

CODEx ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
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World Health
Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON RESIDUES OF VETERINARY DRUGS IN FOODS

25th Session
(Virtual)
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MATTERS OF INTEREST ARISING FROM THE
JOINT FAO/IAEA CENTRE OF NUCLEAR TECHNIQUES IN FOOD AND AGRICULTURE

(Prepare by the Joint FAO/WHO Centre)

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 (the "Joint FAO/IAEA Centre"), support and implement specific activities relevant to the Codex Committee on Residues of Veterinary Drugs in Foods (CCRVDF). This is achieved through the Food and Environmental Protection Section and its associated Laboratory. In collaboration with sister FAO Divisions in Rome, the support is delivered to Member Countries through technical cooperation projects (TCPs), coordinated research projects (CRPs), additional extra-budgetary projects, as well as laboratory-led applied research and technology adaptation to promote food safety, quality and consumer protection and to facilitate trade.
2. Member Countries continue to seek assistance on the use of nuclear and isotopic analytical techniques to analyze, test and monitor veterinary drug residues and related food contaminants. Activities relevant to this Committee since CCRVDF24, as well as those of future relevance, are highlighted below.

CO-ORDINATED RESEARCH ACTIVITIES

3. The Joint FAO/IAEA Centre implements strategic research through CRPs¹. Each CRP involves about fifteen institutions from developed and developing countries that collaborate on a well-defined research topic, typically for five years. Three CRPs relevant to CCRVDF are being implemented or have been initiated since the last meeting. The first CRP (D52039) focuses on residues/contaminants in aquaculture products and seafood and involves participants from food safety and research institutions in Argentina, Belgium, Brazil, Cameroon, Canada, China, Ecuador, Lebanon, Netherlands, Nigeria, Singapore, South Africa, Turkey, Uganda and United States of America (USA). The 3rd research coordination meeting (RCM) for this five-year project was held from 30 May–06 June 2018 in Pretoria, South Africa along with an 'African Food Safety Workshop' that attracted 254 different stakeholders. The 4th and final RCM, planned for 08-14 August 2020 in Vienna, Austria, was recently held virtually, 01-05 March 2021. Participants in this CRP have, amongst other achievements, developed more than 30 analytical methods, many of which have been applied to support national residue monitoring programmes.
4. The 2nd CRP (D52041) focuses on the development of "Integrated Radiometric and Complementary Techniques for Mixed Contaminants and Residues in Foods". Research and regulatory institutions in the following Member Countries are involved: Benin, Botswana, China, Colombia, Ecuador, Italy, Netherlands, Nicaragua, North Macedonia, Pakistan, Papua New Guinea, Peru, Spain, South Africa, Uganda and USA. The research work focuses on the development of multi-class analytical methods to support systematic programmes for detecting and controlling contaminants and residues of different types and from different sources. More than 10 methods have been developed for veterinary and pesticide residues as well as mycotoxins in a range of food commodities. The project's 2nd RCM, co-organized by the Joint FAO/IAEA Centre and the Botswana National Veterinary Laboratory, was held in Gaborone, Botswana, from 25-29 March 2019 while the 3rd RCM, originally planned for 06-10 April 2020 in China, will take place virtually, 26-30 April 2021.

¹ <http://cra.iaea.org/cra/how-to-participate.html>

5. A 3rd CRP, D52043, “Depletion of Veterinary Pharmaceuticals and Radiometric Analysis of their Residues in Animal Matrices” was initiated for the period 2020-2026. The project, a result of deliberations of the 23rd and 24th CCRVDF sessions, particularly on the database on countries’ needs for MRLs, aims to support the establishment of maximum residue limits (MRLs) for certain veterinary drugs in food and enable developing countries to play a greater role in the process. The project so far involves 17 research/regulatory institutions from Bangladesh, Burkina Faso, Brazil, Canada, China, Chile, Costa Rica, Korea (Republic of), Morocco, Pakistan, Sudan, Uganda, Uruguay and USA. Collaborators and partnerships, especially for the synthesis or provision of radiolabeled veterinary compounds, access to animal facilities and good laboratory practice (GLP)-certified laboratories, as well as provision of some specialized training and/or benchmarking opportunities to the participants are most welcome. The 1st RCM, originally planned for the first week of May 2020, will take place virtually, 17-21 May 2021 to fine-tune workplans. The meeting will be attended by researchers from the participating institutions, but other interested parties willing to collaborate are most welcome.

TECHNICAL COOPERATION PROJECTS – CAPACITY BUILDING INCLUDING LABORATORY NETWORKING

6. The Joint FAO/IAEA Centre continues to provide technical backstopping to national, regional and interregional FAO and IAEA TCPs in Member Countries by providing equipment, expert advice, training, analytical methods and opportunities to share knowledge and experience (see Table 1 highlighting selected projects).
7. The Joint FAO/IAEA Centre promotes sharing of laboratory technical knowledge, experiences and resources including methods/protocols for testing residues and contaminants and collecting relevant data. As a mechanism to enhance capacity building a lot of work has been done through regional networks of the Joint FAO/IAEA Centre such as the African Food Safety Network (AFoSaN)², the Latin American and Caribbean Analytical Network (RALACA)³ and Food Safety Asia Network⁴.
8. **Interregional training in Turkey:** An interregional training course on residues in honey and aquaculture products was conducted in 2018 at Bornova Veterinary Control Institute in Izmir, Turkey. It brought together 22 food safety analysts from Argentina, Benin, Plurinational State of Bolivia, Botswana, Cameroon, Chile, Costa Rica, Cuba, Ecuador, Egypt, Honduras, Lebanon, Mongolia, Morocco, Mozambique, Nigeria, Pakistan, Seychelles, Tanzania, Tunisia, Turkey, Uganda and Uruguay. The main purpose of the event was to enhance analytical and regulatory capabilities for obtaining reliable data to support national or international food safety standards for residues.
9. **Interregional training courses on food safety testing laboratories in Botswana and Indonesia:** A group training course was held at the Botswana National Veterinary Laboratory (BNVL) in Gaborone, from 15-19 October 2018 with the aim of advancing testing laboratory practices by boosting staff competence to ensure that test results generated are credible. Thirty-five staff were trained, mainly from food testing laboratories in Angola, Argentina, Benin, Plurinational State of Bolivia, Botswana, Chile, Costa Rica, Cuba, Ecuador, Egypt, Guatemala, Honduras, Indonesia, Mongolia, Morocco, Mozambique, Nigeria, Pakistan, Paraguay, Seychelles, Sri Lanka, Tanzania, Tunisia, Turkey, Uganda, Uruguay and Venezuela. A second training course was hosted by the Indonesian Research Center for Veterinary Science in Bogor, from 24-28 September 2018, focusing on general requirements for competence in food testing laboratories. It attracted 39 participants from 19 countries in the Asia Pacific region and some from the Central Asia Regional Economic Cooperation programme, namely Azerbaijan, Bangladesh, Georgia, Indonesia, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Malaysia, Mongolia, Oman, Pakistan, Papua New Guinea, Philippines, Syrian Arab Republic, Thailand, Turkmenistan, Uzbekistan and Viet Nam.
10. **Interregional training on certified reference and proficiency testing materials for food safety control laboratories, Buenos Aires, Argentina, 06-17 May 2019:** A training course was organized in collaboration with the Servicio Nacional de Sanidad y Calidad Agroalimentaria of Argentina (SENASA) and the Instituto Nacional de Tecnología Industrial. It was attended by 48 participants from Argentina, Benin, Botswana, Chile, Costa Rica, Indonesia, Morocco, Turkey, Uganda and Uruguay. The training focused on relevant standards, guidelines and documents. Knowledge was shared on topics such as organizing production of reference materials and certified reference materials including technical and production requirements. The participants were also trained on proficiency testing (PT) processes including implementation, management and interpretation of the PT results. A number of case studies and experiences across continents were shared on the subject.
11. The Joint Centre also maintains the Food Contaminant and Residue Information System (FCRIS)⁵ a free-to-access resource including analytical detection methods for a range of contaminants and residues in foods.

² <http://www.africanfoodsafetynetwork.org/>

³ <http://red-ralaca.net>

⁴ <http://www.foodsafetyasia.org>

⁵ <http://nucleus.iaea.org/fcris/>

12. ***Interregional training on MRLs in Argentina:*** An interregional training course on the establishment of MRLs for veterinary drug residues and risk assessment was organized in Buenos Aires, Argentina, from 25th March to 5th April 2019 in collaboration with SENASA. Fifty-six participants and resource persons from the following countries took part in the event: Angola, Argentina, Benin, Plurinational State of Bolivia, Botswana, Brazil, Cameroon, Chile, Colombia, Costa Rica, Ecuador, Egypt, Honduras, India, Indonesia, Kenya, Lebanon, Mongolia, Morocco, Mozambique, Nigeria, Panama, Pakistan, Paraguay, Peru, Seychelles, South Africa, Sri Lanka, Tunisia, Turkey, Uganda, Tanzania, USA and Uruguay.
13. ***Asia-Pacific regional training in Philippines:*** A regional Asia-Pacific training course on analytical methods for veterinary drug and pesticide residues was held at the Bureau of Animal Industry, Quezon City, Philippines, from 12-23 November 2018. It aimed at improving the use of reliable analytical methods for testing and monitoring residues of veterinary drugs in foods and benefitted 30 food safety analysts from Bangladesh, Indonesia, Jordan, Lebanon, Malaysia, Mongolia, Oman, Pakistan, Philippines, Syrian Arab Republic, Thailand and Vietnam. The main topics covered included: common guidelines for development and validation of analytical methods; screening and confirmatory analytical techniques; choice and use of stable isotope-labelled compounds; data analysis and computing method-validation parameters; and cross-laboratory studies. The event involved cooperation with Iowa State University's Veterinary Diagnostic Laboratory, USA and the Flanders Research Institute for Agriculture, Fisheries and Food, Belgium.
14. ***Asia regional training course on cost-effective analysis of targeted veterinary drug residues and associated hazards in food, 26 – 30 August 2019 in Malaysia:*** The training on veterinary drug residues and related hazards of public health and trade concerns to Asia was organized at the Veterinary Public Health Laboratory, Department of Veterinary Services, in Sepang, Selangor, in collaboration with the College of Veterinary Medicine, Iowa State University. The event was attended by 29 participants from 13 Asian countries and involved: screening and confirmatory analysis of the targeted residues/contaminants; cost-effective sample/matrix preparation; and comparative data analysis. Through the training, valuable experience and knowledge were gained on topics such as validation of testing protocols, performance criteria and how to determine matrix effects in confirmatory analysis. The event has contributed to enhancing the capabilities of the host institute in Malaysia and other institutions, to train further scientists and analysts.
15. ***Africa regional training in Burkina Faso:*** An African regional training course on analytical method development/validation and national residue monitoring of veterinary drug and pesticide residues (and other food contaminants) was held in Ouagadougou, Burkina Faso, from 16-20 July 2018. The event was hosted by the National Public Health Laboratory and attracted 27 participants from 22 countries: Algeria, Botswana, Burkina Faso, Burundi, Cameroon, Chad, Côte d'Ivoire, Egypt, Ghana, Malawi, Mauritania, Mozambique, Namibia, Niger, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Tunisia, Tanzania and Zimbabwe.
16. ***Africa regional training on residues in offal in Tanzania:*** A regional training course on analytical methods for residues of pharmacologically active veterinary substances in animal offal was held from 3-7 December 2018 at the (then) Tanzania Food and Drugs Authority (TFDA) in Dar Es Salaam. The event was attended by 30 participants from Algeria, Angola, Benin, Botswana, Burkina Faso, Cameroon, DR Congo, Egypt, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Morocco, Namibia, Niger, Nigeria, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Tunisia, Tanzania, Zambia and Zimbabwe. The purpose of the event was to develop regional laboratory capabilities to test and monitor offal for residues of pharmacologically active veterinary substances used in animal production. Such capabilities are lacking and, so far, data on residues is also difficult to find. The trainees identified and applied three suitable analytical methods.
17. The Joint FAO/IAEA Centre also supports Member Countries in the production of reference materials; promoting proficiency testing and facilitating ISO accreditation. In Africa, four scientists from Botswana (BNVL), Benin (Laboratoire Central de Contrôle de la Sécurité Sanitaire des Aliments, LCSSA), Nigeria (National Agency for Food and Drug Control) and Morocco (Office National de Sécurité Sanitaire des Produits Alimentaires, ONSSA) were trained for six weeks (July-August 2019) on production of reference material according to ISO 17034:2016 requirements. The training was implemented at the National Metrology Institute of South Africa (NMISA) and aimed at addressing gaps in food safety control systems such as difficulties in the accessibility and affordability of food safety reference materials in Africa, as well the need to enhance laboratory capability in analysis of residues and contaminants.

SOME RELEVANT SCIENTIFIC MEETINGS

18. In cooperation with the NMISA and other stakeholders, the Joint FAO/IAEA Centre successfully organized the “African Food Safety Workshop to Promote Standards, Reliable Methods of Analysis of various residues/contaminants” in Pretoria, South Africa, from 04-08 June 2018. The workshop covered veterinary drug residues, as well as other topics, and has become a biennial event. The follow-up event, which was planned for 06-10 July 2020 at the Emperor’s Palace in Johannesburg, South Africa, is now rescheduled for 27 June – 01 July 2022 at the same venue. It will cover food safety control systems as well as inter- and intra-regional trade. CCRVDF members and interested parties are invited to attend and contribute. Plans are underway to hold a short preparatory virtual session on 29 June 2021.
19. The Joint FAO/IAEA Centre supported a number of Member Countries to attend international conferences, such as the 8th international symposium on hormone and veterinary drug residue analysis⁶, 22–25 May 2018, in Ghent, Belgium. Another event, the 9th EuroResidues conference on Residues of Veterinary Drugs in Food, originally planned for 18-20 May 2020⁷, has been rescheduled and is now planned for 23-25 May 2022. The Head of the Food and Environmental Protection Laboratory of the Joint FAO/IAEA Centre is a member of the scientific committees for both events.

ENHANCING EFFECTIVE PARTICIPATION IN CODEX ACTIVITIES

20. Through regional and national capacity building projects on food safety, the Joint FAO/IAEA Centre planned to support participants from Botswana, Egypt, Ghana, Mauritania, Mozambique, Senegal, Uganda and Zimbabwe to attend and contribute to CCRVDF 25 proceedings at the physical meeting originally planned in San Francisco. These will not be encouraged to attend the virtual event. The regional project is strengthening food safety control systems and enhancing competitiveness of the region’s agricultural exports. Countries are receiving important assistance including advanced training on multi-residue analytical techniques, radio receptor assay screening methods, participation in proficiency testing and inter laboratory studies, production of proficiency testing and reference materials, technical exchanges and minor procurement. One of the project goals is to help as many countries as possible to attain and/or maintain accreditation to ISO17025.

SUPPORTING AMR-RELATED WORK

21. An interregional training course on “Antimicrobial Resistance (AMR) Associated with Food Safety”, was held in Rabat and Casablanca, Morocco, 25-29 March 2019 in collaboration with the Office National de Sécurité Sanitaire des Produits Alimentaires (ONSSA). The course was attended by 21 participants from Angola, Bolivia, Chile, Indonesia, Morocco, South Africa, Sri Lanka, Uganda and Uruguay. The training focused on screening for resistance of selected microbes (in food) to certain antimicrobials, AMR monitoring and surveillance, and good production practices, amongst other topics.

⁶ <http://www.vdra.be/>

⁷ <http://www.euroresidue.nl>

Table 1: Overview of selected projects through which the Joint FAO/IAEA Centre supported or supports the control of veterinary drug residues

Number	Country/ Region	Project No.	Title
1	Benin	BEN5013	Strengthening National Capabilities to Improve the Safety and Competitiveness of Exportable Food Products
2	Botswana	BOT5020	Enhancing Capabilities for a Holistic Approach to Testing Food Hazards in Poultry Production and Products
3	Burundi	BDI5003	Strengthening National Capabilities for Monitoring and Testing Veterinary Drug Residues in Food
4	Cambodia	KAM5004	Strengthening National Capacity for Food and Feed Safety
5	Cameroon	CMR5025	Improving Laboratory Testing Capabilities to Enhance the Safety and Competitiveness of Agricultural Products - Phase I
6	Cote D'Ivoire	IVC5041	Strengthening Capabilities to Monitor Contaminants in Food and the Environment
7	Costa Rica	COS5037	Strengthening Capabilities to Analyse and Monitor Toxic Metals in Animal Products
8	Democratic Rep. of the Congo	ZAI5028	Controlling Food and Feed Contaminants in Fish Production
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	Eritrea	ERI5012	Developing Analytical Capabilities for Food Safety
11	Georgia	GEO5001	Enhancing National Programmes for Testing and Monitoring Food Contaminants and Residues
12	Haiti	HAI5009	Strengthening Laboratory Capacity to Test and Monitor Food Contaminants
13	Mauritania	MAU5008	Strengthening Laboratory Capacity to Analyse and Monitor Residues and Contaminants in Foods
14	Niger	NER5023	Strengthening Capacity of the Public Health Laboratory to Monitor Food Contaminants
15	Namibia	NAM5018	Strengthening Animal Health and Food Safety Control Systems
16	Mauritius	MAR5027	Strengthening Multi-Institutional Laboratory Capabilities to Control Veterinary Drug Residues and Associated Food Contaminants
17	Mozambique	MOZ5010	Establishing confirmatory analytical capabilities for veterinary drug residues and related contaminants in animal products

Number	Country/ Region	Project No.	Title
18	Rwanda	RWA5002	Strengthening Laboratory Capacity to Analyse and Monitor Food Contaminants by Standards Board
19	Sudan	SUD5040	Strengthening the Evaluation of Quality, Monitoring and Control Programmes for Food Contaminants
20	Seychelles	SEY5010	Strengthening Laboratory Capabilities to Enhance Food Safety Using Nuclear and Complimentary Analytical Techniques
21	Lebanon	LEB5016	Strengthening Capacity for Exposure Assessment of Residues and Contaminants in the National Diet
22	Republic of The Marshal Island	MHL5002	Building Core Capacities to Control Contaminants and Other Residues in Food — Phase I
23	Vanuatu	NHE5002	Strengthening Agro-Food Laboratory Quality Infrastructure in Vanuatu
24	Philippines	PHI5035	Advancing Laboratory Capabilities to Monitor Veterinary Drug Residues and Related Contaminants in Foods
25	Kyrgyzstan	KIG5001	Establishing Effective Testing and Systematic Monitoring of Residues and Food Contaminants and of Transboundary Animal Diseases
26	Bahamas	BHA5001	Developing laboratory capacity for testing contaminants in animal and related products including fish in Bahamas
27	Dominica	DMI5002	Enhancing Capacity to Monitor Agrochemical Residues in Foods and Related Matrices
28	Nicaragua	NIC5012	Strengthening the Monitoring and Control System for Food Contaminants
29	Panama	PAN5027	Strengthening Analytical Capabilities for Risk-based Monitoring of Agricultural Products for Internal Consumption
30	Uganda	UGA5042	Strengthening Capabilities of Two Central Food Safety Laboratories and Selected Regional Veterinary Centres of Public Health
31	Regional-Asia and the Pacific	RAS5078	Enhancing Food Safety Laboratory Capabilities and Establishing a Network in Asia to Control Veterinary Drug Residues and Related Chemical Contaminants
32	Regional- Latina America & Caribbean	RLA5081	Improving Regional Testing Capabilities and Monitoring Programmes for Residues/Contaminants in Foods Using Nuclear/Isotopic and Complementary Techniques (ARCAL CLXX)
33	Regional- Latin America & Caribbean	RLA5080	Strengthening the Regional Collaboration of Official Laboratories to Address Emerging Challenges for Food Safety (ARCAL CLXV)

Number	Country/ Region	Project No.	Title
34	Regional- Latin America & Caribbean	RLA5079	Applying Radio-Analytical and Complementary Techniques to Monitor Contaminants in Aquaculture (ARCAL CLXXI)
35	Regional- Africa	RAF5084	Strengthening Food Contaminant Monitoring and Control Systems and Enhancing Competitiveness of Agricultural Exports using Nuclear and Isotopic Techniques (AFRA)