measures” to better reflect the content of the section.
34. As some delegations noted that the meaning of “food safety outcome” in the second paragraph of this section was not clear, it was agreed to change this to “food safety objective” which is defined in Codex.

Validation

35. Concerns were expressed on the second sentence in this section in square brackets noting that it was proposing something impossible to achieve and revised text based on the *Guidelines for the Validation of Food Safety Control Measures* (CXG 69-2008) was proposed. However, as that proposal was very similar to the text in the subsequent paragraph, and thus already covered, it was agreed to delete the text in square brackets.

Regulatory system

36. There was extensive discussion on the second paragraph of this section and whether competent authorities “should” or “may” assess the documented process control systems of a food business operator (FBO). Some were of the view that this was too big a burden to place on the competent authorities while others expressed

the view that if competent authorities choose to provide guidance on the development of food hygiene systems, as indicated as an option in the previous paragraph, then they should follow up by assessing such systems. It was agreed to use “should” in this paragraph, noting that the flexibility was provided in the previous paragraph.

37. Responding to a request for clarification between “food hygiene system” in the first paragraph of this section and “process control systems” in the second paragraph, it was noted that the first referred to food hygiene systems broadly while the second was specifically addressing process control for STEC.
38. There was also a proposal to change the title to “Competent authority responsibility” but in order to retain consistency with CXG 87-2016 the existing title was maintained.

Food business operators

39. In the second paragraph (second to last sentence) it was proposed to replace “where appropriate” with “in particular for those processes for which correlation may be less evident (e.g. water, milk and dairy)” so as not to give the impression that periodic testing should be regularly applied since it was of limited value. In the debate that followed, it was noted that there was no correlation between indicator organisms and STEC, and also that “where appropriate” gave flexibility to introduce periodic testing, if needed, for example after a potential contamination event such as after heavy rains or flooding. JEMRA confirmed that there were times when periodic testing was appropriate such as to establish a baseline, or after specific events such as heavy rainfall or an animal/wildlife incursion. It was agreed to retain the original text.
40. The last sentence of the paragraph was revised to clarify the link between testing and corrective actions, as it was such actions that enabled testing to contribute to reducing prevalence.

Laboratory analysis criteria for detection of STEC

41. In the second-to-last paragraph of this section, the words “and a better estimation of food safety risk” were added to clarify that having an isolate in addition to molecular data would facilitate further epidemiological investigation and therefore contribute to the estimation of risk. In response to a concern as to whether this paragraph adequately addressed the need for data on other relevant traits such as antimicrobial resistance it was noted that the reference to characterization of STEC adequately covered any other traits that one may want to look for.

JEMRA scientific advice

42. Before consideration of the annexes, the FAO Representative provided an overview of JEMRA's work related to STEC in beef, dairy and leafy greens, addressing aspects such as interventions and challenges with testing of irrigation water or product for monitoring for STEC. The Representative presented the effectiveness of specific interventions for control of STEC in beef, raw milk, raw milk cheese and leafy greens and addressed questions posed by the PWG regarding recommendations for growing of leafy greens in proximity to animal rearing, harvest buffer zones following in-field contamination and the storage temperature of leafy greens. In conclusion, the Representative highlighted that there were no single interventions for removing STEC once a raw product has been contaminated. For the control of STEC, prevention was key and multi hurdle strategies were needed. He further noted that interventions did not need to be STEC specific to be effective, and good agricultural and good hygiene practices were beneficial for the control of STEC. However, vigilance was required through the food chain as the loss of control downstream would negate any interventions taken upstream.

Annex 1: Raw beef

43. CCFH53 agreed some changes throughout the document to ensure that serogroup and serotype were used appropriately and in the correct location e.g. STEC serotype O157:H7. In addition, references to specific STEC prevalence and concentrations were removed and replaced with more descriptive language in recognition that such numbers were usually context specific and so could vary.

Introduction

44. In the second-to-last paragraph, the second sentence was revised to indicate that the practices listed were examples but not necessarily an exclusive list and “knife scoring” was removed as the context in which it would be used (e.g. marinating of meat) had been removed from the annex so it was no longer relevant.
45. In the last paragraph, the footnote to non-intact beef products was moved to the definition of non-intact beef products in the definitions section and an additional sentence was added at the beginning to clarify that mixing of tissues from one or multiple animals/herds can increase the likelihood of spreading and diluting STEC contamination of ground/minced raw beef.

Figure 1 – Process Flow Diagram

46. The words "Primary production" were deleted from the top of the process-flow diagram and words "post-mortem inspection" were inserted between "splitting" and "carcass-washing". While other proposals were made for the order of the steps it was recalled that the guidelines indicated that the steps were generic and that not all steps may occur or be in the order shown at any particular establishment. Therefore, it was agreed that no further changes would be made.

Vaccination

47. Recalling the extensive discussions on vaccination in the PWG, the EWG Chair proposed a revised paragraph which rather than refer to commercial aspects tried to focus more on aspects related to administration regime among others to better reflect the available data on efficacy and variations in efficacy. The new text was agreed with some editorial amendments to enhance clarity.

Good management practices at primary production

48. One Member questioned the inclusion of guidance on slatted housing as it had not been considered by JEMRA in their assessment of control measures. It was clarified that this was based on practice, noting that a balance between overcrowding and understocking was needed to ensure animals did not contaminate each other with faecal material and that faeces were pushed through the slatted floor system.

Slaughter and dressing

49. Concern was expressed at the complexity of the guidance given in the third paragraph on how the impact of interventions might be quantified and it was suggested that the text be simplified to read "The impact of interventions should be validated" and the rest of the text deleted. While there was general support for the introduction of validation, some Members felt it was still useful to have the remaining text to give some guidance on how such validation could be undertaken. It was agreed to retain these, indicating they were just examples in recognition that there may also be other ways to undertake validation.

Specific control measures at lairage and antemortem inspection

50. There was a proposal to delete reference to straw bedding in lairage in the third paragraph as this had not been covered in the JEMRA work. However, some Members expressed the view that it was useful to give guidance on how a dry bedding area might be achieved and so it was retained as an example. Concern was also expressed about limiting time in lairage, as it seemed counter to guidance that animals should be rested before slaughter and noted that it may not always be possible to limit time in lairage. JEMRA noted that their findings indicated that time should be minimized, as extending the time may lead to an increase in shedding of STEC. In order to find a balance between what was practical and what was optimal for STEC control "whenever possible" was added.
51. In the subsequent paragraph "clean water" was replaced with "fit-for-purpose water" as being more appropriate to the context. In the last paragraph, reference to social stress was removed as no reference to this had been included in the JEMRA assessment.

Specific control measures at stunning, sticking and bleeding

52. In the third paragraph, "skull" was replaced with "head meat" in recognition that it was contamination of the meat that was of concern.

Specific control measures at bunging

53. A description on bunging was added as a first sentence to align with other sections where a description of the step had been provided.

Specific control measures at post-mortem inspection

54. Examples of physical contaminants were added to the second bullet for clarity, given the focus of the guideline was a microbiological hazard. Specific control measures at carcass washing
55. At the end of the first paragraph, "of contamination" was added for clarity. One Member expressed concerns about washing with water under pressure and suggested that specific guidance on the topic may be useful. However, it was agreed that the current text which indicated "care should be taken" was adequate to convey that message. "Such" biocidal treatments was replaced with "some" since all may not be applied with hot water.

Carcass washing with biocides

56. The penultimate sentence referring to factors affecting the effectiveness of biocidal treatments was removed as it was covered in a previous paragraph.

Specific control measures at carcass fabrication (mechanical tenderization, grinding/mincing)

57. There was a proposal to make reference to when biocides are approved by competent authorities in the third paragraph. However, it was noted that this paragraph was more focused on the scientific facts and that a statement on approval by competent authorities had been included in the general section so as to avoid the need to repeat this concept throughout the text. To add further clarity the paragraph which had two concepts, was split into two sentences and the word "precursor" was added before the word "materials" as the term "precursor materials" in the industry was considered to cover both meat and fat.
58. In the fourth paragraph of this section, in the chapeau, "i.e" was replaced with "e.g." to better reflect that the text in parenthesis was only intended as examples. In bullet 4 "as approved" was deleted as the aspect of approval by the competent authority was addressed in an overarching manner in the general part of the guidelines.
59. A range of views were expressed in the original third bullet of this paragraph, which addressed testing with some Members proposing deletion due to the limitations of testing, and that it could be interpreted as supporting routine monitoring. In contrast, some other Members supported its retention, as the bullets in this paragraph just presented options to be used as appropriate and this particular one on testing may also be useful in some scenarios. If bullet 3 was to be retained, it was proposed that there needed to be further clarity of the text and indications of possible scenarios when testing could be useful. Following a comment that bullet 3 as different in nature than the other examples given, it was agreed to remove the bullet on testing from the list and address it in a separate paragraph. CCFH53 agreed to a revised paragraph which indicated some of the specific conditions in which testing might be appropriate and clarified that for the purpose of these guidelines, the words "a negative result" and "non-detected" had the same meaning.

Annex 3: Raw milk and raw milk cheeses

Introduction

60. There was extensive discussion on the footnote for thermization and concerns that its efficacy in terms of pathogen reduction might be misunderstood by users of the guidelines. The co-chairs of the EWG clarified that the footnote was only added as thermization may not be a well-known term and it was only included in the text to indicate that consuming raw drinking milk or raw milk cheeses without any control measures was associated with a higher risk of illness than drinking pasteurized milk or eating cheeses made from milk subject to heating such as thermization. Thermization had already been defined in *Code of Hygienic Practice for Milk and Milk Products* (CXC 57-2004), therefore the footnote was revised to incorporate the key concepts of that definition for clarity. Upon agreement of the footnote, the square brackets were removed from the related sentence in paragraph 2.
61. Paragraph 6 was revised to incorporate prerequisite programmes including GHP, rather than referring to surveillance and monitoring since "Prerequisite programmes" as defined in CXC 1-1969 covered a broad range of practices and procedures. A proposal to include reference to HACCP was rejected as there were no critical control points (CCPs) identified in the case of raw milk and raw milk cheese production.

Control measures for STEC for dairy herds at the dairy farm

62. There was a proposal to replace "cows" with "animals" in the first paragraph to be more inclusive; however as available data related mainly to cows, it was agreed to retain as written. An addition was made to the end of the first bullet to provide more clarity on the meaning of the term "excess manure".
63. It was agreed to remove the square brackets in the second paragraph with some editorial amendments to enhance clarity, including the insertion of the word "manage" as an overarching term to cover any actions that may be taken to reduce or minimize the risk of transmission from the indicated sources.
64. In the third paragraph, the first bullet was simplified for clarity, noting that the intent was that newborn and young animals should be segregated from each other as well as segregated from mature animals; and in the second bullet it was proposed to change cattle to animals. Following consultation with JEMRA, CCFH53 determined that doing so was not an over extrapolation of the available data, and the change was made.
65. The last sentence of the fourth paragraph was revised to provide greater clarity and since it related to on farm activities, good hygienic practices were replaced with good agriculture practices. In the fifth paragraph, the term "validated" was added before "control measures" so as to indicate that unless validated for the specific context, they may not be very effective.

Control during processing

66. As was the case in the annex on raw beef, specific concentrations of microorganisms were removed from the second paragraph. The text in parentheses in the first line of the third paragraph was revised to clarify that heating increased separation of the whey from the curd.
67. One Member proposed that more specific guidance particularly in relation to GHPs should be provided in this section. It was recalled that this annex should be read in conjunction with the general section of the guidelines

which addressed GHPs.

Validation and monitoring of control measures

68. There was a proposal to add HACCP to the first paragraph in addition to GHPs since this section related to validation which was essential in case HACCP was applied. Some concerns were expressed with this proposal as it had been agreed that HACCP was not relevant in these guidelines as CCPs had not been identified. It was suggested that rapid acidification or ripening period might be CCPs and so it was agreed to include reference to HACCP with these examples.

Verification of control measures – At the dairy farm

69. In the third paragraph it was proposed to replace GHPs with GAPs as this paragraph related to activities on the farm. However, since this paragraph also covered the hygiene and sanitation of milking equipment and milk tanks, GHPs were still relevant and therefore both GHPs and GAPs were included.

Verification of control measures – Milk collection at the dairy establishment

70. It was agreed to change “surveillance” to “monitoring” in this and subsequent steps to better reflect the nature of the activity undertaken.

Verification of control measures – During processing

71. In the first paragraph, “milk quality” was changed to “milk safety” since this related to STEC control rather than the quality of the milk. In the third paragraph a reference to the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Food* (CXG 21-1997) was included as it also made reference to sampling plans.

Figure 2

72. It was agreed to add brining as an additional step between form/press/drain and aging.

Annex 2: Fresh leafy vegetables and Annex 4: Sprouts

73. CCFH53 did not have time to discuss these annexes. However, it was noted that the definitions of fresh leafy vegetables and sprouts were agreed upon in the general section and should now be considered in these annexes. In addition, the further work should take into account the report of the PWG that indicated agreement that microgreens be considered as part of fresh leafy vegetables annex.
74. CCFH53 expressed appreciation to the chair and co-chairs of the EWG for the great work done and agreed that there were no outstanding issues in the general section and annexes 1 and 3 of the proposed draft guidelines and that the work on the outstanding annexes should continue between this session and CCFH54.

Conclusion

75. CCFH53
- i. noting that there were no outstanding issues to be addressed in the general section and the annexes on raw beef and raw milk and raw milk cheeses, agreed to forward the proposed draft Guidelines and these two annexes for adoption at Step 5/8 by CAC46 (APPENDIX III);
 - ii. agreed to return the annexes on fresh leafy produce and sprouts to Step 2/3 for redrafting and circulation for comments;
 - iii. agreed to establish an EWG, chaired by Chile and co-chaired by New Zealand and the United States of America, and working in English (and noting that comments would also be accepted in Spanish), to:
 - a. further develop the annex on fresh leafy produce using CRD13 as a basis and taking into consideration the general section of the guidance as agreed at CCFH53;
 - b. continue the development of the annex on sprouts describing interventions relevant to control STEC, taking into consideration the written comments that were submitted through the Online Commenting System (OCS) in response to the CL 2022/56-FH, and CRDs submitted at CCFH53, as well as the general section of the guidance as agreed at CCFH53; and
 - c. prepare a report and revised text to be submitted to the Codex Secretariat 3 months before CCFH54 for circulation for comments at Step 3;
 - iv. requested that efforts be made to convene a virtual meeting of the EWG working in English, French and Spanish between CCFH53 and CCFH54 to facilitate progression of the work; and

- v. agreed to establish a PWG, chaired by Chile and co-chaired by New Zealand and the United States of America, working in English, French and Spanish to be held in conjunction with CCFH54 to consider all comments received and to prepare a revised proposal for consideration by plenary.

PROPOSED DRAFT GUIDELINES FOR THE SAFE USE AND RE-USE OF WATER IN FOOD PRODUCTION (Agenda Item 6)¹⁷

JEMRA scientific advice

76. Before embarking on discussions on the proposed draft guidelines, the FAO Representative provided an overview of JEMRA's work related to water since 2016. This work had been undertaken in response to a request by CCFH for advice on how to address clean and potable water with texts under development by the committee. In response, JEMRA recommended the fit-for-purpose concept to address the various issues the committee faced, noting that fit-for-purpose water required a risk-based approach and application of appropriate risk mitigation measures.
77. JEMRA had also addressed the application of fit-for-purpose water in specific commodity areas. A decision tree tool and microbiological criteria had been developed for fresh produce, where it was noted that the main considerations were whether the product would be eaten raw or not and the water would come in contact with the food or not, and based on a qualitative risk assessment, determination of risk management options to mitigate risk. Field testing of the re-use water decision trees indicated ease of use by FBOs
78. For fishery products, the decision tree developed differentiated between fish harvested from fresh or sea water and was applicable from processing on fishing vessel onwards.
79. JEMRA also provided clarification on the use of microbiological criteria and indicator organisms. For fresh fruit and vegetables, it was noted that there was no direct correlation between indicator organisms and the presence of pathogens. However, case studies for fishery and dairy products demonstrated that indicator organisms could be considered as predictors of pathogens, such as *Listeria monocytogenes*. JEMRA indicated that microbiological criteria may be useful for verification of operational control but should be established on a case-by-case basis; noting that microbiological criteria for characterizing water quality and safety in production and processing should be science-based. However, improvements in the available analytical methodologies for verifying water quality were also needed.
80. A summary of technologies that could be used to mitigate risks associated with the use of fit-for-purpose water was also provided.

Report of the EWG

81. Honduras, speaking on behalf of Chile and the European Union, introduced the item and recalled the efforts that had been made since CCFH52 to progress the text including in the EWG, through incorporation of the scientific advice provided by JEMRA, and a physical working group (PWG) immediately in advance of the session. A summary of the discussions and progress made in the PWG was provided and noted that a revised version of the proposed draft guidelines and annex 1 on fresh produce based on the written comments received and the discussions in the PWG had been presented in CRD20. It was proposed that this document be considered for further discussion.

Discussions

82. CCFH53 considered the revised proposed draft guidelines including the annex on fresh produce contained in CRD20 section by section. Unless otherwise stated below, CCFH53 agreed with the revisions in CRD20 and in addition to the changes outlined below made editorial corrections, and amendments to improve accuracy, clarity and consistency within the proposed draft guidelines.

Introduction

83. As the scope of the guidelines was not specific to drinking water it was agreed to delete reference to safe drinking water at the beginning of paragraph 2 and just refer to water.
84. A proposal was made to change "water safety" to "food safety" in the fourth paragraph, since water was part of food. This was rejected as the focus of this document was water safety and it was considered that changing to food safety changed the sense of the text and reduced clarity.

¹⁷ CX/FH 22/53/6 Rev., CX/FH 22/53/6 Add.1 (Argentina, Australia, Canada, Colombia, Costa Rica, Cuba, Egypt, India, Iraq, Japan, Kenya, Malaysia, Morocco, Peru, Republic of Korea, Singapore, Thailand, United Kingdom, Uruguay, USA and Consumer Goods Forum, FAO, Food Industry Asia, ICBA, IDF/FIL), CRD4 (Brazil, EU, India, Morocco, Norway and the Philippines); CRD 9 (Dominican Republic); CRD11 (Syrian Arab Republic); CRD16 (Republic of Korea); CRD17 (Nigeria); CRD18 (Thailand); CRD20 (Report of the PWG on the Proposed Draft Guidelines for the Safe Use and Reuse of Water in Food Production and Processing)

85. The last sentence of paragraph 5 was revised to refer to the “right type of water” rather than the “right water safety” for clarity.
86. Clarification was sought on whether hazard analysis was the appropriate term to use in paragraph six and it was suggested that a broader term like risk evaluation may be more appropriate. The co-chairs of the EWG noted that a hazard analysis, as described in CXC 1-1969 contained two elements, an analysis of the risk factors and consideration of the management options which was in line with the intent of this paragraph. It was therefore agreed to retain the original text.
87. It was noted that there was some overlap between the seventh paragraph and the purpose and scope of the document and it was suggested that this paragraph may not be needed. However, the Chair of the EWG highlighted that each paragraph had a different purpose as this paragraph highlighted the need for this work. To avoid possible confusion, it was agreed to delete Codex from paragraph seven so that the text reflected a more general need.
88. In paragraph 8, the word “safe” was deleted before “sourcing” as it was proposed that this could be interpreted as all water having to be safe at the source which seemed to contradict the purpose of these guidelines. As some concerns were expressed at the deletion, as this term was used widely in the guidelines and often incorporated the broader concept of sourcing, it was agreed that any further deletions of “safe sourcing” would be considered on a case-by-case basis.

Purpose and Scope

89. There was extensive discussion on the purpose and scope with the following views expressed:
- Potential physical and chemical hazards should be listed so that even though these were not addressed explicitly in these guidelines, it was clear that these also needed to be managed
 - Storage should be included in addition to production and processing
 - Potential allergens due to water treatment should be considered
 - Rather than referring to primary production and processing the scope should cover the food chain
 - Clarification was needed that the scope included those steps between primary production and processing such as those at the post-harvest stage
 - The exceptions such as household use were not very clear
 - Clarity was needed on whether retailers and food services should be included or excluded as depending on the nature of their activities the guidance may not be so relevant, although it was recognized that processing was part of some retail operators
90. In responding to the comments the Chair of the EWG recalled that the scope of the document was microbiological hazards, but that the need to also consider physical and chemical hazards was included in the General Principles; the exemptions could be deleted noting that such a list could never be fully comprehensive and it would be more appropriate to ensure the scope was clear to the extent that whatever was not mentioned would be understood as excluded; and that expanding the scope to the food chain may be too broad considering the content of the draft guidelines.
91. In the ongoing discussion, it was further noted that as allergens were chemical hazards, they would, therefore be excluded from the scope; as FBOs had been defined in CXC 1-1969, it may be more appropriate to use that term in the scope noting that more information on the FBO's primarily targeted by this text were included under the subsequent section on use; and that it was useful to clarify what microbiological hazards included. Taking the various views expressed into account a revised purpose and scope was proposed and with some edits was agreed as follows: *These guidelines provide a framework of general principles and examples for applying a risk-based approach to determine if the water to be sourced, used, and reused by FBOs involved in production and processing of relevant commodities is fit for purpose by addressing microbiological hazards, such as parasites, bacteria, and viruses.*

Use

92. In the first paragraph, food service operators, retailers, and traders were removed as these were not considered the primary target for these guidelines, although it was noted that some retailers undertake in-house processing. The text after “competent authorities” was removed as this term was defined in CXC 1-1969.
93. It was agreed to include the *Code of Practice on Food Allergen Management for Food Business Operators* (CXC 80-2020) and the *Code of Hygienic Practice for Meat* (CXC 58-2005) in the second paragraph, noting that these were relevant to either the general guidance or one or more of the annexes. As a means of future-proofing, an addition was made to the first sentence to refer to “all relevant Codex texts, including but not

limited to”.

General Principles

94. There was agreement with the first principle by removing a reference to “safe” as this was considered unnecessary since the definition of fit-for-purpose, included reference to “safe water”.
95. It was noted that the second principle contained two concepts, that of encouraging water re-use and that of ensuring re-use water was treated or reconditioned so that it was fit-for purpose. Some members disagreed with the statement that water re-use be encouraged and noted that they did not think it was the role of Codex to encourage such use but only to indicate how water could be safely reused and as such did not have a place in the general principles. It was agreed to remove this concept from the principles, although some members expressed their disappointment at this, as given dwindling water resources, they considered Codex had a role to play in promoting its sustainable use.
96. Reference to a HACCP system was removed from the end of principle three as this was already captured in food hygiene system, which as defined in CXC 1- 969 captured prerequisite programmes and HACCP. The same change was made in subsequent sections of the guidelines as appropriate.
97. An observer highlighted that the fourth principle contradicted the fit-for-purpose approach by indicating that water used as a food ingredient had to be potable in line with the WHO drinking water guidelines noting that in certain sectors such as the dairy sector, water recovered from food such as milk was safely used as a food ingredient. The JEMRA secretariat indicated that this principle was a paraphrase from the JEMRA report, where the term “whenever necessary” was also used¹⁸. Reflecting on a proposal to also add “whenever necessary” to the principle, many Members expressed concerns on such an addition and they considered it opened the door to bad practice and noted that a principle should not give such flexibility. Some also considered that in the example provided by an observer, water recovered from a food and re-used as an ingredient would not be considered water. In trying to find a way forward the chair of the EWG recalled that there was a definition for potable water in the guidelines and proposed to simplify the principle by simply indicating that when used as an ingredient, water should be potable and to remove reference to other guidelines. CCFH53 agreed with this proposal.

Definitions

98. Water fit-for-purpose: CCFH53 agreed with the proposed definition with the change of “risk factors” to “relevant factors” as the examples given were broader than risk factors and deletion of “in the water sources” from the end of the definition as it was not needed.
99. The definition for first-use water was deleted as this term had been removed from the text and was therefore no longer needed.
100. The definitions for risk assessment, food hygiene system, and HACCP system were also deleted as they were defined in the Codex Procedural Manual or the General Principles of Food Hygiene (CXG 1- 1969).
101. A definition on Wastewater as “used water that has been contaminated because of human activities”, which had been agreed by the PWG but erroneously omitted from the revised text presented in CRD20 was reinserted and agreed by CCFH53.
102. The reference to “other than first-use and reclaimed water” were deleted from the definition on recycled water as the first-use water no longer appeared in the document and reclaimed water had been defined separately and was distinguished from recycled water.

Section 1: Water fit-for-purpose assessment

103. In the fifth paragraph, the concept of storage was added to the chapeau. In the first bullet on descriptive assessments, it was clarified that the focus was on a review of documentation as well as an onsite visits rather than documentation of the evaluation and the word “written” was deleted to help avoid misunderstanding. It was noted that this concept needed to be clarified in the other language versions. The example in the last bullet was simplified to wastewater in agriculture of clarity and “in water” was deleted after pathogens as this may also refer to pathogens in the food.

Section 2: Water safety management

¹⁸ FAO and WHO. 2019. Safety and Quality of Water Used in Food Production and Processing – Meeting report. Microbiological Risk Assessment Series no. 33. Rome.

104. In the first paragraph “water quality values” were deleted as it was not clear what they were and to avoid any misunderstanding that it was necessary to consider all the risk management decisions listed, “as appropriate” was added to the end of the sentence.

Figure 1

105. All references to active and passive management were replaced with a description of what they were intended to mean; re-used water was replaced with re-use water for consistency with the text and in the second bullet of Purpose “food” was added before “safety”. As a consequence “active management” and “passive management” were deleted from the definitions section.

Annex I – Fresh produce

Purpose and scope

106. Microbiological quality was deleted before sourcing to avoid introduction of another term which was unclear and to be consistent with the use of safe sourcing in the general section.

Use

107. *Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods* (CXG 21-1997) was added since microbiological criteria were mentioned in the purpose and scope.

Definitions – Fresh produce

108. Nuts were retained and herbs were added to the definition. While a concern was expressed at including mushrooms, Members generally indicated that in their jurisdictions mushrooms were considered part of fresh produce so they were retained but edible was deleted as these guidelines related to food, hence it was not needed.. The co-chair of the EWG indicated that the definition should refer to produce being presented to the consumer in a raw state instead of only produce consumed by the consumer in a raw state since to better represent the scope of the guidelines as well as the scope of the work undertaken by JEMRA.

Water Sources

109. In the first paragraph ‘reclaimed’ was changed to ‘reconditioned’ for greater clarity. In addressing a query on hygienically collected rainwater (bullet 3) it was noted that the risk of rain water could vary according to how it was collected and stored, therefore it was important to clarify that for rainwater to be considered low risk collection systems and storage tanks must be hygienically maintained.
110. In the third bullet of the second paragraph the example of what far enough away might be was deleted as this was very context specific and depended on aspects like slope, soil type etc. and therefore a numerical example was not appropriate or helpful.
111. In the third paragraph (bullet 1), reclaimed water was removed as based on its definition it could not be considered to be of higher risk.

Figure 1

112. The title was changed to refer to fit-for-purpose assessment rather than risk assessment and the same change reflected in the decision-tree. Two of the questions were revised for clarity based on comments and practical application of the tool; references to WHO were removed; and waste was changed to water in the last question box.

Water for irrigation (including greenhouses)

113. In the second paragraph, suitable quality was changed to fit-for-purpose for improved clarity. In the third paragraph, bullet 7, “Where possible” was added to give flexibility.

Water for indoor storage and distribution facilities

114. In the second paragraph, bullet 1, reference to fertilizers and pesticides was removed since chemicals were outside the scope but the concept that agriculture inputs may introduce microbiological hazards and hence care was needed, was retained.

Harvest and post-harvest use of water - General

115. In the sixth paragraph, the text in parentheses was deleted as it was subjective, processing aids were deleted as these may be defined differently in different countries and were not needed for clarity and it was indicated that in order for biocides to maintain the microbiological quality of process water, the residual concentration levels should be maintained.

Documentation

116. “if necessary” was added to the third bullet of the first paragraph to provide flexibility as monitoring water temperature was not always possible.

Water fit for purpose assessment

117. “Labeling with instructions for the intended use” of the food was added to the list of bullets in the first paragraph as a factor to be considered in the assessment.

Table 1

118. The text in square brackets was deleted as Members were not convinced of its added value and some also preferred that the table be fully aligned with that produced by JEMRA. It was agreed to maintain the new footnote to the table to indicate that cooking as a step could be variable and that needed to be considered in assigning risk levels.

Indicator organism for monitoring hazards in water used in fresh produce production

119. “Bacterial” was added to clarify the type of faecal indicators bacteriophage were being compared to and “coliphage” was removed to avoid any confusion with bacteriophage.

Examples for determining water fit-for-purpose sampling frequency and microbiological criteria

120. Two new paragraphs were proposed to replace the existing second paragraph which was considered to be unclear and did not give sufficient guidance between level of risk and frequency of testing. The addition was agreed and a reference to Figure 3 was also added.

Figure 3

121. There were mixed views on whether or not to retain this figure noting it was from a source other than JEMRA, it did not make the linkage to risk, there was some overlap with Figure 1 and Table 1 and it was not consistent with the revised paragraph immediately proceeding it. Others were of the view that it was relevant as it did make the linkage to frequency of testing and provided more details than Figure 1 in that regard. It was agreed to retain the figure as an example but to make some revisions to ensure it was aligned with the preceding text and adequately linked to the different risk levels.

Examples of decision support system tools

122. It was noted that using paragraph numbers for cross referencing was not workable in the final version of the standard and CCFH53 asked the secretariat to address this in the text, as well as ensure consistent use of fit-for-purpose and that references to JEMRA were correct.
123. CCFH53 expressed appreciation to the chair and co-chairs of the EWG for the great work done and agreed that there were no outstanding issues in the general section and annex 1 of the proposed draft guidelines. It was noted that CCFH53 did not have time to discuss the two remaining annexes and that the work on those should continue between this session and CCFH54.

Conclusion

124. CCFH53
- i. noting that there were no outstanding issues to be addressed in the general section and the annex on fresh produce, agreed to forward the proposed draft Guidelines and Annex 1 for adoption at Step 5/8 by CAC46 (Appendix IV);
 - ii. agreed to return the annexes on fish and fishery products and dairy products to Step 2/3 for redrafting and circulation for comments;
 - iii. agreed to establish an EWG, chaired by the European Union and co-chaired by Chile and IDF (on an exceptional basis, due to the need for their specific expertise in developing the annex on dairy products) and working in English (noting that comments would also be accepted in French and Spanish), to:
 - a. further develop the annex on fish and fishery products taking into consideration the written comments that were submitted through OCS in response to the CL 2022/49-FH, and CRDs submitted at CCFH53, as well as the general section of the guidance as agreed at CCFH53;
 - b. initiate the development of the annex on dairy products, taking into consideration the general section of the guidance as agreed at CCFH53; and
 - c. prepare a report and revised text to be submitted to the Codex Secretariat 3 months before CCFH54 for circulation for comments at Step 3; and

- vi. agreed that a Physical Working Group (PWG), chaired by the European Union and co-chaired by Chile, working in English, French and Spanish may be established and held in conjunction with CCFH54 to consider all comments received and to prepare a revised proposal for consideration by plenary.

DISCUSSION PAPER ON REVISION OF THE *GUIDELINES ON THE APPLICATION OF GENERAL PRINCIPLES OF FOOD HYGIENE TO THE CONTROL OF PATHOGENIC VIBRIO SPECIES IN SEAFOOD* (CXG 73-2010) (AGENDA ITEM 7)¹⁹

125. Japan introduced this item with the updated project document taking into account the comments received in advance of CCFH53 (CRD10). He recalled that CAC33 (2010) adopted the *Guidelines on the Application of General Principles of Food Hygiene to the Control of Pathogenic Vibrio Species in Seafood* (CXG 73-2010) which in addition to general guidance aimed to provide detailed information on control measures for *Vibrio parahaemolyticus* and *Vibrio vulnificus* in bivalve molluscs. He noted that, based on the latest scientific information from the JEMRA meeting on *V. parahaemolyticus* and *V. vulnificus* in 2019, where updated risk assessment models/tools were applied, that there were advancements since CXG 73-2010 had been adopted. He drew the attention of CCFH53 to the factors that needed consideration including the emergence of highly pathogenic strains, in particular the Pacific Northwest (PNW) *V. parahaemolyticus* strain (ST36), significant geographical spread of infections of *Vibrio* spp in association with climate change, and potential demographic effects on increased risk in densely populated coastal regions. He portrayed key issues relevant to the control of *V. parahaemolyticus* and *V. vulnificus* which could be taken into consideration in the new work as follows:
 - updated microbiological monitoring methods including molecular-based approaches;
 - latest data on new pathogenic strains, their geographical spread and clinical incidence;
 - detection and characterization of *Vibrio* species;
 - novel methods including remote sensing-based techniques, satellite imagery and whole genome sequencing which would facilitate predicting periods of elevated risk and better control the viruses; and
 - practical interventions, including pre-harvest interventions (e.g. relaying at harvest such as reduced cooling times), and post-harvest treatments (e.g. high pressure processing, freezing and pasteurization), contributing to the reduction of risks of vibriosis associated with the consumption of seafood.
126. He further stressed that this work would include alignment of CXG 73-2010 with the *General Principles of Food Hygiene* (CXC 1-1969).

Discussion

127. CCFH53 noted general support for the proposal for the revision of CXG 73-2010.
128. Responding to a question on the availability of data on the prevalence of pathogenic *Vibrio* spp and related foodborne illness in the Caribbean region, the JEMRA Secretariat stated that data collected from the Latin American and Caribbean region from 2010 to 2019 had been compiled in MRA35 and would be available in the process of revising CXG 73-2010, but acknowledged the difficulty in having data from all geographic regions.
129. Several delegations proposed expanding the scope of the work to include other *Vibrio* spp such as *V. alginolyticus* and *V. cholerae* as well as seafood other than bivalve molluscs. The Chairperson reminded CCFH53 that the general section of CXG 73-2010 included all pathogenic *Vibrio* spp and all seafood, with the Annexes focusing only on *V. parahaemolyticus* and *V. vulnificus* in bivalves based on evidence of their impact on public health. The JEMRA Secretariat stated that, based on currently available data, *Vibrio*-related outbreaks associated with seafood were most commonly caused by *V. parahaemolyticus* and *V. vulnificus*. They further stated that the hazard characteristics of *V. alginolyticus* were similar to *V. parahaemolyticus*, indicating that similar interventions would be effective in controlling *V. alginolyticus*.
130. Japan, while acknowledging that *V. parahaemolyticus* and *V. vulnificus* were major contributors to vibrio outbreaks, agreed to consider if any updates were needed to the project document to accommodate those comments.

Conclusion

¹⁹ CX/FH 22/53/7; CX/FH 22/53/7 Add.1 (Australia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Egypt, India, Kenya, Norway, Peru, Saudi Arabia, Singapore, Uruguay and USA); CRD5 (European Union, Indonesia, Morocco and Philippines); CRD8 (United Kingdom); CRD9 (Dominican Republic); CRD10 (Revised project document for 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)); CRD11 (Syrian Arab Republic); CRD12 (ISO); CRD17 (Nigeria)

131. CCFH53 supported the new work proposal and agreed that the project document would be considered further in conjunction with forward work plan under Agenda Item 9.

DISCUSSION PAPER ON REVISION OF THE *GUIDELINES ON THE APPLICATION OF GENERAL PRINCIPLES OF FOOD HYGIENE TO THE CONTROL OF VIRUSES IN FOOD* (CXG 79-2012) (Agenda Item 8)²⁰

132. Canada introduced this item, recalling that Canada, with support from the Netherlands, reviewed the *Guidelines on the Application of General Principles of Food Hygiene to The Control of Viruses in Food* (CXG 79-2012) following the inclusion of the possible revision of CXG 79-2012 in the forward work plan at CCFH51 (2019). He summarised the main aspects to be considered for a possible in a revision of CXG 79-2012 as follows:

- expansion of the scope to address viruses other than hepatitis A virus (HAV) and norovirus (NoV) and emerging vehicles of foodborne illnesses such as frozen fruits;
- revision of interventions in the food chain focusing on process-specific control systems, surface disinfection as well as hand disinfection and food handler hygiene according to available evidence;
- possible inclusion of additional information on testing of foods for foodborne viruses taking into account technical advancements in viral detection in specific commodities and in assessing potential infectivity of viruses; and
- consideration of new scientific findings to control HAV and NoV in bivalve molluscs and in fresh produce made available since the publication of CXG 79-2012 including indicators to monitor seawater quality of molluscs growing areas and risk assessment models.

133. Based on the proposal in the discussion paper and taking into account comments from Members and Observers in response to CL 2022/50/OCS-FH, Canada identified five areas in which scientific advice from JEMRA would be required as follows:

1. An up-to-date review of the foodborne viruses and relevant food commodities of highest public health concern
2. A review of the scientific evidence on prevention and intervention measures and the efficacy of interventions in the food continuum
3. A review of the analytical methods for relevant enteric viruses in food commodities
4. A review of scientific evidence on the potential utility of viral indicators or other indicators of contamination
5. A review of the various risk assessment models with a view towards constructing more applicable models for wide use among member countries, including a simplified risk calculator

Discussion

134. CCFH53 expressed appreciation for the discussion paper and were generally in agreement with the conclusion and the identified areas on which to request scientific advice from JEMRA.
135. Delegations acknowledged the importance of the five areas identified for scientific advice, and expressed views on their prioritization, with many stressing the importance of items 1, 3 and 4, noting that the review (item 1) would be important to inform any consideration of analytical methods. Several delegations also noted the importance of item 2 but there was general agreement that item 5 could only be addressed following the collection of data through work in the other areas. One delegation stressed the importance of including in the review statistical data on the incidence of foodborne disease including mortality, morbidity and the potential for transmission via foods and prevalence in foods.
136. The JEMRA Secretariat stated that, despite the amount of work required, they would aim to address these areas in two JEMRA meetings. He further noted that the WHO Foodborne Disease Burden Epidemiology Reference Group (FERG) had included foodborne viruses in their work plan and outputs from that work may support the JEMRA work.

²⁰ CX/FH 22/53/8; CX/FH 22/53/8 Add.1 (Australia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Ecuador, Egypt, European Union, India, Iran, Kenya, Mauritius, Peru, Philippines, Saudi Arabia, Singapore, Uruguay, USA and IFT, International Frozen Food Association); CRD6 (Indonesia and Thailand); CRD8 (United Kingdom); CRD9 (Dominican Republic); CRD12 (ISO); CRD17 (Nigeria)

137. One delegation questioned whether the FERG could prioritize viruses as part of their work. He further drew attention of the need to establish a dose-response model for viruses. WHO confirmed that FERG could prioritize viruses and that development of a dose-response model would be a part of the JEMRA risk assessment.
138. In terms of the time-frame for the work, it was noted that the up-to-date review in particular would be needed in the development of a new work proposal on the revision of the *Guidelines on the Application of General Principles of Food Hygiene to The Control of Viruses in Food* (CXG 79-2012) for CCFH54. Canada and the Netherlands confirmed their willingness to prepare such a proposal based on the scientific advice provided.

Conclusion

139. CCFH53 agreed to request JEMRA to provide scientific advice on the areas identified in paragraph 133, with priority given to items 1, 3 and 4, and noted that Canada together with the Netherlands would provide a project document taking into account the scientific advice from JEMRA for consideration by CCFH54.

OTHER BUSINESS AND FUTURE WORK (Agenda Item 9)²¹

140. USA, as the Chair of the EWG, outlined the recommendations of the PWG to CCFH53 (CRD15) to support new work proposals, namely the project document on guidelines (or a code of practice) for food hygiene control measures in traditional food markets, which was presented by Bolivia and revised as contained in CRD19; and the project document on revision of *Guidelines on the Application of General Principles of Food Hygiene to the Control of Pathogenic Vibrio Species in Seafood* (CXG 73-2010) prepared by Japan and discussed under agenda item 7 with the alignment with the revised *General Principles of Food Hygiene* (CXC 1-1969). She further introduced the 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) prepared by Canada discussed under agenda item 8 where CCFH53 agreed to request scientific advice from JEMRA on prioritized elements (para 133). She also highlighted projects prioritized by assigning rankings in the forward workplan.
141. The Chairperson indicated that due to the progress made at CCFH53 it would be possible to take on new work and that it was also important to bear in mind the longer-term planning of the committee.

Guidelines for food hygiene control measures in traditional markets for food

142. One delegation expressed concern about the use of “traditional market” in the title of the project document, and proposed making the title more general by replacing “traditional market” with “food market” and including traditional markets in the scope of the guidelines. The Chair proposed retaining the title for now, expecting that the title would be refined if needed as the work progressed.

Conclusion

143. CCFH53 agreed to:
- i. forward the project document to CAC46 for approval as new work (Appendix V); and
 - ii. establish an EWG, chaired by Kenya and co-chaired by Bolivia, and Nigeria, working in English, to prepare, subject to approval of the Commission, the proposed draft guidelines for circulation for comments at Step 3 and consideration at CCFH54.
144. The report of the EWG should be made available to the Codex Secretariat at least three months before CCFH54 for circulation for comments at Step 3;

Revision of *Guidelines on the Application of General Principles of Food Hygiene to the Control of Pathogenic Vibrio Species in Seafood* (CXG 73-2010)

145. In response to a question raised by the JEMRA secretariat that the project document in CRD10 did not specifically address the need to request scientific information from JEMRA with regard to other *Vibrio* spp. such as *V. alginolyticus* and *V. cholerae* as well as seafood other than bivalve molluscs, Japan stated that such *Vibrio* spp were covered in the main body text of current CXG 73-2010, and the JEMRA reports published since 2010 covered seafood other than bivalve molluscs. Hence he indicated that it was not necessary to request any scientific advice from JEMRA at this moment, but did not preclude the possibility that a need for scientific advice might be identified as the work progressed.

Conclusion

146. CCFH53 agreed:

²¹ CX/FH 22/53/9; CRD7 (Indonesia and Thailand); CRD9 (Dominican Republic); CRD12 (ISO); CRD14 (Mexico); CRD15 (Report of the PWG on new work proposals/forward work plan); CRD16 (Republic of Korea); CRD18 (Thailand); CRD19 (Revised proposal for new work on guidelines for food hygiene control measures in traditional markets for food)

- i. to forward the project document to CAC46 for approval as new work (Appendix VI);
 - ii. to establish an EWG, chaired by Japan and co-chaired by Chile, working in English, to prepare, subject to approval of the Commission, the proposed draft revised guidelines for circulation for comments at Step 3 and consideration at CCFH54; and
 - iii. that a PWG may be held in conjunction with CCFH54, working in English, French and Spanish
147. The report of the EWG should be made available to the Codex Secretariat at least three months before CCFH54 for circulation for comments at Step 3.

Alignment of CCFH documents with the revised *General Principles of Food Hygiene* (CXC 1-1969)

148. The United Kingdom agreed to lead an alignment working group to initiate the work on alignment, consider the optimal approach to be taken and to update CCFH54 on progress made. The chairperson encouraged other Members to support this effort noting the extent of work to be undertaken.
149. In response to a question by Japan whether a guideline for the alignment with CXC 1-1969 would be made available shortly after CCFH53 in order to revise CXG 73-2010 to match with the alignment with CXC 1-1969, the Chairperson clarified that the report by the United Kingdom would be made available for the consideration at CCFH54, and thus Members were invited to coordinate with the United Kingdom for their work if they would need assistance for the alignment before CCFH54.

Forward work plan

150. CCFH53 reviewed the work plan and noted the intent of:
- Canada and the Netherlands, to prepare a project document on the revision of *Guidelines on the Application of General Principles of Food Hygiene to the Control of Viruses in Food* (CXG 79-2012) for consideration at CCFH54, taking into account discussions at CCFH53 under item 8;
 - USA, Honduras, Brazil and the EU to prepare a discussion paper on the possible revision of *Guidelines for the Control of Campylobacter and Salmonella in Chicken Meat* (CXG 78-2011) for consideration at CCFH54; and
 - France, USA and Canada to prepare a discussion paper on the possible revision of *Guidelines on the Application of General Principles of Food Hygiene to the Control of Listeria monocytogenes in Foods* (CXG 61-2007) for consideration at CCFH54.
151. The Chair reminded CCFH53 the deadline of the submission of new work proposals would be 1st September 2023 as per normal practice.

Conclusion

152. CCFH53 agreed to:
- i. endorse the revised forward work plan (Appendix VII); and
 - ii. establish a PWG on CCFH Work Priorities, chaired by the United States of America, to be held in conjunction with CCFH54, working in English, French and Spanish.

DATE AND PLACE OF THE NEXT SESSION (Agenda Item 10)

153. CCFH53 was informed that CCFH54 would be held from 11 to 15 March 2024 with the final arrangements subject to confirmation by the host Government in consultation with the Codex Secretariat.