



## DRAFT ANNEX TO ISPM 28: Irradiation treatment for Tortricidae on fruits (2017-011)

### Status box

This is not an official part of the annex to the standard and it will be modified by the IPPC Secretariat after adoption.	
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<b>Document category</b>	Draft annex to ISPM 28
<b>Current document stage</b>	To CPM for adoption
<b>Major stages</b>	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 SC added the topic <i>Irradiation treatment for eggs and larvae of the family Tortricidae (generic)</i> (2017-11) to the TPPT work programme with priority 1. 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)
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<b>Notes</b>	2020-02 Edited 2021-04 Edited 2021-11 Edited

### 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.<sup>1</sup>

### Treatment description

**Name of treatment** Irradiation treatment for Tortricidae on fruits

<sup>1</sup> 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.

<b>Active ingredient</b>	n/a
<b>Treatment type</b>	Irradiation
<b>Target pests</b>	Species of the family Tortricidae (Lepidoptera)
<b>Target regulated articles</b>	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.

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 <https://www.ippc.int/core-activities/standards-setting/ispms>.

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