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International
Plant Protection
Convention

INTERNATIONAL STANDARD FOR PHYTOSANITARY MEASURES 28

PHYTOSANITARY TREATMENT

ISPM 28
ANNEX 40

ENG

PT 40: Irradiation treatment for Tortricidae on fruits

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

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This phytosanitary treatment was adopted by the Sixteenth Session of the Commission on Phytosanitary Measures in 2022.
The annex is a prescriptive part of ISPM 28.

ISPM 28

Phytosanitary treatments for regulated pests

PT 40: Irradiation treatment for Tortricidae on fruits

Adopted 2022; published 2022

Scope of the treatment

This treatment describes the irradiation of fruits at 250 Gy minimum absorbed dose to prevent the emergence of viable adults of Tortricidae at the stated efficacy.¹

Treatment description

Name of treatment	Irradiation treatment for Tortricidae on fruits
Active ingredient	n/a
Treatment type	Irradiation
Target pests	Species of the family Tortricidae (Lepidoptera)
Target regulated articles	All fruits that are hosts of species of the family Tortricidae

Treatment schedule

Minimum absorbed dose of 250 Gy to prevent emergence of viable adults from irradiated eggs and larvae of Tortricidae.

There is 95% confidence that the treatment according to this schedule prevents the emergence of normal-looking adults from not less than 99.9949% of eggs and larvae of Tortricidae.

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

This treatment should not be applied to fruit stored in a modified atmosphere because the modified atmosphere may affect the treatment efficacy.

Other relevant information

Because irradiation may not result in outright mortality, inspectors may encounter live but non-viable Tortricidae eggs or larvae, or deformed 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.

The Technical Panel on Phytosanitary Treatments (TPPT) based its evaluation of this treatment on the research reported by Hallman *et al.* (2013), which supported the efficacy of irradiation as a treatment for Tortricidae on host commodities.

The efficacy of this schedule was calculated based on a total of 58 779 fifth-instar larvae of *Grapholita molesta* treated with no viable adult emergence; the control emergence was 94.8% (Hallman, 2004). The data for *Grapholita molesta* were used as it is considered the most radio-tolerant of the species studied (Hallman *et al.*, 2013).

The TPPT also considered Arthur (2004), Arthur, Arthur and Machi (2016), Arthur, Machi and Arthur (2016), Batchelor, O'Donnell and Roby (1984), Bestagno *et al.* (1973), Burditt (1986), Burditt and Hungate (1989), Burditt and Moffitt (1985), Dentener, Waddell and Batchelor (1990), Faria *et al.* (1998), Follett (2008), Follett and Lower (2000), Follett and Snook (2012), Hofmeyr, Hofmeyr and Slabbert (2016), Hofmeyr *et al.* (2016), Lester and Barrington (1997), Lin, Horng and Hung (2003), Mansour (2003), Mansour and Al-Attar (2014), Nadel *et al.* (2018) and Wit and van de Vrie (1986).

Extrapolation of treatment efficacy to all fruits was based on knowledge and experience that radiation dosimetry systems measure the actual radiation dose absorbed by the target pest independent of host commodity, and evidence from research studies on a variety of pests and commodities as listed in the references. It is recognized, however, that treatment efficacy has not been tested for all potential fruit hosts of the target pests. If evidence becomes available to show that the extrapolation of the treatment to cover all fruit hosts of Tortricidae is incorrect, then the treatment will be reviewed.

References

The present annex may refer to ISPMs. ISPMs are available on the International Phytosanitary Portal (IPP) at www.ippc.int/core-activities/standards-setting/ispms.

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Publication history

This is not an official part of the standard

2017-06 Treatment submitted in response to 2017-02 call for treatments.

2017-07 Technical Panel on Phytosanitary Treatments (TPPT) reviewed and requested further information from submitter.

2018-05 Standards Committee (SC) added the topic *Irradiation treatment for eggs and larvae of the family Tortricidae (generic)* (2017-11) to the TPPT work programme.

2018-06 TPPT revised the draft and requested additional information from submitter.

2019-07 TPPT revised the draft, restricting the scope to fruits, and recommended it to the SC for approval for first consultation.

2020-02 SC approved for first consultation via e-decision (2020_eSC_May_07).

2020-07 First consultation.

2021-02 TPPT responded to consultation comments, revised the draft and recommended for second consultation.

2021-05 SC approved for second consultation via e-decision (2021_eSC_May_14).

2021-07 Second consultation.

2021-10 TPPT revised and recommended to the SC for approval for adoption by the CPM.

2021-12 SC approved for adoption by the CPM via e-decision (2022_eSC_May_01).

2022-04 CPM-16 adopted the phytosanitary treatment.

ISPM 28. Annex 40. Irradiation treatment for Tortricidae on fruits (2022). Rome, IPPC Secretariat, FAO.

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IPPC

The International Plant Protection Convention (IPPC) is an international plant health agreement that aims to protect global plant resources and facilitate safe trade.

The IPPC vision is that all countries have the capacity to implement harmonized measures to prevent pest introductions and spread, and minimize the impacts of pests on food security, trade, economic growth, and the environment.

Organization

- ◆ There are over 180 IPPC contracting parties.
- ◆ Each contracting party has a national plant protection organization (NPPO) and an Official IPPC contact point.
- ◆ 10 regional plant protection organizations (RPPOs) have been established to coordinate NPPOs in various regions of the world.
- ◆ The IPPC Secretariat 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).

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