Food and Agriculture Organization of the United Nations

International Plant Protection Convention

ISPM 28
ANNEX 35

ENG

INTERNATIONAL STANDARD FOR PHYTOSANITARY MEASURES 28

PHYTOSANITARY TREATMENT

PT 35: Cold treatment for *Bactrocera tryoni* on *Prunus avium*, *Prunus salicina* and *Prunus persica*

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

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This phytosanitary treatment was adopted by the Fifteenth Session of the Commission on Phytosanitary Measures in 2021.
The annex is a prescriptive part of ISPM 28.

ISPM 28
Phytosanitary treatments for regulated pests

PT 35: Cold treatment for *Bactrocera tryoni* on *Prunus avium*, *Prunus salicina* and *Prunus persica*

Adopted 2021; published 2021

Scope of the treatment

This treatment describes the cold treatment of fruit of *Prunus avium* (cherry), *Prunus salicina* (Japanese plum) and *Prunus persica* (peach and nectarine) to result in the mortality of eggs and larvae of *Bactrocera tryoni* at the stated efficacy.[1]

Treatment description

Name of treatment	Cold treatment for *Bactrocera tryoni* on *Prunus avium*, *Prunus salicina* and *Prunus persica*
Active ingredient	n/a
Treatment type	Physical (cold)
Target pest	*Bactrocera tryoni* (Froggatt, 1897) (Diptera: Tephritidae)
Target regulated articles	Fruit of *Prunus avium* (cherry), *Prunus salicina* (Japanese plum) and *Prunus persica* (peach and nectarine)

Treatment schedules

Schedule 1: 1 °C or below for 14 continuous days

For *Prunus persica* there is 95% confidence that the treatment according to this schedule kills not less than 99.9928% of eggs and larvae of *Bactrocera tryoni*.

Schedule 2: 3 °C or below for 14 continuous days

For *Prunus avium* there is 95% confidence that the treatment according to this schedule kills not less than 99.9966% of eggs and larvae of *Bactrocera tryoni*.

For *Prunus salicina* there is 95% confidence that the treatment according to this schedule kills not less than 99.9953% of eggs and larvae of *Bactrocera tryoni*.

For *Prunus persica* there is 95% confidence that the treatment according to this schedule kills not less than 99.9917% of eggs and larvae of *Bactrocera tryoni*.

[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.

For both schedules, the fruit must reach the treatment temperature before treatment exposure time commences. The fruit core temperature should be monitored and recorded, and the temperature should not exceed the stated level throughout the duration of the treatment.

This treatment should be applied in accordance with the requirements of ISPM 42 (*Requirements for the use of temperature treatments as phytosanitary measures*).

Other relevant information

In evaluating this treatment, the Technical Panel on Phytosanitary Treatments considered issues associated with temperature regimes and thermal conditioning, taking into account the work of Hallman and Mangan (1997).

Schedules 1 and 2 were based on the work of NSW DPI (2008, 2012) and developed using failure to pupariate as the measure of mortality.

The efficacy of schedule 1 was calculated based on the following estimated numbers of treated *Bactrocera tryoni* with no survivors:

- for *Prunus persica*: 41 820.

The efficacy of schedule 2 was calculated based on the following estimated numbers of treated *Bactrocera tryoni* with no survivors:

- for *Prunus avium*: 89 322
- for *Prunus salicina*: 64 226
- for *Prunus persica*: 35 987.

Schedules 1 and 2 were developed using the following commodities and cultivars:

- *Prunus avium* (cherry) (cultivar 'Sweetheart')
- *Prunus salicina* (Japanese plum) (cultivar 'Angelino')
- *Prunus persica* var. *nectarina* (nectarine) (cultivar 'Arctic Snow').

In this treatment, *Prunus persica* includes all cultivars and varieties, including nectarines (Vendramin *et al*., 2014).

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.

Hallman, G.J. & Mangan, R.L. 1997. Concerns with temperature quarantine treatment research. *In* G.L. Obenauf, ed. *Proceedings of the Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reduction*. San Diego, CA, 3–5 November 1997, pp. 79-1–79-4.

NSW DPI (New South Wales Department of Primary Industries). 2008. *Cold treatment of Australian summerfruit (plums, nectarines / peaches) infested with eggs and larvae of the Queensland fruit fly (*Bactrocera tryoni *(Froggatt)) Diptera: Tephritidae*. Gosford, Australia, NSW DPI. 132 pp.

NSW DPI (New South Wales Department of Primary Industries). 2012. *Cold treatment of Australian cherries infested with eggs and larvae of the Queensland fruit fly (*Bactrocera tryoni *(Froggatt)) Diptera: Tephritidae*. Gosford, Australia, NSW DPI. 89 pp.

Vendramin, E., Pea, G., Dondini, L., Pacheco, I., Dettori, M.T., Gazza, L., Scalabrin, S., Strozzi, F., Tartarini, S., Bassi, D., Verde, I. & Rossini, L. 2014. A unique mutation in a MYB gene cosegregates with the nectarine phenotype in peach. *PLoS ONE*, 9(3): e90574 [online]. [Cited 27 November 2020]. https://doi.org/10.1371/journal.pone.0090574

Publication history

This is not an official part of the standard

2017-06 Treatment submitted in response to 2017-02 call for treatments (*Cold treatment of Australian Stone fruit against Mediterranean fruit fly and Queensland fruit fly*).

2017-10 Technical Panel on Phytosanitary Treatments (TPPT) reviewed the submission (virtual meeting).

2018-05 SC added topic *Cold treatment of stone fruit against* Bactrocera tryoni (2017-022B) to the TPPT work programme with priority 1.

2018-06 TPPT revised the draft and recommended it to SC for consultation.

2018-11 TPPT final review via e-forum (2018_eTPPT_Oct_01).

2019-03 SC approved the draft for consultation via e-decision (2019_eSC_May_09).

2019-07 First consultation.

2020-02 TPPT reviewed the responses to consultation comments and the draft and recommended it to the SC for approval for second consultation.

2020-03 TPPT finalized the responses to consultation comments via e-forum (2020_eTPPT_Feb_01).

2020-04 SC approved the responses to comments and the draft for second consultation via e-decision (2020_eSC_May_14).

2020-07 Second consultation.

2020-11 TPPT meeting reviewed and recommended to the SC for approval for adoption by the CPM.

2021-03 CPM-15 adopted the phytosanitary treatment.

ISPM 28. Annex 35. *Cold treatment for* Bactrocera tryoni *on* Prunus avium*,* Prunus salicina *and* Prunus persica (2021). Rome, IPPC, FAO.

Publication history last updated: 2021-04

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).

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