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Food and Agriculture  
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Продовольственная и  
сельскохозяйственная организация  
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Organización de las  
Naciones Unidas para la  
Alimentación y la Agricultura

منظمة  
الأغذية والزراعة  
للأمم المتحدة

# COMMISSION ON PHYTOSANITARY MEASURES

**Fifteenth Session**

**Virtual Meeting, 16, 18 March and 1 April 2021**

**Written reports from international organizations - Report from the Joint  
FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture**

**Agenda item 15.2**

**Prepared by the Joint FAO/IAEA Programme**

**English only**

## Report from the Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture to CPM-15 (2021)

1. The International Atomic Energy Agency (IAEA), in partnership with the Food and Agriculture Organization of the United Nations (FAO), through their Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture (Joint FAO/IAEA Programme), has been actively supporting the Secretariat of the International Plant Protection Convention (IPPC) since 2004 in the development and review of International Standards for Phytosanitary Measures (ISPMs) and its activities to improve phytosanitary capacity of IPPC Contracting Parties.
2. The Joint FAO/IAEA Programme continued to support the IPPC Secretariat in 2019 and 2020.

In support of the *Technical Panel on Phytosanitary Treatments* (TPPT) activities, the Joint FAO/IAEA Programme provided expertise and helped review supporting data related to ISPMs. The Joint FAO/IAEA Programme also supported and hosted the meeting of the TPPT in 2019 at the IAEA headquarters. The Joint FAO/IAEA Programme is proud to have contributed to the study that allowed the TPPT to evaluate the effect of modified atmosphere treatments to the efficacy of phytosanitary irradiation treatments. The Standards Committee agreed based on the TPPTs recommendation, to present to the CPM-15 (2021) as ink amendments the removal of the disclaimer “This irradiation treatment should not be applied to fruits and vegetables stored in modified atmospheres.” from irradiation treatments for Tephritid fruit flies concerning the adopted Annexes to ISPM 28 (the TPPT recommendation is being presented within the phytosanitary treatments for adoption by CPM)

3. In 2019, Andrew Parker left the panel due to his retirement and Walther Enkerlin was appointed as a new panel member, representing the Joint FAO/IAEA Programme. As a member of the TPPT and treatment lead support was provided to the following draft treatment submissions and ISPM revisions:
  - a. Irradiation treatment for the mango pulp weevil, *Sternochetus frigidus*.
  - b. Irradiation treatment for the Jack Beardsley mealybug *Pseudococcus jackbeardsleyi*.
  - c. Revision of ISPM 18: Guidelines for the use of irradiation as a phytosanitary measure.
4. In terms of development of technical materials to support the implementation of the ISPMs, upon the request of FAO and IAEA Member States the following materials were produced in 2019 and 2020:
  - a. *Animated Infographic on ‘How to use fruit fly standards to gain market access’. Fruit flies present a major challenge to international trade, because if they are detected in fruits, trade may be stopped. That is why a set of International Standards for Phytosanitary Measures (ISPMs) on fruit flies has been developed and recently reorganized. When a country wants to export fruit, this set of standards can facilitate the process. Those include ISPM 37 on ‘host status’; ISPM 26 on ‘fruit fly free areas’ and ISPM 35 on “systems approach”. (<http://www-naweb.iaea.org/nafa/resources-nafa/multimedia.html>).*
  - b. *FAO/IAEA (2020). Dose mapping by scanning Gafchromic film to measure the absorbed dose of insects during their sterilization, Parker, A.; Gomez-Simuta, Y.; Yamada, H. (eds.), Vienna, Austria. 17 pp. <http://www-naweb.iaea.org/nafa/ipc/public/Dose-Mapping-Gafchromic-2020-11-02.pdf>.*

- c. *FAO/IAEA (2020). Mapeo de dosis por escaneo de películas Gafchromic para medir la dosis de radiación absorbida por insectos durante su esterilización, Parker, A.; Gómez-Simuta, Y.; Yamada, H. (eds.), Vienna, Austria. 16 pp. <http://www-naweb.iaea.org/nafa/ipc/public/Dose-Mapping-Gafchromic-2020-11-02-spanish.pdf>.*
  - d. *IAEA/OIRSA (2020). Guía armonizada de taxonomía e identificación de tefritidos que pudieran ser considerados de importancia económica y cuarentenaria en América Latina y el Caribe. Guillen Aguilar. Vienna, Austria. 209 pp. <http://www-naweb.iaea.org/nafa/ipc/public/Guia210220.pdf>.*
  - e. *Australia Scientific Advisory Services/FAO/IAEA (2019). A Guide to the Major Pest Fruit Flies of the World, Piper R., R. Pereira, J. Hendrichs, W. Enkerlin and M. De Meyer (eds.), Scientific Advisory Services Pty Ltd. Queensland, Australia. 43 pp.*
  - f. *FAO/IAEA (2019). Fruit Sampling Guidelines for Area-wide Fruit Fly Programmes, Enkerlin W., J. Reyes and G. Ortiz (eds.), Vienna, Austria. 46 pp. <http://www-naweb.iaea.org/nafa/ipc/public/ca5716en.pdf>.*
  - g. *FAO/IAEA (2019). Sterile Insect Release Density Calculations Spreadsheet, Rendón P.A, Enkerlin W.R. and Cáceres C. (eds.), Vienna, Austria. 30 pp. <http://www-naweb.iaea.org/nafa/ipc/public/RELEASE-DENSITIES-MANUAL-V.2.0.pdf>.*
  - h. *FAO/IAEA/OIRSA (2019). Plan de Acción en Caso de Detección de Moscas de la Fruta No-Nativas Reguladas del Género Bactrocera spp En América Latina y El Caribe. Viena, Austria, 60 pp. [http://www-naweb.iaea.org/nafa/ipc/public/Plan-de-Accion-Bactrocera-spp\\_agosto2018-Final.pdf](http://www-naweb.iaea.org/nafa/ipc/public/Plan-de-Accion-Bactrocera-spp_agosto2018-Final.pdf).*
  - i. *FAO/IAEA/USDA (2019). Product Quality Control for Sterile Mass-Reared and Released Tephritid Fruit Flies, Version 7.0. IAEA, Vienna, Austria. 164 pp. <http://www-naweb.iaea.org/nafa/ipc/public/manuals-ipc.html>.*
5. The Joint FAO/IAEA Programme actively supported the IPPC Secretariat in the organization of the FAO symposium on Pest Free Areas and Surveillance held in October 2019 in Shizuoka, Japan, as well as in the drafting and publication of *the IPPC Guide for establishing and maintaining pest free areas. Rome, Italy. 128pp. <http://www.fao.org/3/ca5844en/CA5844EN.pdf>.*
  6. The Joint FAO/IAEA Programme established 10 years ago, a partnership with the USDA in to conduct research to help trade and establish international standards, as well as understand the role of irradiation as a harmless and environmentally friendly option. Through this ongoing collaboration FAO/IAEA and USDA made the results available for experts around the world and ultimately to be used to support the development of international standards. See at: <https://www.iaea.org/newscenter/news/phytosanitary-treatments-using-irradiation-for-fruit-fly-pests-gain-ground>.
  7. The IAEA has supported the development of phytosanitary irradiation and food irradiation in general in Viet Nam and this country hosted a recent virtual meeting as part of an IAEA Project in Asia and Pacific to promote more use of electron beam and x-ray irradiation. Thirteen countries have facilities that irradiate food commercially and approximately half of these irradiate significant amounts of fresh fruits and vegetables (Australia, China, India, Pakistan, Thailand and Viet Nam). Of 50 commercial facilities that irradiate food (outside of China) there are currently 41 gamma irradiation, 3 electron beam and 6 x-ray facilities that operate commercially. See at <https://www.iaea.org/newscenter/news/irradiation-secures-viet-nams-fruit-exports>.

8. In terms of capacity building, the Joint FAO/IAEA Programme has devoted part of its technical assistance delivery to regulatory aspects and facilitating the implementation of the ISPMs in developing countries through regional workshops and technical meetings. In 2019 and 2020, one 1 interregional and 5 regional FAO/IAEA training events (courses and workshops) were held, addressing the following topics:
  - a. *“The Use of the Sterile Insect and Related Techniques for the Integrated Area-wide Management of Insect Pests”*. Interregional Training Course; June–July 2019, Metapa de Dominguez, Chiapas, Mexico and Guatemala City/El Pino, Guatemala.
  - b. *“Modern Taxonomy and Identification Tools of Fruit Fly Species in Africa”*, September 2019, Cotonou, Benin.
  - c. *“Area-wide Integrated Fruit Fly Management including Sterile Insect Technique (SIT) and Male Annihilation Technology (MAT) in Africa”*, October 2019, Reduit, Mauritius.
  - d. *“Assessing the Efficiency of the Sterile Insect Technique for the Control of the Cocoa Pod Borer”*. March 2020, Makassar, Indonesia.
  - e. *“Strengthening Food Security Through Efficient Pest Management Schemes Implementing the Sterile Insect Technique as a Control Method”*. April-May 2020 (virtual).
  - f. *“Packing, Holding and Release of Sterile Fruit Flies and on Area-wide Fruit Fly Trapping”*. December 2020 (virtual).