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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

WORLD HEALTH ORGANIZATION

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

Thirty-second Session

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REPORT ON ACTIVITIES OF THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA) RELEVANT TO CODEX WORK[1]

1. Since 1964, the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture has been in a unique position to promote 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 of 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 and knowledge through international activities in research, training and outreach in its Member States. The Joint FAO/IAEA Programme is subdivided into four major subprogrammes on sustainable intensification of crop production systems, sustainable intensification of livestock production systems, sustainable control of major insect pests and improving food and environmental safety. The FAO/IAEA Agriculture and Biotechnology Laboratory (Seibersdorf) and the IAEA Marine Environment Laboratory (Monaco) play key roles in supporting the Joint FAO/IAEA Programme.

3. The Food and Environmental Protection Section of the Joint FAO/IAEA Division and the Agrochemicals Unit of the FAO/IAEA Agriculture and Biotechnology Laboratory implement the food and environmental safety subprogramme. The subprogramme provides 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, primarily in areas related to the use of ionizing radiation, pesticide and veterinary drug residues, and radioactive contamination of foodstuffs.

4. Highlights of Food and Environmental Protection Subprogramme activities are as follows:

[1] Document prepared by and under responsibility of IAEA.

CONTAMINANTS IN FOODS

5. A representative of the IAEA attended the 3rd Session of the Codex Committee on Contaminants in Foods (ALINORM 09/32/41), including the in-session physical Working Group on Priorities of Contaminants and Naturally Occurring Toxicants Proposed for Evaluation by the JECFA, to report (CX/CF 09/3/3-Add.1) on the following matters of interest to the Committee.

Coordinated Research Project on Applications of Radiotracer and Radioassay Technologies to Seafood Safety Risk Analysis

6. The IAEA representative provided an update on recent activities of the IAEA Coordinated Research Project (CRP) on Applications of Radiotracer and Radioassay Technologies to Seafood Safety Risk Analysis. It was recalled that the intent of the project was to provide research for the potential establishment of maximum levels in seafood for those contaminants already evaluated (cadmium), as well as contaminants not evaluated to date (harmful algal blooms, persistent organic pollutants and other toxins), through the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and the Joint FAO/WHO Codex Alimentarius Commission.

7. The Committee was informed that subsequent to the Consultants Meeting and the 1st Research Coordination Meeting[2] held under the CRP, the 2nd Research Coordination Meeting met at the International Centre for Theoretical Physics in Trieste, Italy, from 8-12 December 2008.[3] Among other activities, the 2nd Research Coordination Meeting noted research reports presented by the CRP participants, including representatives from Chile, China, France, French Polynesia, Ghana, Japan, the Philippines, Thailand and Vietnam. The presentations included information on production and trade statistics related to seafood trade, including information and data on toxic metals, ciguatera fish poisoning and paralytic shellfish poisoning.

8. The IAEA representative offered to keep the next session of the CCCF apprised of additional information on continuing activities of the CRP, including the provision of the results of the research on cadmium in seafood for evaluation by JECFA.

Survey of Fumonisin B1 Contamination of Food-Grade Commercial Maize Kernel Lots from Five Sampling Areas in Nigeria

9. The IAEA representative informed the Committee of the results of a study undertaken in collaboration with the Nigerian National Agency for Food and Drug Administration and Control (NAFDAC) designed to assess the incidence and contamination levels of fumonisin B1 in maize samples marketed in five geographical locations in Nigeria.[4]

10. The study indicated that fumonisin B1 is a widespread contaminant of maize kernels in Nigeria and although various contamination levels were encountered across the five different areas, the overall results revealed relatively low levels of contamination. It was noted that the enforcement of good agricultural practices, including the disposal of visibly damaged kernels, screenings and fines through cleaning procedures, and wet food processing, were strongly recommended to reduce the fumonisin B1 content, thus preventing exposure of consumers to harmful toxins in food.

11. The representative of the IAEA offered to make the full results of the study available to the JECFA and the CCCF for the proposed future work on establishing maximum levels and developing a sampling plan for fumonisins in maize and maize-based products.

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2 See CX/CF 08/2/3-Add. 1 of February 2008 for details.

3 The full report of the *Second Research Coordination Meeting (RCM) for the Coordinated Research Project on Applications of Radiotracer and Radio-assay Technologies to Seafood Safety Risk Analysis* is available on request.

4 Produced by the Agrochemicals Unit, FAO/IAEA Agriculture and Biotechnology Laboratory, IAEA Laboratories, in Seibersdorf, Austria, in collaboration with the Mycotoxin Unit, Oshodi Central Laboratories, NAFDAC, in Lagos, Nigeria.

PESTICIDE RESIDUES IN FOODS

12. A representative of the IAEA attended the 41st Session of the Codex Committee on Pesticide Residues (ALINORM 09/32/24), and chaired the in-session Working Group on Methods of Analysis. Among other issues, the IAEA representative introduced the revised version (CX/PR 09/41/5) of the Guidelines on the Estimation of Uncertainty of Results for the Determination of Pesticide Residues (CAC/GL 59-2006), and outlined the major issues associated with the revisions of the text, including the conclusions and recommendations of the Working Group (Conference Room Document 24). The Committee noted that the revised document was intended to be incorporated as an Annex to the Guidelines.

13. On the basis of these discussions, the Committee agreed to return the proposed draft Guidelines (Appendix X, ALINORM 09/32/24) to Step 3 for circulation, comments and consideration by an electronic Working Group under the coordination of the IAEA, who would prepare a revised version for consideration by the next session of the Committee. The Committee also agreed to re-establish the *ad hoc* Working Group during its next session under the chairmanship of the IAEA.

14. The IAEA looks forward to the continued consideration of issues related to methods of analysis and sampling for pesticide residues through the Codex Committee on Pesticide Residues, including serving as Chairman of the in-session Working Group on Methods of Analysis.

VETERINARY DRUG RESIDUES IN FOODS

15. A representative of the IAEA attended the 18th Session of the Codex Committee on Residues of Veterinary Drugs in Foods, and reported (CX/CF 09/18/3-Add. 1) on the following matters of interest to the Committee.

Coordinated Research Project on the Development of Radiometric and Allied Analytical Methods to Strengthen National Residue Control Programs for Antibiotic and Anthelmintic Veterinary Drug Residues

16. The IAEA representative noted that a new Coordinated Research Project (CRP) on the Development of Radiometric and Allied Analytical Methods to Strengthen National Residue Control Programs for Antibiotic and Anthelmintic Veterinary Drug Residues had been initiated. The main purpose of the CRP is to assist FAO and IAEA Member State laboratories in meeting the need for effective and appropriate monitoring methods for residues of selected antibiotic and anthelmintic veterinary medicines. Multi-analyte immunochemical screening methods utilizing radioactive tracers and physico-chemical screening techniques, including High Performance Thin Layer Chromatography (HPTLC) with optical scanning and/or autoradiography, will be developed. Confirmatory assays meeting the requirements of regulatory authorities will also be developed and validated.

17. In order to promote effective intervention policies to prevent/minimize drug resistance, emphasis will be placed on anti-parasitic drugs widely used in developing countries, such as benzimidazoles and macrocyclic lactones, and compounds highlighted by the Joint FAO/WHO/OIE Expert Meeting on Critically Important Antimicrobials[5] (Rome, Italy, 26-30 November 2007), including widely used antibiotics such as aminoglycosides, cephalosporins, macrolides, quinolones, sulfonamides and tetracyclines.

18. Further information on the first Research Coordination Meeting to be held under this project (Vienna, Austria, 19-23 October 2009) was also provided.[6]

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5 Please see http://www.who.int/foodborne_disease/resources/Report_CIA_Meeting.pdf for details.

6 Please see http://www-naweb.iaea.org/nafa/fep/news-fep.html for details.

Quality Control of Trypanocidal Drugs

19. The IAEA representative noted that the Animal Health Service of the FAO and the International Federation for Animal Health have signed a Memorandum of Understanding to address the widespread marketing and use of counterfeit and poor quality isometamidium and diminazene based trypanocidal drugs in sub-Saharan Africa**.** The FAO Animal Health Service, in partnership with the Joint FAO/IAEA Division and the International Federation for Animal Health, cooperate to develop standards and protocols for quality control/quality assurance for trypanocidal drugs and other classes of veterinary drugs, including insecticides, acaricides and anthelmintics. The United Nations Industrial Development Organization and Strathclyde University are also associated with this initiative. Additional partners cooperating with this initiative are the United Nations Office on Drugs and Crime and the International Fund for Agricultural Development. The outcomes of this activity will be brought to the attention of the appropriate bodies of the Codex Alimentarius Commission and presented to the OIE for adoption through their usual procedures.

20. The purpose of the Project is to provide validated protocols for drug quality control to the relevant regulatory bodies in countries where these drugs are most used and transfer the developed technical analytical methods to Africa-based laboratories. The establishment of standards for drug quality and protocols for their assessment will allow pharmaceutical companies and laboratories, including local/small companies, to market and compete on an equal basis following internationally agreed quality control/quality assurance protocols.

FAO and IAEA Technical Cooperation Projects

21. The IAEA representative noted that the Food and Environmental Protection Subprogramme is responsible for providing scientific and technical support for over 40 national and regional FAO and IAEA Technical Cooperation (TC) Projects, including several associated with veterinary drug residues. These projects provide recipient countries with equipment, expert advice and training, and are financed by both the FAO and IAEA Technical Cooperation Programmes and through trust funds provided by donor countries and international funding agencies.

For further information please contact:
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