



## JOINT FAO/WHO FOOD STANDARDS PROGRAMME

### CODEX COMMITTEE ON PESTICIDE RESIDUES

53rd Session  
(Virtual)  
4–8 and 13 July 2022

#### MATTERS ARISING FROM OTHER INTERNATIONAL ORGANIZATIONS

##### ACTIVITIES OF THE JOINT FAO/IAEA CENTRE OF NUCLEAR TECHNIQUES IN FOOD AND AGRICULTURE RELEVANT TO CCPR WORK

*(Prepared by the Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture<sup>1</sup>)*

1. The Food and Agriculture Organization of the United Nations (FAO) and International Atomic Energy Agency (IAEA), through the Joint FAO/IAEA Centre of Nuclear Techniques in Food and Agriculture (herein after “Joint FAO/IAEA Centre”), work with Member Countries to contribute to food security and sustainable agricultural development by use of nuclear techniques and biotechnology. Through its Food Safety and Control Section and Laboratory, the Joint FAO/IAEA Centre assists Member Countries of both FAO and IAEA in the peaceful application of nuclear techniques and related technologies to improve food safety and control systems. The activities of the Joint FAO/IAEA Centre are therefore closely related to the work of the Codex Alimentarius Commission and its committees, including the Codex Committee on Pesticide Residues (CCPR).
2. Activities of relevance to the CCPR include the development and application of nuclear and isotopic analytical methods for the analysis and control of various chemical residues and food contaminants in agricultural products. Through its sub-programme on ‘Improvement of Food Safety and Food Control Systems’, the Joint FAO/IAEA Centre continues to support laboratories and technical capabilities in Member Countries in their application of Codex Standards and Codes of Practice within national and regional food control systems.
3. The activities of the Joint FAO/IAEA Centre are carried out through coordinating and supporting research, providing laboratory services and applied research, training and capacity building through its Food Safety and Control Laboratory at Seibersdorf, Austria, as well as collecting, analysing and disseminating information for the effective transfer of skills, knowledge and technology. The Joint FAO/IAEA Centre also provides technical support for national, regional and interregional technical cooperation and capacity building projects in the field of food safety and control.

#### Coordinated Research Activities

4. Collaborative research activities are undertaken in selected nuclear and related techniques by scientists in IAEA and FAO Member Countries. These activities are implemented through coordinated research projects (CRPs) involving institutes in both developing and developed countries that work on common food safety and quality themes. In the period covered by this report, nuclear and related analytical methods for measuring pesticide residues in foods were developed in two CRPs in food safety and control, “Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Foods” and “Depletion of Veterinary Pharmaceuticals and Radiometric Analysis of their Residues in Animal Matrices”. New analytical methods and standard operating procedures have been, and continue to be, developed through these CRPs.

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<sup>1</sup> <https://www.iaea.org/topics/food-and-agriculture>

5. The CRP “Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Foods”, which will be completed in 2023, involves researchers and regulatory institutions in the following Member Countries: Benin, Botswana, China, Colombia, Ecuador, Italy, Netherlands, Nicaragua, North Macedonia, Pakistan, Papua New Guinea, Peru, Spain, South Africa, Uganda and the United States of America. The research work focuses on the development of multi-class analytical methods to support programmes for detecting and controlling contaminants and residues of different types and from different sources. More than 10 methods have been developed for the analysis of pesticide and veterinary drug residues as well as mycotoxins in a range of food commodities.
6. The CRP “Depletion of Veterinary Pharmaceuticals and Radiometric Analysis of their Residues in Animal Matrices”, which will run from 2021 to 2026, includes the possibility of including dual-use compounds of relevance to CCPR and the Codex Committee on Residues of Veterinary Drugs (CCRVDF). Findings in the research could also benefit interests in other areas such as residues in offal. The project involves 17 research/regulatory institutions from Bangladesh, Burkina Faso, Brazil, Canada, Chile, China, Korea (Republic of), Morocco, Pakistan, Sudan, Uganda, Uruguay and the United States of America. Collaboration and partnerships in areas such as in the synthesis or provision of radiolabelled compounds; access to or assistance in strengthening of animal experimental facilities and good laboratory practice-certified laboratories; provision of some specialized training and/or benchmarking opportunities to the participants, among others, are most welcome from the committee. The second research coordination meeting for this project was held virtually from 28 February to 4 March 2022.

#### Technical Cooperation and Networking

7. The Joint FAO/IAEA Centre currently provides technical support to more than 80 IAEA Technical Cooperation Projects in food safety and control<sup>2</sup> (see *Table 1 for selected active Technical Cooperation Projects*).
8. **Networking:** The Joint FAO/IAEA Centre continues to support and promote the formation of regional laboratory/food safety networks as a mechanism to enhance capacity building, including the Latin American and Caribbean Analytical Network<sup>3</sup>, the African Food Safety Network<sup>4</sup> and a food safety network in Asia<sup>5</sup>. These networks provide a platform for sharing knowledge and experiences and carry out a wide range of activities, including transfer of analytical methodology, proficiency testing, interlaboratory comparisons and benchmarking. More than 200 institutes from approximately 90 countries are currently involved in the networks.

#### Technology Transfer and Capacity Enhancement

9. **Supporting analytical laboratories:** The Joint FAO/IAEA Centre continues to meet requests from Member Countries for analytical methods, standard operating procedures and technical guidance. The methods developed or adapted and validated in the Food Safety and Control Laboratory and collaborating institutions are made available to Member Countries through various mechanisms, including training workshops, publications in the scientific literature and public outreach events, as well as the platform “Food Contaminant and Residue Information System”<sup>6</sup>.
10. **Regional multi-stakeholder workshops/conferences:** A one-day virtual African Food Safety Workshop was held on 4 August 2021 under the framework of the African Food Safety Network (AFoSaN), attracting nearly 500 participants interested in food safety in Africa. The meeting was organized in cooperation with the National Metrology Institute of South Africa. The event successfully prepared the way for the second Africa Food safety Workshop/Technical meeting, held in the Joint Johannesburg, South Africa, from 27 June to 1 July 2022. The Joint FAO/IAEA Centre, in conjunction with RALACA, also held a Workshop on “Food Contaminant Testing and Risk Assessment Programmes” from 12 to 14 October 2021. Thirty participants from Argentina, Bolivia (Plurinational State of), Chile, Costa Rica, Guyana, Italy, Jamaica, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Spain and Uruguay attended the event. The workshop shared scientific and technological developments, identified gaps in knowledge and discussed ways in which nuclear and isotopic methodologies can improve food safety testing and risk assessment programmes.

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<sup>2</sup> Additional information is available in the FAO/IAEA Newsletter:

<https://www.iaea.org/publications/15074/food-and-environmental-protection-newsletter-vol-25-no-1-january-2022>

<sup>3</sup> See: <http://red-ralaca.net>

<sup>4</sup> See: <http://www.africanfoodsafetynetwork.org/>

<sup>5</sup> See: <http://www.foodsafetyasia.org/>

<sup>6</sup> See: <http://nucleus.iaea.org/fcris/>

11. **Training on Residues Analysis:** The Joint FAO/IAEA Centre held a virtual training course on “Analytical Methods to detect and Control Organic Contaminants in Food” run by the Food Safety and Control Laboratory, from 16 to 18 May 2022. The training course had 134 participants from 25 countries. A regional African training course on residue analysis for food crops from supervised field trials was held in Kampala, Uganda, from 28 March to 1 April 2022. The course had 30 participants from 16 countries. The training also included discussions on the purity and stability of certified reference material for pesticides, a topic of recent interest to CCPR members.
12. **Publication of Analytical Methods Manual for Control of Chemical Food Hazards:** A manual of “Standard Operating Procedures for Selected Chemical Residue and Contaminant Analysis”<sup>7</sup> was published by the Joint FAO/IAEA Centre through FAO. The manual contains selected methods for the analysis of a range of mycotoxins in matrices, such as include milk, edible vegetable oil and animal feed, veterinary drug residues in animal matrices, pesticide residues in cereals, fruits and vegetables, and trace elements in water and food.

**Table 1. Ongoing IAEA Technical Cooperation Projects supported by the Joint FAO/IAEA Centre and relevant to CCPR’s work**

Number	Country/ Region	Project No.	Title
1	Bahamas	BHA5001	Developing laboratory capacity for testing contaminants in animal and related products including fish in Bahamas
2	Benin	BEN5013	Strengthening National Capabilities to Improve the Safety and Competitiveness of Exportable Food Products
3	Botswana	BOT5020	Enhancing Capabilities for a Holistic Approach to Testing Food Hazards in Poultry Production and Products
4	Burundi	BDI5004	Enhancing Control of Chemical Residues and Related Contaminants in Food
5	Cambodia	KAM5004	Strengthening National Capacity for Food and Feed Safety
6	Cameroon	CMR5025	Improving Laboratory Testing Capabilities to Enhance the Safety and Competitiveness of Agricultural Products - Phase I
7	Costa Rica	COS5037	Strengthening Capabilities to Analyse and Monitor Toxic Metals in Animal Products
8	Cote d'Ivoire	IVC5042	Improving Testing and Monitoring of Food Hazards Using Nuclear and Isotopic Techniques
9	Democratic Republic of the Congo	ZAI5028	Controlling Food and Feed Contaminants in Fish Production
10	Dominica	DMI5002	Enhancing Capacity to Monitor Agrochemical Residues in Foods and Related Matrices
11	Eritrea	ERI5012	Developing Analytical Capabilities for Food Safety
12	Fiji	FIJ5004	Establishing a Food Safety Laboratory for Analysis of Pesticide Residues in Fresh Fruits, Vegetables and Root Crops
13	Georgia	GEO5001	Enhancing National Programmes for Testing and Monitoring Food Contaminants and Residues

<sup>7</sup> <https://www.fao.org/documents/card/en/c/cb6191en>

<b>Number</b>	<b>Country/ Region</b>	<b>Project No.</b>	<b>Title</b>
14	Haiti	HAI5009	Strengthening Laboratory Capacity to Test and Monitor Food Contaminants
15	Kyrgyzstan	KIG5001	Establishing Effective Testing and Systematic Monitoring of Residues and Food Contaminants and of Transboundary Animal Diseases
16	Lebanon	LEB5016	Strengthening Capacity for Exposure Assessment of Residues and Contaminants in the National Diet
17	Marshall Islands	MHL5002	Building Core Capacities to Control Contaminants and Other Residues in Food - Phase I
18	Mauritania	MAU5008	Strengthening Laboratory Capacity to Analyse and Monitor Residues and Contaminants in Foods
19	Mauritius	MAR5027	Strengthening Multi-Institutional Laboratory Capabilities to Control Veterinary Drug Residues and Associated Food Contaminants
20	Mozambique	MOZ5012	Enhancing Food Safety testing and Monitoring of Hazards Using Nuclear and Related Techniques
21	Namibia	NAM5018	Strengthening Animal Health and Food Safety Control Systems
22	Nicaragua	NIC5012	Strengthening the Monitoring and Control System for Food Contaminants
23	Niger	NER5023	Strengthening Capacity of the Public Health Laboratory to Monitor Food Contaminants
24	Palestine	PAL5010	Strengthening Capability to Monitor Contaminants in Food and Related Matrices through Nuclear and Complementary Analytical Techniques
25	Panama	PAN5027	Strengthening Analytical Capabilities for Risk-based Monitoring of Agricultural Products for Internal Consumption
26	Philippines	PHI5035	Advancing Laboratory Capabilities to Monitor Veterinary Drug Residues and Related Contaminants in Foods
27	Rwanda	RWA5003	Strengthening Laboratory Capacity of the Standards Board to Analyse and Monitor Chemicals in Foods – Phase II
28	Sudan	SUD5040	Strengthening the Evaluation of Quality, Monitoring and Control Programmes for Food Contaminants
29	Uganda	UGA5042	Strengthening Capabilities of Two Central Food Safety Laboratories and Selected Regional Veterinary Centres of Public Health
30	Vanuatu	NHE5004	Strengthening Agro-Food Laboratory Quality Infrastructure – Phase II

Number	Country/ Region	Project No.	Title
31	Regional - Asia and the Pacific	RAS5096	Strengthening Multi-stakeholder Food safety Monitoring Programmes for Chemical Contaminants and Residues in Plant and Animal Products Using Nuclear/Isotopic Techniques
32	Regional - Asia and the Pacific	RAS5099	Developing Climate Smart Crop Production including Improvement and Enhancement of Crop Productivity, Soil and Irrigation Management, and Food Safety Using Nuclear Techniques (ARASIA)
33	Regional - Latin America and the Caribbean	RLA5079	Applying Radio-Analytical and Complementary Techniques to Monitor Contaminants in Aquaculture (ARCAL CLXXI)
34	Regional - Latin America and the Caribbean	RLA5080	Strengthening the Regional Collaboration of Official Laboratories to Address Emerging Challenges for Food Safety (ARCAL CLXV)
35	Regional - Latin America and the Caribbean	RLA5081	Improving Regional Testing Capabilities and Monitoring Programmes for Residues/Contaminants in Foods Using Nuclear/Isotopic and Complementary Techniques (ARCAL CLXX)
36	Regional - Africa	RAF5084	Strengthening Food Contaminant Monitoring and Control Systems and Enhancing Competitiveness of Agricultural Exports using Nuclear and Isotopic Techniques (AFRA)