



JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

Fifty-third Session

San Diego, United States of America

29 November – 2 December 2022 and 8 December 2022 (report adoption)

MATTERS REFERRED BY THE CODEX ALIMENTARIUS COMMISSION AND/OR OTHER CODEX SUBSIDIARY BODIES TO THE COMMITTEE

EXECUTIVE COMMITTEE OF THE CODEX ALIMENTARIUS COMMISSION (CCEXEC82)

Critical review¹

1. CCEXEC82 recommended that CAC45² adopt the draft Guidelines for the Management of Biological Foodborne Outbreaks at Step 8 and the proposed draft revision to the General Principles of Food Hygiene at Step 5/8 and noted the ongoing efforts to facilitate completion of work on the proposed draft Guidelines for the Control of Shiga Toxin Producing *Escherichia coli* (STEC) in Raw Beef, Raw Milk and Raw Milk Cheeses, Fresh Leafy Vegetables, and Sprouts and on the proposed draft Guidelines for the Safe Use and Reuse of Water in Food Production within the agreed timeframes.

A model for future Codex work³

2. CCEXEC82 agreed to establish a sub-committee to develop in collaboration with the Codex Secretariat a report including a proposed blueprint for the future of Codex for CCEXEC84, taking into consideration the views of Members and Observers, FAO and WHO, Chairpersons of Codex Committees, Regional Coordinators and Host Secretariats.

60th Anniversary of the Codex Alimentarius Commission: 1963-2023⁴

3. CCEXEC82 noted the initial plans¹⁹ provided by the Codex Secretariat to celebrate Codex@60 and provided further suggestions included for regional activities, expressed commitment to advocacy at all levels to ensure the widest possible participation and promotion of the anniversary; and encouraged Members and Observers to fully engage in early planning to identify their own contributions.—

New food sources and production systems⁵

4. CCEXEC82 recognised that ongoing work by CCEXEC on “new food sources” did not preclude committees from undertaking new work falling within their respective mandates.

5. CCEXEC82 agreed that the sub-committee established to investigate potential mechanisms to address crosscutting, overarching and emerging issues in Codex such as new food sources in the context of food safety, food quality and labelling and the state of related science, the needs and priorities of

¹ REP22/EXEC1, paragraphs 15 - 18

² An update on the discussions at CAC45 will be provided verbally

³ REP22/EXEC1, paragraphs 86 - 101

⁴ REP22/EXEC1, paragraphs 122 - 129

⁵ REP22/EXEC1, paragraph 85

members as well as any other considerations identified should continue its stepwise consideration of the issues, informed by an analysis of the information collected through the CL, CRDs and report of CCEXEC82.

Monitoring the use and impact of Codex Standards⁶

6. CCEXEC82 discussed the draft mechanism to monitor the use and impact of Codex texts (Goal 3 “increase impact through the recognition and use of Codex Standards”) and

- recognized the benefits and challenges in monitoring the use and impact of Codex texts, and the importance of engagement as the process evolved and of periodic review.
- endorsed the proposed approach for building the Codex M&E framework, noting that 2022 would be a pilot year for the re-designed survey approach and that the preliminary results would be reported at CCEXEC83 and CAC45.
- encouraged Members and Observers to identify potential resources to support data gathering for this work, particularly through case studies which should be selected according to a set of pre-defined criteria and be clear in terms of scope and context.

7. The pilot survey was launched on 20 September 2022 and more information on the survey and approach is available on a dedicated webpage⁷.

CODEX COMMITTEE ON FOOD HYGIENE (CCFH51)

Outstanding issues from CCFH51⁸

8. CCFH51 noted that the requests from the 40th sessions Codex Committee on Methods of Analysis and Sampling (CCMAS) that would help make *Recommended Methods of Analysis and Sampling* (CXS 234 – 1999)⁹ a more user-friendly single source of information for all analytical methods in Codex and agreed in principle to transfer the methods in the *General Methods for the Detection of Irradiated Foods* (CXS 231 - 2001) to CXS 234. CCFH51 also noted the offer of Brazil to review the methods in CXS 231 to determine their fitness for purpose and their possible conversion to performance-based criteria for consideration by CCFH52. Due to the abridged nature of the agenda for CCFH52, this issue was not considered at that session.

9. Brazil has undertaken a review of the methods of analysis in CXS 231 – 2001 and presented the outcome of that review and a recommendation for consideration of CCFH53. This is presented in Appendix 1.

RECOMMENDATIONS

10. CCFH53 is invited to:

- i. **note the information** provided in relevant paragraphs;
- ii. **encourage** Members and Observers, on the occasion of the 60th anniversary, to plan and implement activities to build awareness of Codex and to engage high level political support for Codex work and to consider the implementation of a regional event to mark the 60th anniversary;
- iii. **encourage** Members and Observers to actively engage in opportunities to contribute to the discussions in CCEXEC (i.e., the operationalization of the Statements of Principle concerning the Role of Science in the Codex Decision Making Processes; the future of Codex; new food sources and production systems and monitoring the use of Codex standards) through their Regional Coordinators, and/or by providing replies to relevant circular letters in this regard.
- iv. **consider** the proposal in paras 11 and 12 of appendix 1 regarding the *General Methods for the Detection of Irradiated Foods* (CXS 231-2001).

⁶ REP22/EXEC1, paragraph 121

⁷ <https://www.fao.org/fao-who-codexalimentarius/resources/monitoring/en/>

⁸ REP20/FH, paragraph 8

⁹ CX/FH 19/51/2

REVIEW OF THE METHODS OF ANALYSIS FOR IRRADIATED FOODS IN CXS231

(Prepared by Brazil)

Background

1. CCFH51 considered a proposal from CCMAS to transfer the methods in the *General Methods for the Detection of Irradiated Foods* (CXs 231-2001) to the *Standard for Methods of Analysis and Sampling* (CXs 234-1999) and noted the offer of Brazil to review the methods in CXs 231-2001 to determine their fitness for purpose of the methods of analysis and their possible conversion to performance-based criteria for consideration by CCFH52.
2. Brazil prepared a background paper including recommendations (CL 2020/55-FH, [Appendix II](#)) requesting Members to provide comments on:
 - a. the proposal to not establish performance criteria; and
 - b. the fitness for purpose of the methods for identification of irradiated foods and the respective amendments; deletion of the year and further specification of the commodities and the provision.
3. Comments were received from fifteen members and one observer, and a compilation is available [here](#). As CCFH52 was held virtually with an abridged agenda and time restrictions, discussion on this topic was rescheduled for consideration by CCFH53.
4. Reviewing the scope of the methods and the report of CCMAS which approved CXs 231-2001, it was understood that the methods contained in CXs 231-2001 are used just for labelling purposes, in order to verify if a food was irradiated or not. This understanding was clarified in paragraph 100 of the Report of the Twenty-third Session of the Codex Committee on Methods of Analysis and Sampling (CCMAS23), in 2001, when a delegation recalled that the *General Standard for the Labelling of Prepackaged Foods* (CXs 1-1985) required mandatory labelling of irradiated foods and it was therefore necessary to establish methods for control purposes. At that session, CCMAS had an extensive debate on the typing of proposed methods. Some delegations indicated that these methods could be attributed to Type I as they provide only an estimate of positive or negative results while other delegations pointed out that methods could be differentiated between Type II and Type III. In the end the CCMAS decided to endorse the proposed methods and concluded that the method EN 1785:1996 for detection of irradiated foods containing fat on the basis of GC/MS analysis of 2-alkylcyclobutanones should be endorsed as Type III and the remaining methods were specified as Type II.

Potential for conversion to performance-based criteria

5. The methods listed in CXs 231-2001 provide only an estimate of positive or negative results. It is not possible to establish performance-based criteria because, being detection methods, the necessary parameters (accuracy; applicability (matrix, concentration range and preference given to 'general' methods); detection limit; determination limit; precision: repeatability intra-laboratory (within laboratory), reproducibility inter-laboratory (within laboratory and between laboratories) that enable conversion into suitable generalized analytical characteristics are not all available. Additionally, according to the Procedural Manual - Working Instructions for the Implementation of the Criteria Approach in Codex, the specified maximum level, minimum level, any other normative level, or the concentration range of interest has to be stated. In the case of the methods mentioned in CXs 231-2001, and listed in the table below, there is no minimum and maximum level set in the provisions. On this basis it was proposed that performance-based criteria are not possible for these methods. In response to CL 2020/55-FH, members agreed with the proposal to not establish performance criteria, since it is not possible to assess the analytical performance of the validated methods,

Fitness for purpose of the methods

6. Considering that CCMAS had decided to remove the year of the approval of the methods in the *Recommended Methods of Analysis and Sampling* (CXs 234 -1999) because the most recent version of the method should be used, members were invited to provide comments regarding the deletion of the year.
7. Furthermore, the name of the commodities and provisions were amended to provide further clarity with regard to the scope of the methods.
8. With these proposed changes Members were asked to confirm that the methods listed were fit for purpose. Replies to CL 2020/55-FH confirmed that the methods listed were fit for purpose. There were no objections to remove the year of adoption of the methods or to the specification of commodities in the table; specific foods in parenthesis were listed because they were used in the method validation. They should be preceded with "e.g."

since they would not be all inclusive of the foods to which the method could apply. The proposed provision, methods, commodities and principles are shown in Table 1.

9. Special attention should be given to the Screening method EN 13783, considering that it is being proposed that this method would no longer apply to “raw minced meat,” which was previously listed along with herbs and spices since in reviewing the methods of analysis, details of validation of this method for “raw minced meat” could not be found.

10. Based on all comments received, the *General Methods for the Detection of Irradiated Foods* (CXS231-2001) have been amended and presented as Table 1.

Recommendation

11. CCFH is invited to consider the above analysis and to recommend to CCMAS:
 - i. that the methods of analysis for irradiated foods listed in the *General Methods for the Detection of Irradiated Foods* (CXS 231-2001) are still fit for purpose; and
 - ii. that they should be included in CXS 234-1999 with the changes as proposed in Table 1, subject to confirmation of whether EN 13783 is fit for purpose for raw minced meat; and
12. Following inclusion in CXS 234-1999, it is recommended that the Commission revoke the *General Methods for the Detection of Irradiated Foods* (CXS 231-2001)

Table 1. General methods for the detection of irradiated foods

(Additions in **bold** and underlined; Deletions in ~~strikethrough~~)

Commodity	Provision	Method	Principle	Type
Food containing fat (e.g. raw meat and chicken, cheese, fruits)	Detection of irradiated food - <u>Detection of radiation-induced hydrocarbons</u>	EN 1784: 1996	Gas chromatographic analysis of hydrocarbons	Type II
Food containing fat (e.g. raw meat and chicken, liquid whole egg)	Detection of irradiated food - <u>Detection of radiation-induced 2-alkylcyclobutanones</u>	EN 1785: 1996	Gas chromatographic/spectrophotometric analysis of 2/alkylcyclobutanones	Type III
Food containing bone	Detection of irradiated food - <u>Radiation induced Electron Spin Resonance (ESR) signal attributed to hydroxyapatite (principal component of bones)</u>	EN 1786: 1996	ESR spectroscopy	Type II
Food containing cellulose (e.g., nuts and spices)	Detection of irradiated food - <u>Radiation induced Eletron Spin Ressonance (ESR) signal attributed to crystalline cellulose</u>	EN 1787:2000	ESR spectroscopy	Type II
Food containing silicate minerals (e.g. herbs, spices, their mixtures and shrimps)	Detection of irradiated food - <u>Thermoluminescence glow ratio used to indicate the irradiation treatment of the food</u>	EN 1788:2004	Thermoluminescence	Type II
Food containing silicate minerals (e.g. shellfish, herbs, spices, seasonings)	Detection of irradiated food - <u>Measurement of photostimulated luminescence intensity</u>	EN 13751:2002	Photostimulated luminescence	Type III
Food containing cristaline sugar (e.g. dried fruits and raisins)	Detection of irradiated food - <u>Radiation induced Eletron Spin Ressonance (ESR) signal attributed to crystalline sugar</u>	EN 13708:2004	ESR spectroscopy	Type II
Herbs and spices and raw minced meat	Detection of irradiated food - <u>Difference between total microorganism count and viable microorganism count</u>	EN 13783:2004 NMKL 231 (2002)	Direct Epifluorescent Filter Technique/Aerobic Plate Count (DEFT/APC) (screening method)	Type III
Food containing DNA (e.g. food products, both of animal and plant origin such as various meats, seeds, dried fruits and spices)	Detection of irradiated food - <u>Detection of DNA fragmentation presumptive to irradiation treatment.</u>	EN 13784:2004	DNA comet assay (screening method)	Type III