



JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON PESTICIDE RESIDUES

50th Session

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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 Agriculture¹)

1. The Food and Agriculture Organization of the United Nations (FAO) and International Atomic Energy Agency (IAEA), through the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture ("Joint FAO/IAEA Division"), work with member countries to support and improve food safety and control systems through the application of nuclear and related analytical technologies. The activities of the Joint FAO/IAEA Division are therefore closely related to the work of the Codex Alimentarius Commission and its committees, including the Codex Committee on Pesticide Residues (CCPR). Through its Food and Environmental Protection Section and its associated 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 relevance to the CCPR include developing and using nuclear and isotopic analytical methods for the analysis and control of various chemical residues and food contaminants in agricultural products. As a part of its Subprogramme on Improvement of Food Safety and Food Control Systems, the Joint FAO/IAEA Division continues to support laboratories and technical experts in member countries in their application of Codex standards and codes of practice, to encourage and support 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 its Food and Environmental Protection Laboratory (FEPL) at Seibersdorf, Austria, as well as 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 Activities

4. Collaborative research activities have been designed to stimulate and coordinate research in selected nuclear and related techniques by scientists in IAEA and FAO member countries. These activities are normally implemented through Coordinated Research Projects (CRPs) that bring together institutes from both developing and developed countries. The Joint FAO/IAEA Division and CRP participants collaborate in research topics of common importance. In the period covered by this report, three out of seven CRPs in the area of food safety and control were developing nuclear and related analytical methods for measuring pesticide residues in foods (Table 1). New analytical methods and standard operating procedures (SOPs) are therefore being developed through the Joint FAO/IAEA Division and its CRPs.

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

5. An example of a CRP that will be of interest to the CCPR is a new initiative on the development of Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Foods (Reference D52041). Its first research coordination meeting was held on 19–23 June 2017, at the IAEA Headquarters in Vienna, Austria. An international network of 16 participant laboratories and institutions was established and a research framework was agreed. The research network is supporting systematic programmes for measuring mixtures of contaminants and residues and producing multi-class analytical methods. The overall aim of this CRP is to leverage the advantages of nuclear, isotopic and complementary techniques to strengthen the capacity of analytical laboratories in member countries and therefore enhance their national contaminant and residue monitoring programs. The research will therefore contribute to food safety and help enable international trade. New multi-class analytical methods will be developed, validated and transferred to control laboratories. The research may also yield data on residues that would be of interest to the CCPR.

Technical Cooperation and Networking

6. The Joint FAO/IAEA Division provided technical support to 49 IAEA Technical Cooperation Projects (TCPs) in food safety and control² in 2017. These TCPs included 38 national, 10 regional and one inter-regional project (see Table 2). As regards future technical support in this area, 26 new TCPs for the 2018-19 biennium have commenced, with 13 of these focusing on residues and chemical contaminants in foods (Table 3).
7. The Joint FAO/IAEA Division continues to promote the formation of regional laboratory/food safety networks - as a mechanism to enhance capacity building - including the Latin American and Caribbean Analytical Network (RALACA)³, the African Food Safety Network (AFoSaN)⁴ and a food safety network in the Asia. The RALACA involves 54 member institutions in 21 countries in the Latin American and the Caribbean region; the AFoSaN involves institutions in 33 African countries, while the newly established Asia and the Pacific region network includes institutes from 16 countries.
8. Under AFoSaN, several common activities relevant to CCPR were implemented, such as a regionally tailored proficiency testing scheme for the analysis of pesticide residues in fruits. A total of 19 institutions participated in this proficiency testing scheme; the exercise will be repeated in 2018. There is a growing list of institutions keen on promoting such regional proficiency schemes. Training in analytical methods was also undertaken by this Network; for example, group training was conducted in Benin on analysis of pesticides of plant and animal use relevance. Twenty participants attended this training event, including several from laboratories in Asia and Latin America who were funded under the inter-regional TCP.
9. This inter-regional TCP provides a platform for countries to collaborate and jointly address food safety and control issues. It is helping to open up new opportunities for institutes to share experience and resources. A training event on analytical methods and procedures for the detection of pesticide residues was held in Singapore in collaboration with the Agri-Food & Veterinary Authority (AVA) under this project with twenty participants taking part.
10. Similarly, participants from Argentina, Guatemala, Uganda and Uruguay received support to attend the Global Minor Use Fund Joint Residue Work for Specialty Crop MRLs, held in Canada in 2017.

Technology Transfer, Capacity Enhancement and Partnership with Private Sector

11. We strive to meet the requests from our member countries for analytical methods, standard operating procedures and technical advice. The methods developed or adapted and validated in the FEPL are made available to member countries 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 through the collaborating centres and the laboratory networks as well as others submitted by laboratories in member countries. 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.

² 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>

³ See: <http://red-ralaca.net>

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

12. The FEPL recently developed and validated a new method for selected pesticides in vine leaves and its application in a dissipation study to provide data for withdrawal periods for the compounds tested. Additional work included analytical calibration methodologies and use of analyte protectants in pesticide residue analysis as well as the validation of a method for pesticide residues in boldo (*Peumus boldus* Molina), a plant commonly used to prepare infusions in Latin America and medicinal extracts. These studies were carried out directly in collaboration with laboratories from various countries including Panama, Syria and Uruguay.
13. Recent publications include a special issue of the journal *Food Control* reporting the proceedings of the FAO/IAEA Symposium on Food Safety and Quality: Applications of Nuclear and Related Techniques⁵, as well as the Food and Environmental Protection Section's Newsletter⁶ which provides a full list of our technical and scientific publications useful to CCPR.
14. About 1200 food safety specialists were trained through activities of the Joint FAO/IAEA Division in 2017. Highlights include the following regional courses and workshops relevant to CCPR: regional training course on sampling strategies in Costa Rica; training course on harmonization of sample preparation and analytical methods in Colombia; training course on analytical methods for residues of selected pesticides in Uruguay; training workshop on data quality for decision makers in Costa Rica, as well as a scientific meeting on Modelling Programs in Chile and Costa Rica. Others included a meeting on accreditation of biomonitoring laboratories in Panama, a regional meeting on emerging contaminants in Costa Rica and a national meeting on screening technologies and immunosensors in Panama.
15. In addition to training arranged through regional networks, the Joint FAO/IAEA Division supported a national training event in Colombia on "international food safety standards, and MRL setting", this was implemented in cooperation with an expert from Japan. Fifteen participants from several local institutions benefited. This is in line with the Joint FAO/IAEA Division's commitment to boost CCPR work among member countries. In this regard, the inter-regional TCP also provided support to scientists from Benin, Chile and Honduras that enabled them to attend CCPR49; support has also been provided to a number of countries to enable their technical experts to participate at CCPR50.
16. A number of member countries often encounter challenges with implementation of national residue monitoring due to instrument maintenance. Capacity building is therefore critical in basic maintenance and troubleshooting. Thus, the Joint FAO/IAEA Division last year supported two group trainings, one for the Asia Pacific region in Singapore with cooperation with AVA, where 30 participants benefited; and the other in South Africa involving 25 laboratory scientists from Africa, Asia and Latin America. These training courses were implemented in partnership with private sector and more such collaboration is encouraged.

Support to Codex and Participation in Codex meetings

17. The Joint FAO/IAEA Division has produced and coordinated technical input to Codex, including the CCPR. At Codex, member countries have also provided the Joint FAO/IAEA Division with feedback on potential future research and development work. Participation at Codex meetings over the period covered by this report has included a meeting of the Codex Alimentarius Commission with a contribution to a plenary discussion for international organizations. This was an opportunity for the Joint FAO/IAEA Division to highlight its commitment to Codex and to strengthening global partnerships for sustainable development in terms of the application of Codex standards and the peaceful use of nuclear techniques in food and agriculture. The Joint FAO/IAEA Division also participated in the past sessions of the Codex Committee on Contaminants in Foods (CCCF), Codex Committee on Residues of Veterinary Drugs in Foods (CCRVDF) and CCPR. Another example of providing support to Codex and helping develop Codex standards is the Joint FAO/IAEA Division working with radiation safety experts in IAEA and WHO to develop Criteria for Radionuclide Activity Concentrations for Food and Drinking Water, which was published by the IAEA as TECDOC-1788 and is freely available online⁷. The Joint FAO/IAEA Division is pleased to assist in the development of international standards and thus co-organized and hosted a meeting of the Technical Panel on Phytosanitary Treatments (TPPT 2017), which evaluates data submissions from national and regional plant protection organizations and provides guidance to the Standards Committee regarding specific phytosanitary treatment issues pertaining to the use of irradiation technologies.

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

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

⁷ <http://www-pub.iaea.org/books/IAEABooks/11061/Criteria-for-Radionuclide-Activity-Concentrations-for-Food-and-Drinking-Water>

18. The Joint FAO/IAEA Division continues to provide technical support to the electronic working groups (EWG), such as contribution to the electronic working group of the Codex Committee on Food Import and Export Inspection and Certification Systems (CCFICS) to define the terms “food fraud” and “food integrity”.
19. The Joint FAO/IAEA Division is pleased to continue to support CCPR work on developing and promulgating the standards and will continue to work with member countries to enhance food safety and control systems.
20. In cooperation with the FAO Regional Office for Africa as well as the National Metrology Institute of South Africa, the Joint FAO/IAEA Division is organizing the “African Food Safety Workshop to Promote Standards, Reliable Methods of Analysis and Interinstitutional Cooperation, for better Control of Mycotoxins and Related Contaminants (including pesticides)” in Pretoria, South Africa, 4-8 June 2018. CCPR members are hereby encouraged to attend and contribute.

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 Resides in Foods
	Completed CRPs
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

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	Inter-regional	INT/5/154	Improving Food Safety through the Creation of an Inter-regional Network that Produces Reliable Scientific Data Using Nuclear and Isotopic Techniques

Table 3. New IAEA TCPs supported by the Joint FAO/IAEA Division and relevant to CCPR's work (Beginning 2018)

Number	Country/ Region	Project Concept No.	Title
1	Botswana	BOT5017	Enhancing Capabilities for Inter-Institutional Monitoring of Chemical Food Contaminants Using Nuclear/Isotopic and Complementary Analytical Techniques
2	Cameroon	CMR5023	Strengthening Laboratory Capabilities to Monitor Contaminants in Fisheries Products
3	Costa Rica	COS5036	Improving Analytical Capacity to Monitor Food Contaminants and Veterinary Drug Residues Using Nuclear/Isotopic and Complementary Techniques
4	Cuba	CUB5022	Promoting Food Safety through the Mitigation of Contaminants in Fruits for Human Consumption
5	Mongolia	MON5024	Enhancing Food Safety Analytical Capabilities for Veterinary Drug Residues and Related Contaminants Using Isotopic Techniques
6	Morocco	MOR5037	Enhancing Control of Chemical Food and Feed Contaminants, Animal Disease Diagnosis and Trade in Fresh Fruits
7	Namibia	NAM5015	Developing Capacity of the National Standard Institution and Agro-Marketing and Trade Agency in the Areas of Food Safety
8	Niger	NER5022	Strengthening Nuclear / Isotopic and Complementary Laboratory Capabilities for Monitoring Contaminants in Food, Feed and Water
9	T.T.U.T.J of T. Palestinian A.	PAL5010	Strengthening Capability to Monitor Contaminants in Food and Related Matrices through Nuclear and Complementary Analytical Techniques
10	Sudan	SUD5039	Enhancing the Capacity to Monitor Pesticide and Veterinary Residues in Food Using Nuclear and Complementary Techniques
11	Uganda	UGA5040	Strengthening Multi-Sectoral Food Contaminant Monitoring Programmes Through the Effective Use of Nuclear, Isotopic and Complementary Techniques
12	Viet Nam	VIE5022	Promoting Interlaboratory Comparison and Accreditation in Testing Chemical Contamination for Food Safety
13	Zambia	ZAM5032	Strengthening and Expanding Analytical Capacity to Monitor Food Contaminants using Nuclear/Isotopic and Complementary Tools

PART II:**UPDATE ON OECD ON RESIDUE CHEMISTRY AND PESTICIDE MINOR USES RELEVANT TO CCPR WORK**

(Prepared by the Organization for Economic Cooperation And Development (OECD))

A.1. Background

1. This document is provided to CCPR delegates for information. It gives an update of OECD activities in the area of pesticide residue chemistry and minor uses. With respect to the latter, this document is part of the information exchange process between Codex and OECD recommended previously to avoid duplication and overlap between international groups dealing with the issue of minor uses. OECD has an observer status within Codex.
2. The two OECD groups dealing with residue chemistry and minor uses are the Residue Chemistry Expert Group and the Expert Group on Minor Uses. An overview of recent activities within the two groups is given below, following a brief summary of OECD work on pesticides.

A.2. About the OECD work on Pesticides and Sustainable Pest Management

3. The Pesticide Programme was created in 1992 within the OECD's Environmental Health and Safety division to help OECD countries:
 - harmonise their pesticide review procedures,
 - share the work of evaluating pesticides, and
 - reduce risks associated with pesticide use.
4. The Pesticide Programme is directed by the Working Group on Pesticides (WGP), composed primarily of Delegates from OECD Member countries, but also including representatives from the European Commission and other international organisations (e.g. Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), World Health Organization (WHO), EPPO), and experts from the pesticide industry and public interest organisations (NGOs).

A.3. OECD Residue Chemistry Expert Group

5. The Residue Chemistry Expert Group (RCEG) was established in 2003. Its objectives are to:
 - Harmonise the way residue testing is conducted and results are interpreted,
 - Develop methods to support international harmonisation of maximum residue limits (MRLs) (the OECD does not set MRLs).
6. Nine OECD Test Guidelines have been published, as follows: **TG 501** Metabolism in Crops; **TG 502** Metabolism in Rotational Crops; **TG 503** Metabolism in Livestock; **TG 504** Residues in Rotational Crops (Limited Field Studies); **TG 505** Residues in Livestock; **TG 506** Stability of Pesticide Residues in Stored Commodities; **TG 507** Nature of Pesticide Residues in processed Commodities - High Temperature-Hydrolysis; **TG 508** Magnitude of Pesticide Residues in Processed Commodities; **TG 509** Crop Field Trial.
7. Seven Guidance Documents are available: Definition of Residue; Overview of Residue Chemistry Studies; Magnitude of Pesticide Residues in Processed Commodities; Pesticide Residue Analytical Methods; Crop Field Trials; and Residues in Livestock. In 2016, the second edition of the 2011 Guidance Document on Crop Field Trials (which deals with proportionality issues, clarifies sampling procedures and takes into account national / Codex information on recent changes in crop groups) was published.
8. The MRL Calculator, a tool for statistical calculation of MRLs was published in 2011. It is an Excel spreadsheet simple to use without requiring extensive statistical knowledge from the user.
9. All the documents mentioned above and the MRL calculator are available on the OECD public web site: <http://www.oecd.org/env/ehs/pesticides-biocides/publicationsonpesticideresidues.htm>
10. The following output is in preparation: development of a new Guidance Document for Rotational Crop Field Trials; the draft GD is expected to be finalised in 2018. Potential future work of the expert group might include the development of new Guidance Documents on residues in honey and in aquaculture fish arising from residues in aquaculture feeds and the revision of the OECD TG 509 on Crop Field Trials and the OECD GD on Definition of Residue.

A.4. OECD Expert Group on Minor Uses

11. The Expert Group on Minor Uses (EGMU) was established in 2007. The current work plan of the OECD EGMU focuses on issues associated with cooperation, technical and policy activities with the aim of facilitating the development of data and registration of pesticides for minor uses. As with many OECD chemicals and pesticide projects, the EGMU works towards providing the infrastructure, guidance and tools for promoting the registration of pesticides for minor uses, including aspects of data requirements, data generation and opportunities for harmonization to make available data useful across countries. The OECD work focuses on developing tools for risk assessment and mechanisms to facilitate co-operation and work-sharing. For further information, see the OECD website:

<http://www.oecd.org/env/ehs/pesticides-biocides/minoruses.htm>

12. Two Guidance Documents have been published: a Guidance Document on Defining Minor Uses of Pesticides and a Guidance Document on Regulatory Incentives for the Registration of Pesticide Minor Uses.
13. Two survey reports have been published: the Survey Results on Regulatory Incentives for the Registration of Pesticide Minor Uses and the Survey Results on Efficacy & Crop Safety Data Requirements and Guidelines for the Registration of Pesticide Minor Uses.
14. All OECD Minor Uses publications are available at:

<http://www.oecd.org/env/ehs/pesticides-biocides/publicationsonminorusesofpesticides.htm>

15. Currently, three main activities are underway, as follows.

- **Project 1:** *work towards developing a Guidance Document to address & solve minor uses:*

Responses to a 2013 survey to collect information on existing national and regional processes and known data exchanges are being analyzed and a report of the survey was made available in September 2015. The survey report will now be utilized to form the basis of developing an OECD guidance document to address and solve minor uses. Other information sources such as further detailed background provided during the survey about various different approaches and programs operating internationally will also be utilized.

As part of the survey members were requested to propose a suitable crop for establishing a joint project. Many diverse suggestions were made as to a potential crop. EGMU plans to conduct a pilot study of a number of selected crops/pests with real minor use gaps to identify the process, issues and problems with solving such gaps and use the results from the pilot as background for developing a guidance document. This pilot will be based on the pest/crop priorities identified in the Global Minor Use Priority Setting Workshops that were held in 2015 and 2017.

- **Project 2:** *Global Joint Reviews (GJRs) –enhancing minor uses from GJRs:* Information on GJRs relevant for minor uses is being collated as part of the existing work associated with the Global Joint Review MRL Analysis project and further sources of information are being explored. The first aim of the work is to identify differences in uses (crops) approved in various countries through GJRs. Subsequent aims would involve identifying the reasons for these differences and activities or initiatives that could enhance the scope of minor uses approved amongst countries through GJRs. A discussion paper on opportunities or activities that would enhance minor uses in GJRs is expected to be ready in the last quarter of 2018.
 - **Project 3:** *work towards developing a Guidance Document on the exchange and use of international efficacy & crop safety data for minor uses:* A draft of the guidance document is being developed that will be available for further review by members of EGMU in the second quarter of 2018. While some OECD countries do not currently require efficacy data, it was confirmed as an important consideration amongst the EGMU participants. The first step of the project – collecting and compiling information and data relating to pesticides efficacy for minor uses crops – is completed.
16. Finally, the members of EGMU will meet at OECD headquarters in Paris in the afternoon on the 20th of June 2018 and they will have a joint session with the members of Expert Group on BioPesticides (EGBP) on the same day in the morning.