Food and Agriculture Organization of the United Nations

Report of the APPPC Regional Workshop on Phytosanitary Irradiation Treatment
25 February – 1 March 2019
Hanoi, Vietnam

Executive summary

The regional workshop on phytosanitary irradiation treatment was held from 25 February to 1 March 2019 in Hanoi, Vietnam. Over 30 participants from 18 countries attended the workshop with resource persons from Australia, France, New Zealand and Thailand. The workshop was officially opened by Mr. Nguyen Quy Duong, Deputy Director General of the Plant Protection Department of the Ministry of Agriculture and Rural Development of Vietnam, who acknowledged the significance of phytosanitary irradiation in food safety and trade facilitation. Dr. Piao Yongfan, Senior Plant Protection Officer of the FAO and Executive Secretary of the APPPC, reminded participants of the importance of ISPM No. 18 *Guidelines for the use of irradiation as a phytosanitary measure* and RSPM No. 9 *Approval of irradiation facilities* for phytosanitary irradiation. This workshop focused on the technical background of phytosanitary irradiation, the role that regulatory agencies play in phytosanitary irradiation, food safety and consumer acceptance issues, dosimetry, design and oversight of export and import pathways and auditing of irradiation facilities and systems.

With more than 30,000 tonnes of irradiated fresh produce traded in 2017, the use of irradiation as a phytosanitary treatment has been rapidly growing since its continuous commercial use in 1995. Compared to other phytosanitary treatments, phytosanitary irradiation is a reliable, quick and effective non-chemical process that can be applied to a broad range of products. Its measure of efficacy is usually not acute mortality but prevention of further development or reproduction of a regulated pest. Despite its numerous benefits, phytosanitary irradiation is often perceived as a high-risk, low-benefit technology by consumers. To promote acceptance among consumers, it would be effective to communicate benefits of the technology to consumers and to build trust in the systems that would deliver and regulate the technology.

Before considering phytosanitary irradiation, feasibility study should be conducted for the establishment of the facility and also to assess the suitability of the fruit intended for irradiation treatment. It is also important to initiate discussion with the importing country at an early stage to seek its advice on requirements for phytosanitary irradiation.

Legislations, regulations and official procedures should be in place to regulate the various aspects of phytosanitary irradiation. NPPOs and other national regulatory agencies regulate phytosanitary irradiation to protect the health and safety of people and the environment from the harmful effects of radiation and to ensure the phytosanitary objective is achieved. In order

to ensure the phytosanitary objective of irradiation is met, NPPOs oversee the export pathways and conduct facility audits to assess the ability of irradiation facilities to successfully conduct effective phytosanitary irradiation treatments. Major components of a facility audit would include assessments of capability of the facility to perform treatments to the required specifications, sufficiency of the equipment used, operating protocols undertaken, performance of dosimetry and dose mapping, quality management and maintenance of post-treatment product security.

In the interest of food safety, studies were conducted on the carcinogenic, mutagenic and teratogenic effects on animals fed with irradiated food and effects on humans consuming irradiated food. Irradiated food is regarded safe by international bodies and many national regulatory authorities. There is on-going research in other aspects of phytosanitary irradiation such as verification of efficacy, lowering of required doses and determination of generic doses for insect groups.

Five breakout group discussion sessions were conducted during the workshop for participants to apply their knowledge gained from the presentations. The sessions discussed: 1) preparing an information strategy for food products which have been subjected to phytosanitary irradiation, 2) assessing dosimetry data, 3) evaluating market access proposals which include phytosanitary irradiation, 4) designing an export pathway which includes phytosanitary irradiation, an appropriate assurance system, and a work plan, and 5) drafting a checklist to assess compliance with requirements of RSPM No. 9 *Approval of irradiation facilities* for an irradiation facility audit. Outcomes of the discussion sessions demonstrated the high level of understanding of the topic among the participants. Overall, the workshop was successful in imparting knowledge phytosanitary irradiation to the participants and motivating their active participation.