Food and Agriculture Organization of the United Nations

International Plant Protection Convention
Protecting the world's plant resources from pests

ISPM 28
ANNEX 20

ENG

INTERNATIONAL STANDARD FOR PHYTOSANITARY MEASURES 28

PHYTOSANITARY TREATMENT

PT 20: Irradiation treatment for *Ostrinia nubilalis*

Produced by the Secretariat of the
International Plant Protection Convention (IPPC)

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This phytosanitary treatment was adopted by the Eleventh Session of the Commission on Phytosanitary Measures in 2016.
The annex is a prescriptive part of ISPM 28.

ISPM 28
Phytosanitary treatments for regulated pests

PT 20: Irradiation treatment for *Ostrinia nubilalis*

Scope of the treatment

This treatment comprises the irradiation of fruits and vegetables at a minimum absorbed dose of 289 Gy to prevent F_1 development past fifth instar, or a minimum adsorbed dose of 343 Gy to prevent F_1 egg hatching from irradiated parent pupae (the most tolerant life stage) of *Ostrinia nubilalis* (European corn borer)[1].

Treatment description

Name of treatment	Irradiation treatment for *Ostrinia nubilalis*
Active ingredient	N/A
Treatment type	Irradiation
Target pest	*Ostrinia nubilalis* (Hübner) (Lepidoptera: Crambidae)
Target regulated articles	All fruits and vegetables that are hosts of *Ostrinia nubilalis*

Treatment schedules

Minimum absorbed dose of 289 Gy to prevent F_1 development past fifth instar in eggs through late pupae of *O. nubilalis.*

There is 95% confidence that the treatment according to this schedule prevents F_1 development past fifth instar of not less than 99.987% of late pupae of *O. nubilalis*.

Minimum absorbed dose of 343 Gy to prevent F_1 egg hatching in eggs through late pupae of *O. nubilalis.*

There is 95% confidence that the treatment according to this schedule prevents F_1 egg hatching in eggs of not less than 99.9914% of late pupae of *O. nubilalis*.

This treatment should be applied in accordance with the requirements of ISPM 18 (*Guidelines for the use of irradiation as a phytosanitary measure*).

These irradiation schedules should not be applied to fruits and vegetables stored in modified atmospheres because they may affect the treatment efficacy.

Other relevant information

Because irradiation may not result in outright mortality, inspectors may encounter live but non-viable *O. nubilalis* (larvae, pupae or adults) during the inspection process. This does not imply a failure of the treatment.

[1] The scope of phytosanitary treatments does not include issues related to pesticide registration or other domestic requirements for contracting parties' approval of treatments. Treatments adopted by the Commission on Phytosanitary Measures may not provide information on specific effects on human health or food safety, which should be addressed using domestic procedures before contracting parties approve a treatment. In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration. There is no obligation for a contracting party to approve, register or adopt the treatments for use in its territory.

In evaluating this treatment the Technical Panel on Phytosanitary Treatments (TPPT) considered issues associated with the possible survival of sterile adults. If sufficient numbers of these were to escape from irradiated infested fruits and vegetables and fly into pest monitoring traps, a quarantine response could be triggered, possibly resulting in economic loss and trade restrictions. The TPPT considered that, based on the work described in Hallman and Hellmich (2009) and Hallman *et al.* (2010), the numbers of fit survivors would be sufficiently low to make this an unlikely event.

References

The present annex refers to International Standards for Phytosanitary Measures (ISPMs). ISPMs are available on the International Phytosanitary Portal (IPP) at https://www.ippc.int/core-activities/standards-setting/ispms.

Hallman, G.J. & Hellmich, R.L. 2009. Ionizing radiation as a phytosanitary treatment against European corn borer (Lepidoptera: Crambidae) in ambient, low oxygen, and cold conditions *Journal of Economic Entomology*, 102(1): 64–68.

Hallman, G.J., Levang-Brilz, N.M., Zettler, L. & Winborne, I.C. 2010. Factors affecting ionizing radiation phytosanitary treatments, and implications for research and generic treatments. *Journal of Economic Entomology*, 103(6): 1950–1963.

Publication history

This is not an official part of the standard

2012 Treatment submitted (2012-009)

2012-12 TPPT reviewed treatment and requested additional information

2013-02 TPPT sent letter to Submitter through Secretariat

2013-05 Submitter responded

2013-07 TPPT recommended to SC for MC

2013-09 TPPT approved treatment schedule (virtual meeting)

2013-09 TPPT started drafting paper on adult emergence after irradiation

2014-02 TPPT approved paper on adult emergence after irradiation and submitted to Secretariat

2014-02 SC e-decision for approval for MC

2014-03 Secretariat applied changes suggested by forum and opened poll

2014-03 SC approved draft treatment for MC via poll (2014_eSC_May_06)

2015-02 Member consultation comments under review by TPPT

2015-05 TPPT May virtual meeting reviewed

2015-09 TPPT September meeting reviewed

2015-10 SC approved PT to be submitted for adoption by CPM (2015_eSC_Nov_06)

2016-04 CPM-11 adopted the PT

ISPM 28. Annex 20. *Irradiation treatment for* Ostrinia nubilalis*.* Rome, IPPC, FAO.

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IPPC

The International Plant Protection Convention (IPPC) is an international plant health agreement that aims to protect cultivated and wild plants by preventing the introduction and spread of pests. International travel and trade are greater than ever before. As people and commodities move around the world, organisms that present risks to plants travel with them.

Organization

- There are over 180 contracting parties to the IPPC.
- Each contracting party has a national plant protection organization (NPPO) and an Official IPPC contact point.
- Nine regional plant protection organizations (RPPOs) work to facilitate the implementation of the IPPC in countries.
- IPPC liaises with relevant international organizations to help build regional and national capacities.
- The Secretariat is provided by the Food and Agriculture Organization of the United Nations (FAO).

International Plant Protection Convention (IPPC)

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