



Food and Agriculture  
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United Nations



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

INTERNATIONAL STANDARD FOR PHYTOSANITARY MEASURES 28

PHYTOSANITARY TREATMENT

ISPM 28  
ANNEX 15

ENG

# PT 15: Vapour heat treatment for *Bactrocera cucurbitae* on *Cucumis melo* var. *reticulatus*

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

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## ISPM 28

### Phytosanitary treatments for regulated pests

#### PT 15: Vapour heat treatment for *Bactrocera cucurbitae* on *Cucumis melo* var. *reticulatus*

Adopted 2014; published 2016

##### Scope of the treatment

This treatment comprises the vapour heat treatment of *Cucumis melo* var. *reticulatus* (netted melon) fruit to result in the mortality of eggs and larvae of melon fly (*Bactrocera cucurbitae*) at the stated efficacy<sup>1</sup>.

##### Treatment description

<b>Name of treatment</b>	Vapour heat treatment for <i>Bactrocera cucurbitae</i> on <i>Cucumis melo</i> var. <i>reticulatus</i>
<b>Active ingredient</b>	N/A
<b>Treatment type</b>	Physical (vapour heat)
<b>Target pest</b>	<i>Bactrocera cucurbitae</i> (Coquillett) (Diptera: Tephritidae)
<b>Target regulated articles</b>	Fruit of netted melon ( <i>Cucumis melo</i> var. <i>reticulatus</i> ).

##### Treatment schedule

Exposure in a vapour heat chamber:

- at a minimum of 95% relative humidity
- to air temperature increasing from room temperature to more than 46 °C
- for between three to five hours, until fruit core temperature reaches 45 °C
- followed by 30 minutes at a minimum of 95% relative humidity in an air temperature of 46 °C and with fruit pulp temperature at a minimum of 45 °C.

Once the treatment is complete, the melons should be cooled at ambient air temperature to allow their core temperature to drop below 30 °C.

There is 95% confidence that the treatment according to this schedule kills not less than 99.9889% of eggs and larvae of *Bactrocera cucurbitae*.

The commodity temperature and relative humidity should be monitored continuously at <1 minute intervals during treatment and should not fall below the stated level.

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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. IPPC adopted treatments 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. 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 issues associated with temperature regimes and thermal conditioning, taking into account the work of Hallman and Mangan (1997).

This schedule was based on the work of Iwata *et al.* (1990) and developed using the “Earl’s Favourite” cultivar of *Cucumis melo* var. *reticulatus*.

The fruit may be damaged if the core temperature exceeds 47 °C.

### References

- Hallman, G.J. & Mangan, R.L.** 1997. Concerns with temperature quarantine treatment research. In G.L. Obenauf, ed. *Proceedings of the 1997 Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reduction*, San Diego, CA, USA, Nov. 3–5. pp. 79-1–79-4. Available at <http://www.mbao.org/mbrpro97.html> (accessed September 2010).
- Iwata, M., Sunagawa, K., Kume, K. & Ishikawa, A.** 1990. Efficacy of vapour heat treatment on netted melon infested with melon fly, *Dacus cucurbitae* Coquillett (Diptera: Tephritidae). *Research Bulletin of the Plant Protection Service, Japan*, 26: 45–49.

### Publication history

*This is not an official part of the standard*

2006 Treatment submitted to TPPT

2010-07 Draft revised

2010-11 SC added topic *Vapour heat treatment for Bactrocera cucurbitae on Cucumis melo* var. *reticulatus* (2006-110)

2011-05 Approved by SC e-decision to go for member consultation

2011-07 Member consultation

2011-12 TPPT response to comments to SC

2012-05 SC e-decision returned draft to TPPT

2012-12 TPPT reviewed draft

2013-02 Letter to submitter

2013-07 TPPT reviewed submitter response and recommended to the SC for CPM adoption

2013-10 SC e-decision approved draft for CPM adoption

2014-04 CPM-9 adopted Annex 15 to ISPM 28

2015-01 Secretariat corrected title (*Bactrocera* was misspelled)

**ISPM 28. Annex 15** *Vapour heat treatment for Bactrocera cucurbitae on Cucumis melo* var. *reticulatus* (2014). Rome, IPPC, FAO.

2015-07 IPPC Secretariat incorporated editorial amendments and reformatted standards following revoking of standards procedure from CPM-10 (2015).

2016-04 CPM-11 noted ink amendments in relation to "effective dose".

2016-04 IPPC Secretariat incorporated ink amendments from CPM-11 (2016).

Publication history last modified: 2016-09.

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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)

Viale delle Terme di Caracalla, 00153 Rome, Italy  
Tel: +39 06 5705 4812 - Fax: +39 06 5705 4819  
Email: [ippc@fao.org](mailto:ippc@fao.org) - Web: [www.ippc.int](http://www.ippc.int)