

**JOINT FAO/WHO FOOD STANDARDS PROGRAMME****CODEX ALIMENTARIUS COMMISSION***Thirty-sixth Session**Rome, Italy, 1 - 5 July 2013***ACTIVITIES OF THE JOINT FAO/IAEA DIVISION OF NUCLEAR TECHNIQUES IN FOOD AND AGRICULTURE RELEVANT TO CODEX WORK¹**

1. For almost 50 years, the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture (the Joint FAO/IAEA Division) has promoted the mandates of both FAO, in its efforts to eliminate world hunger and reduce poverty through sustainable agricultural and rural development, improved nutrition and food security, and the International Atomic Energy Agency (IAEA), through peaceful uses of atomic energy to accelerate and expand the contributions of nuclear technologies to promote global health and prosperity.
2. The Joint Division strives to strengthen and enhance capacities for the use of nuclear related techniques for sustainable food security and to disseminate these techniques through international activities including research, training and outreach in its Member States. The Joint Division comprises five sections on food and environmental protection, soil and water management, plant breeding and genetics, animal production and health, and insect pest control.
3. The Joint Division will continue to strengthen its joint efforts with sister divisions in FAO Headquarters to improve food safety, protect consumer health, and facilitate international agricultural trade by providing assistance in four main areas, namely, coordinating and supporting research, providing technical and advisory services, providing laboratory support and training, and collecting, analyzing and disseminating information. The activities most closely related to the work of Codex are the use of ionizing radiation, the control of food contaminants, food authenticity, and nuclear or radiological emergency preparedness for events that could affect food and agriculture.
4. In these Codex-related fields of activity, the Joint Division currently provides technical support and management for twenty two national and eight regional capacity building projects through the IAEA Technical Cooperation program, and coordinates five international research projects.

Food Irradiation

5. Capacity building projects in the Asia-Pacific region have developed Guidelines for the Audit and Accreditation of Irradiation Facilities used for Sanitary and Phytosanitary Treatment of Food and Agricultural Products. These guidelines are being used to develop a regional standard under the Asia and Pacific Plant Protection Commission. A further project in this region is currently developing a Best Practice Manual for Food Irradiation that will support these guidelines and the commercial application of food irradiation. International research activities include a project to develop irradiated food for immunocompromised patients and other target groups, and a second project to develop generic dose quarantine treatments against insect pests.

Control of Food Contaminants

6. Accessing analytical methods remains a problem to many developing country Member States, especially in the form of validated protocols to measure pesticide residues or veterinary drug residues in

¹ Document prepared by and under responsibility of the Joint FAO/IAEA Division (please see <http://www-naweb.iaea.org/nafa/index.html> for additional details).

foods. To help address this issue, the Joint FAO/IAEA Division makes available analytical methods from national authorities and international organizations by publishing them within an easy to use information system² on its web pages and in support of the Codex Committee on Pesticide Residues (CCPR) and the Codex Committee on Residues of Veterinary Drugs (CCRVDF).

7. This Food Contaminant and Residue Information System (FCRIS) is a freely available resource and provides information related to food contaminants and residues, including chemical and toxicological data in addition to methods of analysis suitable for national residue surveillance programs.

8. The Joint Division welcomes the submission of additional analytical protocols from Codex members and observers through the FCRIS database. Relevant information such as accessing certified reference material is also welcome. The system provides a user-friendly platform that facilitates uploading/accessing information.

9. The Joint Division also continues to contribute to the development of guidelines for methods of analysis through respective electronic and in-session activities of a CCRVDF working group on Methods of Analysis for Residues of Veterinary Drugs and a CCPR working group on Development of Performance Criteria for Methods of Analysis of Pesticides.

Food Authenticity

10. The Joint Division provides support to FAO and IAEA Member States for the implementation of holistic food safety and control systems. This includes the development of isotopic and related analytical techniques to verify the origin of food and hence audit information-based traceability systems, and to verify the authenticity of foodstuffs or detect adulteration to combat fraud, enhance food safety and enable international trade in food commodities. For example, such Joint Division activities are expected to contribute to the *Codex Standard for Honey* (CODEX STAN 12-1981) and generally assist in identifying adulteration practices.

11. Capacity building activities in this field include a regional project for food traceability and food safety control systems in South East Asia. Research activities include an international research project on the implementation of nuclear techniques to improve food traceability and a new project will commence in 2013 to research accessible technologies for the verification of origin of dairy products as an example control system to enhance global trade and food safety.

12. Isotopic techniques rely on suitably certified reference materials (CRMs). The Joint FAO/IAEA Division is working with other IAEA laboratories and collaborating institutes to develop CRMs in food matrices for use in food traceability and authenticity work. Research has identified several candidate materials and work is continuing to verify that they meet the necessary stringent criteria.

Japanese Nuclear Emergency

13. Subsequent to our report³ to the 35th Session of the Joint FAO/WHO Codex Alimentarius Commission in July 2012, activities of the Joint FAO/IAEA Division related to the Japanese nuclear emergency of 2011 have involved the following:

- Cooperation with other IAEA departments, World Health Organization (WHO) and other international organizations in the dissemination and interpretation of international standards
- Collection and analysis of monitoring data (FAO/IAEA database)
- Participation in the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) Assessment of Exposure and Dose Assessment for the Public and Environment
- Implementation of activities related to the IAEA Action Plan on Nuclear Safety.

14. As of 30 May 2013, more than 460,000 samples have been reported for over 500 types of foodstuffs in Japan. Fewer samples (less than 1% per month) are exceeding the Japanese standard limits for radioactive

² The Food Contaminant and Residue Information System (FCRIS), available at <http://nucleus.iaea.org/fcris/> or indirectly via <http://nucleus.iaea.org/Home/index.html>

³ See document CAC/35 INF/7 (ftp://ftp.fao.org/codex/Meetings/cac/cac35/if35_07e.pdf) for details.

caesium in foods.

15. Working groups under UNSCEAR have been provided with a comprehensive database of radionuclide concentrations in foodstuffs developed by the Joint FAO/IAEA Division. This database has been validated in collaboration with the Japanese Ministry of Health, Labour and Welfare and Ministry of Agriculture, Forestry and Fisheries of Japan. It is fundamental to the UNSCEAR assessment that is being produced for the United Nations General Assembly and is due to be finalized at the sixtieth UNSCEAR session at the time of writing (May 2013).

Nuclear and Radiological Emergency Preparedness

16. The March 2011 accident at the Fukushima Daiichi nuclear power plant led to a reconsideration and examination of global contingencies, preparedness and resilience for major events involving the dispersion of radionuclides into the environment. In this regard, FAO works in partnership with the IAEA, WHO and other UN agencies through the Joint FAO/IAEA Division in preparing for and responding to nuclear or radiological emergencies in accordance with the Joint Radiation Emergency Management Plan of International Organizations.

17. Post-accident, considerable attention focused on the radionuclide contamination of food, related standards and operational intervention levels. The Joint FAO/IAEA Division, through the IAEA Radiation Safety Standards Committee (RASSC)⁴, has been intimately involved with discussions on reference levels for foodstuffs contaminated as a result of a nuclear or radiological emergency, with particular reference to the situation in Japan, as was reported in detail to the 7th Session of the Codex Committee on Contaminants in Food⁵ when it was considering revision of the guideline levels for radionuclides in the *General Standard for Contaminants and Toxins in Food and Feed* (CODEX STAN 193-1995). There are several international standards related to radionuclides in food and drinking (potable) water which are used in an emergency and also under “normal” conditions. However, activity concentrations in these standards differ due to various considerations related to protecting consumers in different circumstances.

18. The IAEA is addressing in detail the technical basis and explanation for criteria to be used for restrictions on the distribution and consumption of contaminated food, milk and water within the accident state and state(s) impacted by a release following a nuclear or radiological emergency within the process of review and revision of the IAEA Safety Requirements on Preparedness and Response for a Nuclear or Radiological Emergency, (GS-R-2, co-sponsored by FAO, IAEA, ILO, OECD/NEA, PAHO, OCHA and WHO).

19. The IAEA Secretariat has also established a Working Group, together with relevant international organizations⁶ to carry out work in relation to the control of foodstuffs and in support of the IAEA Action Plan on Nuclear Safety. A discussion paper developed by the Working Group will document the various national and international standards, the basis on which they have been derived and the circumstances in which they are intended to be used. The document will provide an explanation of existing standards, including numerical values and their application. It will be developed and submitted to RASSC for consideration in early July 2013.

20. The discussion paper will be a valuable inventory that will be of use to all States as an information document and will form the basis for international discussions on ways to facilitate the understanding of numerical values of activity concentrations and their application. The document will have added credibility through the involvement of other international organizations (EC, FAO, ICRP, NEA/OECD and WHO).

⁴ The IAEA Radiation Safety Standards Committee (RASSC) is a standing body of senior experts in radiation safety, established by the Deputy Director General, Head of the Department of Nuclear Safety and Security. RASSC advises the Deputy Director General on the radiation safety programme for the development, review and revision of standards relating to radiation safety and the programme for their application. Its objectives are to provide feedback and recommendations to the Agency on the radiation safety programme and areas for improvement, and to achieve consensus, quality, coherence and consistency in the development of IAEA safety standards.

⁵ Document CX/CF 13/7/4 (please see ftp://ftp.fao.org/Codex/Meetings/cccf/cccf7/cf07_04e.pdf)

⁶ The Working Group will include representatives from the Joint FAO/IAEA Division and the Joint FAO/WHO Codex Secretariat.