



Food and Agriculture  
Organization of the  
United Nations



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

# PT 21: Vapour heat treatment for *Bactrocera melanotus* and *Bactrocera xanthodes* on *Carica papaya*

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## ISPM 28

### Phytosanitary treatments for regulated pests

#### PT 21: Vapour heat treatment for *Bactrocera melanotus* and *Bactrocera xanthodes* on *Carica papaya*

##### Scope of the treatment

This treatment comprises the treatment of fruit of *Carica papaya* in a high temperature forced air chamber to result in the mortality of eggs and larvae of *Bactrocera melanotus* and *Bactrocera xanthodes* (Pacific fruit fly) at the stated efficacy<sup>1</sup>.

##### Treatment description

<b>Name of treatment</b>	Vapour heat treatment for <i>Bactrocera melanotus</i> and <i>Bactrocera xanthodes</i> on <i>Carica papaya</i>
<b>Active ingredient</b>	N/A
<b>Treatment type</b>	Physical (vapour heat)
<b>Target pests</b>	<i>Bactrocera melanotus</i> (Coquillett) (Diptera: Tephritidae) and <i>Bactrocera xanthodes</i> (Broun) (Diptera: Tephritidae)
<b>Target regulated articles</b>	Fruit of <i>Carica papaya</i> L.

##### Treatment schedule

Exposure in a forced air chamber:

- at a minimum of 60% relative humidity
- with air temperature increasing over a minimum of 3.5 hours from room temperature to 48.5 °C or above
- with air temperature held at 48 °C or above for a minimum of 3.5 hours
- with all fruit within the chamber maintaining a core temperature of 47.5 °C or above for a minimum of 20 minutes.

Once the treatment is complete, the fruit may be cooled (e.g. by hydro-cooling) to a core temperature of 30 °C in a period of time of no less than 70 minutes.

There is 95% confidence that the treatment according to this schedule kills not less than 99.9914% of eggs and larvae of *B. melanotus* and *B. xanthodes*.

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<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.

## Other relevant information

In evaluating this treatment the Technical Panel on Phytosanitary Treatments (TPPT) considered the technical justification for including other pest tephritid fruit flies (*Anastrepha ludens* (Loew), *Anastrepha suspensa* (Loew), *Bactrocera cucurbitae* (Coquillett), *Bactrocera dorsalis* (Hendel), *Bactrocera facialis* (Coquillett), *Bactrocera kirki* (Froggatt), *Bactrocera passiflorae* (Froggatt), *Bactrocera psidii* (Froggatt), *Bactrocera tryoni* (Froggatt) and *Ceratitis capitata* (Wiedemann)) and other fruit crops (all fruit hosts of tephritid fruit flies) in the treatment description as originally submitted. The TPPT recommended, however, including only two pest tephritid fruit flies, *B. melanotus* and *B. xanthodes*, for only one fruit crop, *C. papaya*, based on Waddell *et al.* (1993).

The fruit crop used to develop the schedule was *C. papaya* Waimanalo Solo.

## References

The present annex 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>.

**Waddell, B.C., Clare, G.K., Maindonald, J.H. & Petry, R.J.** 1993. *Postharvest disinfestations of Bactrocera melanotus and B. xanthodes in the Cook Islands*. Report 3. Wellington, New Zealand Ministry of Agriculture and Fisheries – Regulatory Authority. 44 pp.

## Publication history

*This is not an official part of the standard*

2009 *High temperature forced air treatment for selected fruit fly species (Diptera: Tephritidae) on fruit* (2009-105) submitted.

2010-07 TPPT reviewed treatment and requested additional information.

2012-12 TPPT requested additional time for evaluation.

2013-07 TPPT changed the title to *High temperature forced air treatment for Bactrocera melanotus and B. xanthodes on Carica papaya* (2009-105) and recommended to SC for member consultation.

2013-09 TPPT approved treatment schedule (virtual meeting).

2014-02 SC e-decision for approval for member consultation.

2014-03 Secretariat applied changes suggested by forum and opened poll.

2014-03 SC approved draft treatment for member consultation via poll (2014\_eSC\_May\_02).

2015-02 Member consultation comments under review by TPPT.

2015-05 TPPT May virtual meeting.

2015-09 TPPT September meeting.

2015-10 SC approved draft treatment for adoption by CPM (2015\_eSC\_Nov\_07).

2016-04 CPM-11 adopted the phytosanitary treatment.

**ISPM 28. Annex 21.** *Vapour heat treatment for Bactrocera melanotus and Bactrocera xanthodes on Carica papaya*. Rome, IPPC, FAO.

Publication history last updated: 2016-04

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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).



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