



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX COMMITTEE ON PESTICIDE RESIDUES**

**49th Session  
Beijing, China, 24-29 April 2017**

**MATTERS OF INTEREST ARISING FROM OTHER INTERNATIONAL ORGANIZATIONS**

**PART I:**

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

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

1. The Joint Food and Agriculture Organization of the United Nations (FAO) and International Atomic Energy Agency (IAEA) Division of Nuclear Techniques in Food and Agriculture (the “Joint FAO/IAEA Division”) continues with its efforts to work with member countries to support and improve food safety and control systems through the application of nuclear and related analytic technologies. Its activities are therefore closely related to the work of Codex Alimentarius Commission and its committees, including the Codex Committee on Pesticide Residues (CCPR). Through its Food and Environmental Protection Section and Laboratory, the Joint FAO/IAEA Division assists Member Countries of both FAO and IAEA in the peaceful application of nuclear techniques and related technologies.
2. Activities of interest to the CCPR focus on the analysis and control of various chemical residues and food contaminants in agricultural products by applying nuclear and isotopic analytical methods. As a part of its subprogramme on Improvement of Food Safety and Food Control Systems, the Joint FAO/IAEA Division continues to support member countries in application of Codex food safety standards and to encourage the adoption of Codex MRLs as part of national and regional food control systems.
3. The activities of the Joint FAO/IAEA Division are carried out within the broad context of coordinating and supporting research; providing laboratory support and training through the Food and Environmental Protection Laboratory (FEPL) at Seibersdorf, Austria; and collecting, analysing and disseminating information for the effective transfer of skills, knowledge and technology. The Joint FAO/IAEA Division also provides technical support for national, regional and inter-regional technical cooperation and capacity building projects in the field of food safety and control.

**Coordinated Research**

4. Collaborative research activities have been designed to stimulate and coordinate the undertaking of research in selected nuclear and related techniques by scientists in IAEA and FAO Member States. These activities are normally implemented through Coordinated Research Projects (CRPs), which bring together research institutes in both developing and developed Member States to research topics of common interest in collaboration. In the period covered by this report, three out of seven coordinated research projects (CRPs) in the area of food safety and control have research activities on the development of analytical methods for pesticide residues with nuclear and related techniques (see Table 1). Achievements with real impact from the CRPs include the development of new analytical methods and standard operating procedures (SOPs).
5. Of particular interest to the CCPR is a new CRP on Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Foods (Reference D52041). This was designed and planned in 2016 and is being initiated this year, with its first research coordination meeting planned for 19–23 June 2017, at the IAEA Headquarters in Vienna, Austria. An international network of participant laboratories and institutions is being selected for collaboration. The research network will develop systematic programmes for measuring mixtures of contaminants and residues and develop necessary multi-class analytical methods. The overall aim is to leverage the advantages of nuclear, isotopic and complementary techniques to strengthen the capacity of Member State analytical laboratories and national contaminant and residue monitoring programs thus contributing to food safety and enabling international trade. New multi-class analytical methods will be developed, validated and transferred to control laboratories. The research could also yield data on residues of contaminants that would be of interest to the CCPR.

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

### Technical Cooperation and Networking

6. The Joint FAO/IAEA Division is providing technical support to 59 IAEA Technical Cooperation Projects (TCPs) in the area of food safety and control<sup>2</sup> including 47 national projects, 11 regional and one inter-regional project to establish a world-wide network of analytical and control laboratories. Among these TCPs, 25 projects focus on providing support to Member Countries on building capacities for monitoring and analysing agrochemical residues in food products and the environment by using nuclear and complementary techniques (see Table 2 & 3). Looking forward to the 2018-19 biennium, there are some 30 new project designs that are being developed and reviewed and more information on these will be given at the next CCPR in 2018.
7. The Joint FAO/IAEA Division continues to promote the formation of regional laboratory/food safety networks, including the Latin American and Caribbean Analytical Network (RALACA)<sup>3</sup>; the African Food Safety Network (AFoSaN)<sup>4</sup>, and; a new food safety laboratory network of 18 countries in the Asia and the Pacific region which is currently being developed. A new interregional project is also providing a platform for countries to collaborate and jointly address food safety and control issues and is helping to open up new opportunities to share experience and resources.

### Technology Transfer and Training

8. We strive to meet the requests from our Member States for analytical methods, standard operating procedures and technical advice. The methods developed or adapted and validated in the FEPL are made available to Member States through various mechanisms, including training workshops, publications in the scientific literature and via the internet, public outreach events, conferences and symposia. The 'Food Contaminant and Residue Information System' (FCRIS, <http://nucleus.iaea.org/fcris/>) provides useful data on food contaminants and residues and includes analytical method databases, which are continually updated with methods developed in the FEPL as well as others submitted by laboratories in Member States. The methods databases for veterinary drug residues and for pesticide residues were developed in response to requests from the Codex Committees on Residues of Veterinary Drugs in Food and on Pesticide Residues. For example, a comparative study was carried out in the FEPL on the optimization and ruggedness testing of an analytical method for pesticide residues in potato. The results will be posted on the website of the Red Analítica de Latinoamérica y el Caribe (RALACA) food safety laboratory network to assist Member State laboratories in method development and validation.
9. Recent publications include a special issue of the journal *Food Control* reporting the proceedings of the FAO/IAEA Symposium on Food Safety and Quality<sup>5</sup>. The Food and Environmental Protection Section's Newsletter<sup>6</sup> provides a full list of our technical and scientific publications and the overall statistics for 2016 are impressive and include 15 articles in peer reviewed journals, 14 conference papers, two special editions of scientific journals, two IAEA-TECDOCs, five manuals and one chapter in a specialist book series.
10. Over 650 food specialists, from all regions of the world, have been trained through our activities in 2016. Highlights include the following regional courses and workshops relevant to CCPR: Awareness on Analytical Methods and Challenges in Food Authenticity, Safety and Traceability (hosted in Austria with the participation of specialists from Iraq, Libya, Syria, Kuwait & the Marshall Islands); Nuclear/Isotopic and Complementary Techniques in Food Safety (several African countries and the host Malawi); Training on Sampling and Data Processing for Food Safety Laboratories (hosted in Botswana); Analytical Method Development and Validation (hosted in Benin); Quality Management for Food Safety Laboratories (international participation and hosted in Indonesia); Food Sampling Training (hosted in Colombia), and; Training on Sampling for Pesticide and Mycotoxin Analysis (hosted in Bahrain); Advanced Modelling Programs (hosted in Chile), Emerging Contaminants (hosted in Uruguay), Use of Biomarkers (hosted in Colombia), Implementation of Biomarkers on Aquatic Organisms to Detect Xenobiotics in Aquatic Environment (Hosted in Brazil), Analytical methods for Residues of Selected Pesticides (hosted in Uruguay).

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<sup>2</sup> A full list is available in our latest Newsletter, pages 18-23: <http://www-pub.iaea.org/MTCD/Publications/PDF/Newsletters/FEP-20-1.pdf>

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

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

<sup>5</sup> <http://www.sciencedirect.com/science/journal/09567135/72/part/PB>

<sup>6</sup> <http://www-pub.iaea.org/MTCD/Publications/PDF/Newsletters/FEP-20-1.pdf>

### Support to Codex and Participation at Codex meetings

11. As regards providing input to Codex and receiving feedback from Codex member countries for future research and development work, participation at Codex meetings over the past year has included the Codex Alimentarius Commission meeting, the previous CCCF and CCPR meetings, a meeting of the Coordinating Committee for Asia, and the Codex Committee on Residues of Veterinary Drugs in Foods. The Joint FAO/IAEA Division has been involved in providing data to Codex and helping develop Codex standards, a recent example is the *Criteria for Radionuclide Activity Concentrations for Food and Drinking Water*, which was published by the IAEA as TECDOC-1788 and also freely available online<sup>7</sup>.
12. The Joint Division continues to provide technical support to the electronic working group (EWG) on *Guidelines of Performance Criteria Specific for Methods of Analysis for the Determination of Pesticide Residues* that was re-established by the CCPR at its 46th session and chaired by the United States of America and co-chaired by China and India. The Joint Division has been an active participant to this work group and presented at the CCPR47, CCPR48 and this session as well. Our comments on the draft of these Guidelines at step 6 are submitted to the EWG through the Codex Online Commenting System.
13. The Joint FAO/IAEA Division is pleased to continue to support, develop and promulgate the standards of the CCPR and will continue in its efforts to work with Member Countries to enhance food safety and control systems.

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<sup>7</sup> [http://www-pub.iaea.org/MTCD/publications/PDF/TE-1788\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/TE-1788_web.pdf)

**Table 1. Coordinated Research Projects (CRPs)  
supported by the Joint FAO/IAEA Division and relevant to CCPR's work**

CRP Ref. No.	Active CRPs
D52039	Development and Strengthening of Radio-Analytical and Complimentary Techniques to Control Residues of Veterinary Drugs and Related Chemicals in Aquaculture Products
D52041	Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Foods
	<b>Completed CRPs</b>
D52037	Implementation of Nuclear Techniques to Improve Food Traceability

**Table 2. Ongoing IAEA TCPs supported by the Joint FAO/IAEA Division  
and relevant to CCPR's work (beginning 2014)**

Number	Country/Region	Project No.	Title
1	Benin	BEN/5/009	Monitoring Safe Food Supply through Total Diet Studies and the Application of Nuclear and Complementary Analytical Techniques
2	El Salvador	ELS/7/006	Building Capacities to Minimize Environmental Contamination and to Protect the Health of the Rural Population by Strengthening Research Capabilities and Laboratory Infrastructure
3	Guatemala	GUA/7/004	Developing Capabilities to Evaluate the Transfer and Fate of Water Pollutants to Improve the Management of Major Basins and the Safety of Agricultural Products
4	Namibia	NAM/5/013	Assessing the Spatial Distribution of Lead, Cadmium and Selected Pesticide Residues in Livestock Farming
5	Oman	OMA/5/003	Strengthening National Capabilities in Food Safety and Food Traceability
6	Panama	PAN/5/022	Determining Pesticides and Inorganic Pollutants in Vegetables and Studying the Adsorption and Migration Through Nuclear Technologies in Zones of High Pollution Incidents to Guarantee Safe Food for Consumers
7	Paraguay	PAR/5/010	Strengthening the National Network of Laboratories Involved in Chemical Risk Analysis to Ensure Food Safety Through the Use of Nuclear and Complementary Non-Nuclear Techniques
8	Syria	SYR/5/023	Enhancing Analytical Capacities of Major Pesticide Residues
9	Africa	RAF/5/067	Establishing a Food Safety Network through the Application of Nuclear and Related Technologies
10	Latin America	RLA/7/019	Developing Indicators to Determine the Effect of Pesticides, Heavy Metals and Emerging Contaminants on Continental Aquatic Ecosystems Important to Agriculture and Agroindustry (ARCAL CXXXIX)

**Table 3. Additional IAEA TCPs (began 2016) relevant to CCPR's work**

Number	Country/ Region	Project Concept No.	Title
1	Bahrain	BAH/5/001	Determination of Pesticide and Mycotoxin Residues in water and food
2	Botswana	BOT/5/014	Enhancing the Use of Nuclear and Isotopic Analytical Techniques in Monitoring Chemical Food Contaminants in Botswana
3	Colombia	COL/5/025	Improving Capacity to Diagnose Residual Pesticides and other Contaminants in Exotic Tropical Fruits to Make Food Exports More Acceptable on the International Market
4	Dominica	DMI/5/001	Enhancing Capacity to Monitor Agrochemical Residues in Foods and the Environment
5	Iraq	IRQ/5/021	Developing Food Safety and Assurance System Using Nuclear and Other Related Technologies
6	Libya	LIB/5/012	Using Nuclear and Complementary Techniques for Monitoring Agrochemical Residues in Food Products and the Environment
7	Mauritius	MAR5/024	Building Capacity to Analyse Veterinary Drug Residues and Related Chemical Contaminants in Animal Products
8	Niger	NER/5/020	Building Capacity at the Central Laboratory (LABOCEL), Niamey, for Control of Food Products of Animal Origin
9	Panama	PAN5/024	Developing Analytical Capabilities for the Detection of Chemical Contaminants in Food and the Quality of Agrochemicals
10	Sierra Leone	SIL/5/016	Strengthening Laboratory Capabilities to Evaluate and Monitor Levels of Mycotoxins, Toxic Metals and Related Contaminants in Foods
11	Uganda	UGA/5/039	Enhancing the Monitoring of Veterinary Drug Residues, Related Chemicals and Natural Food Contaminants
12	Africa	RAF/5/078	Establishing a Food Safety Network through the Application of Nuclear and Related Technologies — Phase II
13	Asia and the Pacific	RAS/5/078	Enhancing Food Safety Laboratory Capabilities and Establishing a Network in Asia to Control Veterinary Drug Residues and Related Chemical Contaminants
14	Latin America	RLA/5/069	Improving Pollution Management of Persistent Organic Pollutants to Reduce the Impact on People and the Environment (ARCAL CXLII)
15	Interregional	INT/5/154	Improving Food Safety through the Creation of an Interregional Network that Produces Reliable Scientific Data Using Nuclear and Isotopic Techniques