



**JOINT FAO/WHO FOOD STANDARDS PROGRAMME  
CODEX COMMITTEE ON CONTAMINANTS IN FOODS**

**Fifth Session**

**The Hague, The Netherlands, 21 – 25 March 2011**

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

(Submitted by the International Atomic Energy Agency)<sup>1</sup>

1. For almost 50 years, the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture has uniquely 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 IAEA, through peaceful uses of atomic energy to accelerate and expand the contributions of nuclear technologies to promote global health and prosperity.
2. The mission of the Joint FAO/IAEA Programme on Nuclear Techniques in Food and Agriculture is to strengthen capacities for the use of nuclear methods to improve technologies for sustainable food security and to disseminate these techniques through international activities in research, training and outreach in its Member States. The Joint FAO/IAEA Programme is subdivided into four major subprogrammes on improving food and environmental safety, sustainable intensification of crop production systems, sustainable intensification of livestock production systems and sustainable control of major insect pests.
3. The Food and Environmental Protection Section (Vienna) and the Food and Environmental Protection Laboratory of the FAO/IAEA Agriculture and Biotechnology Laboratories (Seibersdorf) implements the Food and Environmental Protection Subprogramme. The Subprogramme will continue to strengthen our joint efforts with FAO to protect human 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. These activities are primarily related to the use of ionizing radiation, the control of food contaminants, and the management of radiological and nuclear emergencies affecting food and agriculture.
4. Highlights of some Food and Environmental Protection Subprogramme activities related to food contamination are as follows:

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<sup>1</sup> Document prepared by and under the responsibility of the IAEA.

### NEW COORDINATED RESEARCH PROJECTS

5. Producing safe and high quality food is a prerequisite to ensure consumer health and successful domestic and international trade, and is critical to the sustainable development of national agricultural resources. Systems to trace food or feed products through specified stages of production, processing and distribution play a key role in assuring food safety. Such traceability systems are typically based on a continuous “paper-trail” and effective labelling. However, analytical techniques that enable the provenance of food to be determined provide an independent means of verifying “paper” traceability systems and also help to prove product authenticity, to combat fraudulent practices and to control adulteration, which are important issues for economic, religious or cultural reasons.

6. In this regard, we are pleased to report that a new Coordinated Research Project (CRP) on the *Implementation of Nuclear Techniques to Improve Food Traceability* has recently commenced. The first Research Coordination Meeting (RCM) under the CRP will be held at IAEA Headquarters in Vienna, Austria from 9-13 May 2011.

7. The project will address some of the challenges that developing countries are facing in ensuring food traceability. For example, in addition to well publicized food safety incidents such as aflatoxins in maize, dioxins in pork, melamine in dairy products, and Salmonella in peanuts, new hazards and risks are continually emerging. These may be related to unintentional contamination, e.g. agrochemicals or bacteria, or intentional contamination (adulteration for economic fraud or with the intent to harm consumers). It is therefore intended that the project will help laboratories in Member States to establish robust analytical techniques to determine provenance of food through the assessment of the isotopic and elemental composition of foodstuffs using an integrated and multidisciplinary approach. The immediate benefit to laboratories will be the implementation and application of state-of-the-art nuclear measurement techniques to determine the provenance of foodstuffs. Techniques developed in the project will complement analytical methods to detect residues and contaminants in foods within holistic food safety systems.

### ON-GOING COORDINATED RESEARCH PROJECTS

8. As noted<sup>2</sup> at the 4<sup>th</sup> CCCF, the on-going CRP on *Applications of Radiotracer and Radioassay Technologies to Seafood Safety Risk Analysis* held its third Research Coordination Meeting at IAEA Headquarters in Vienna, Austria, from 1-5 February 2010. The meeting was attended by participants from Brazil, Chile, Pakistan, the Philippines, Thailand and Vietnam. Experts from Canada, China, France, French Polynesia and Japan also provided scientific and technical support to the participants.

9. The IAEA is pleased to note the conclusions and report of the 73<sup>rd</sup> Meeting of JECFA related to the submission of research data arising from project participants (Canada, Chile, China, Japan, Thailand and Vietnam) for the potential establishment of maximum levels for cadmium in seafood (oysters, scallops and cephalopods), and looks forward to the further consideration of the JECFA report through the CCCF.

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<sup>2</sup> ALINORM 10/33/41, paragraph 42.

### SAMPLING PROCEDURES TO DETECT MYCOTOXINS IN AGRICULTURAL COMMODITIES

10. Adherence to regulatory limits for mycotoxins in agricultural commodities is important to safeguard consumers and to permit trade in affected commodities across international borders. Reliable estimates of mycotoxin concentrations are required to implement regulatory decisions on the suitability of lots of produce for consumption or trade. Effective schemes to test for mycotoxins depend not only upon sound analytical methods, but also on well designed and implemented sampling plans.

11. In this regard, we are pleased to report the publication of a book on *Sampling Procedures to Detect Mycotoxins in Agricultural Commodities*<sup>3</sup>. The manual provides information to food analysts and regulatory officials on effective sampling plans to detect mycotoxins in food. The concepts of uncertainty and variability in mycotoxin test procedures are discussed as well as the importance of ensuring that samples are representative of the lot being sampled, and the consequences of a poorly designed sampling plan on the reliability of the measured levels of mycotoxins, possibly resulting in legal disputes and barriers to trade.

12. This manual discusses the mycotoxin sampling plan in the context of the multi-stage mycotoxin test procedure; sampling, sample preparation and analysis; explores uncertainty and variability in mycotoxin test procedures, and; describes the design of sampling plans, the use of operating characteristic curves and the calculation of acceptance probability.

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Th.B. Whitaker, North Carolina State University, Raleigh, NC, USA; A.B. Slate, North Carolina State University, Raleigh, NC, USA; M.B. Doko, International Atomic Energy Agency, Vienna; B.M. Maestroni, International Atomic Energy Agency, Vienna; A. Cannavan, International Atomic Energy Agency, Vienna (Eds.) (2010). *Sampling Procedures to Detect Mycotoxins in Agricultural Commodities*. Springer, Dordrecht, Heidelberg, London, New York, ISBN 978-90-481-9633-3.