Food and Agriculture Organization of the United Nations

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

ISPM 28
ANNEX 19

ENG

INTERNATIONAL STANDARD FOR PHYTOSANITARY MEASURES 28

PHYTOSANITARY TREATMENT

PT 19: Irradiation treatment for *Dysmicoccus neobrevipes*, *Planococcus lilacinus* and *Planococcus minor*

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

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This phytosanitary treatment was adopted by the Tenth Session of the Commission on Phytosanitary Measures in 2015.
The annex is a prescriptive part of ISPM 28.

ISPM 28
Phytosanitary treatments for regulated pests

PT 19: Irradiation treatment for *Dysmicoccus neobrevipes*, *Planococcus lilacinus* and *Planococcus minor*

Adopted 2015; published 2016

Scope of the treatment

This treatment describes the irradiation treatment of fruits and vegetables to prevent the reproduction of adult females of *Dysmicoccus neobrevipes*, *Planococcus lilacinus* and *Planococcus minor* at the stated efficacy level[1].

Treatment description

Name of treatment	Irradiation treatment for *Dysmicoccus neobrevipes*, *Planococcus lilacinus* and *Planococcus minor*
Active ingredient	N/A
Treatment type	Irradiation
Target pests	*Dysmicoccus neobrevipes* Beardsley, *Planococcus lilacinus* (Cockerell) and *Planococcus minor* (Maskell) (Hemiptera: Pseudococcidae)
Target regulated articles	All fruits and vegetables that are hosts of the above mealybugs

Treatment schedule

Minimum absorbed dose of 231 Gy to prevent the reproduction of adult females of *Dysmicoccus neobrevipes*, *Planococcus lilacinus* and *Planococcus minor*.

Efficacy and confidence level of the treatment is $ED_{99.99023}$ at the 95% confidence level.

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

This irradiation treatment should not be applied to fruits and vegetables stored in modified atmospheres.

Other relevant information

Because irradiation may not result in outright mortality, inspectors may encounter live but non-viable *Dysmicoccus neobrevipes* or *Planococcus lilacinus* or *Planococcus minor* (immatures 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 for use in their territory. Treatments adopted by the CPM may not provide information on specific effects on human health or food safety, which should be addressed using domestic procedures prior to contracting parties approving a treatment for use in its territory. 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.

This treatment schedule was based on the work of Doan *et al.* (2012). In this paper a minimum absorbed dose of 200 Gy prevented reproduction by adult females of *Dysmicoccus neobrevipes* and development to the next generation from all immature stages. A subsequent large scale confirmatory test showed that there was no reproduction at a maximum dose of 231 Gy. Further tests also showed that the other two species were more radio-susceptible than *Dysmicoccus neobrevipes*.

Very little data is available for other members of the Pseudococcidae and all papers are listed in the References. In each case a dose near to or less than 200 Gy was sufficient to ensure no reproduction providing additional confidence in the proposed dose.

References

The present standard 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.

Doan, T.T., Nguyen, T.K., Vo, T.K.L., Cao, V.C., Tran, T.T.A. & Nguyen, N.H. 2012. Effects of gamma irradiation on different stages of mealybug *Dysmicoccus neobrevipes* (Hemiptera: Pseudococcidae). *Radiation Physics and Chemistry*, 81: 97–100 (with supplementary data provided by the submitter).

Dohino, T. & Masaki, S. 1995. Effects of electron beam irradiation on Comstock mealybug, *Pseudococcus comstocki* (Kuwana) (Homoptera: Pseudococcidae). *Research Bulletin of the Plant Protection Service Japan*, 31: 31–36.

Dohino, T., Masaki, S., Takano, T., & Hayashi, T. 1997. Effects of electron beam irradiation on sterility of Comstock mealybug, *Pseudococcus comstocki* (Kuwana) (Homoptera: Pseudococcidae). *Research Bulletin of the Plant Protection Service Japan*, 33: 31-34.

Jacobsen, C.M. & Hara, A.H. 2003. Irradiation of *Maconellicoccus hirsutus* (Homoptera: Pseudococcidae) for phytosanitation of agricultural commodities. *Journal of Economic Entomology*, 96(4): 1334-1339.

Ravuiwasa, K.T., Lu, K.H, Shen, T.C, & Hwang, S.Y. 2009. Effects of irradiation on *Planococcus minor* (Hemiptera: Pseudococcidae). J. Econ. Entomol. 102(5), 1774-1780.

Publication history

This is not an official part of the standard

2012-11 SC added subject under topic: (2006-014) Irradiation treatments

2012-09 Submitted in response to 2012 call for treatments

2012-12 TPPT evaluated submission, drafted schedule and recommended to SC for member consultation

2013-02 Submitted for SC e-decision

2013-04 Approved for member consultation by SC e-decision

2014-04 Treatment lead addressed members and TPG comments

2014-06 TPPT finalized the response and recommended to the SC for adoption

2014-09 SC reviewed (no changes) and recommended for CPM adoption

2015-03 CPM-10 adopted the treatment

ISPM 28. **Annex 19** *Irradiation treatment for* Dysmicoccus neobrevipes, Planococcus lilacinus *and* Planococcus minor (2015). Rome, IPPC, FAO.

2015-07 IPPC Secretariat incorporated minor formatting changes.
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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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