



Draft PT: Irradiation treatment for *Pseudococcus baliteus*

DRAFT ANNEX TO ISPM 28: Irradiation treatment for *Pseudococcus baliteus* (2023-033)

Status box

<i>This is not an official part of the annex to the standard and it will be modified by the IPPC Secretariat after adoption.</i>	
Date of this document	2026-01-16
Document category	Draft annex to ISPM 28
Current document stage	To CPM-20 (2026) for adoption
Major stages	<p>2023-08 Treatment submitted in response to 2017 call for treatments (ongoing).</p> <p>2023-09 Standards Committee (SC) added <i>Irradiation treatment for Pseudococcus baliteus</i> (2023-033) to the work programme of the Technical Panel on Phytosanitary Treatments (TPPT), subsequently (in 2023-11) assigning it priority 1.</p> <p>2023-10 TPPT revised and recommended to SC for first consultation.</p> <p>2024-03 SC approved for first consultation via e-decision (2024_eSC_May_06).</p> <p>2024-07 First consultation.</p> <p>2024-10 Treatment lead revised.</p> <p>2025-01 TPPT revised the draft, approved the responses to first consultation comments responses and recommended the draft to the SC for second consultation.</p> <p>2025-06 SC approved for second consultation via e-decision (2025_eSC_Nov_03).</p> <p>2025-07 Second consultation.</p> <p>2025-12 Treatment lead revised.</p> <p>2015-12 TPPT reviewed the draft, approved the responses to second consultation comments and recommended the draft to the SC for adoption by CPM (2025_eTPPT_01).</p> <p>2026-01 SC recommended to CPM for adoption via e-decision (2026_eSC_May_06).</p>
Treatment Lead	2023-08 Michael ORMSBY (NZ, Treatment Lead)
Notes	2024-02 Edited 2026-01 Edited

Scope of the treatment

This treatment describes irradiation of fruits, vegetables and plants at 183 Gy minimum absorbed dose to prevent the hatching of eggs from *Pseudococcus baliteus* at the stated efficacy.¹

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.

Treatment description

Name of treatment	Irradiation treatment for <i>Pseudococcus baliteus</i>
Active ingredient	n/a
Treatment type	Irradiation
Target pest	<i>Pseudococcus baliteus</i> Lit, 1994 (Hemiptera: Pseudococcidae)
Target regulated articles	All fruits, vegetables and plants that are hosts of <i>Pseudococcus baliteus</i>

Treatment schedule

Minimum absorbed dose of 183 Gy to prevent the hatching of eggs from *Pseudococcus baliteus*.

There is 95% confidence that the treatment according to this schedule prevents the hatching of eggs from not less than 99.9937% of all life stages of *Pseudococcus baliteus*.

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

This treatment should not be applied to host fruit, vegetables and plants 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 *Pseudococcus baliteus* life stages during the inspection process. This does not imply a failure of the treatment.

The Technical Panel on Phytosanitary Treatments based its evaluation of this treatment on the research reported by Zhao *et al.* (2023), which determined the efficacy of irradiation as a treatment for *Pseudococcus baliteus* on *Cucurbita maxima*. They also considered the information on the effect of irradiation on *Paracoccus marginatus* in Seth *et al.* (2016).

The efficacy of this schedule was calculated based on a total of 47 316 gravid females treated with no egg hatching; the control egg hatching was 98.17% in all confirmatory trials conducted.

Extrapolation of treatment efficacy to all hosts was based on knowledge and experience that ionizing 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. These include studies on the following pests and hosts: *Anastrepha fraterculus* (*Eugenia pyriformis*, *Malus pumila* and *Mangifera indica*), *Anastrepha ludens* (*Citrus paradisi*, *Citrus sinensis*, *Mangifera indica* and artificial diet), *Anastrepha obliqua* (*Averrhoa carambola*, *Citrus sinensis* and *Psidium guajava*), *Anastrepha suspensa* (*Averrhoa carambola*, *Citrus paradisi* and *Mangifera indica*), *Bactrocera tryoni* (*Citrus sinensis*, *Malus pumila*, *Mangifera indica*, *Persea americana*, *Prunus avium* and *Solanum lycopersicum*), *Cydia pomonella* (*Malus pumila* and artificial diet), *Grapholita molesta* (*Malus pumila* and artificial diet), *Pseudococcus jackbeardsleyi* (*Cucurbita* sp. and *Solanum tuberosum*) and *Tribolium confusum* (*Hordeum vulgare*, *Triticum aestivum* and *Zea mays*) (Bustos *et al.*, 2004; Gould and von Windeguth, 1991; Hallman, 2004a, 2004b, 2013; Hallman and Martinez, 2001; Hallman *et al.*, 2010; Jessup *et al.*, 1992; Mansour, 2003; Tunçbilek and Kansu, 1996; von Windeguth, 1986; von Windeguth and Ismail, 1987; Zhan *et al.*, 2016). It is recognized, however, that treatment efficacy has not been tested for all potential hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, the treatment will be reviewed. There is no consistent information stating that the exposure time affects treatment outcomes for ionizing radiation phytosanitary treatments.

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/ispm>.

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