PT 31: Vapour heat treatment for *Bactrocera tryoni* on *Mangifera indica*
This phytosanitary treatment was adopted by the Twelfth Session of the Commission on Phytosanitary Measures in 2017. The annex is a prescriptive part of ISPM 28.

ISPM 28
Phytosanitary treatments for regulated pests

PT 31: Vapour heat treatment for Bactrocera tryoni on Mangifera indica

Adopted 2017; published 2017

Scope of the treatment
This treatment describes the vapour heat treatment of fruit of Mangifera indica to result in the mortality of eggs and larvae of Bactrocera tryoni at the stated efficacy.

Treatment description
Name of treatment Vapour heat treatment for Bactrocera tryoni on Mangifera indica
Active ingredient n/a
Treatment type Physical (vapour heat)
Target pest Bactrocera tryoni (Froggatt, 1897) (Diptera: Tephritidae)
Target regulated articles Fruit of Mangifera indica L.

Treatment schedule
Exposure in a vapour heat chamber:
- with air temperature increasing from room temperature to 48 °C or above
- with air temperature held at 48 °C or above at a minimum of 95% relative humidity for a minimum of 90 minutes to achieve fruit core temperature of 47 °C or above
- followed by 15 minutes at a minimum of 95% relative humidity in a minimum air temperature of 48 °C and with fruit core temperature maintained at a minimum of 47 °C (of the largest fruit).

Once the treatment is complete, fruit may be air-cooled or cooled by an ambient temperature water drench.

There is 95% confidence that the treatment according to this schedule kills not less than 99.9968% of eggs and larvae of Bactrocera tryoni.

Other relevant information
This schedule was based on the work of Corcoran (2002), Corcoran et al. (2000), Heather et al. (1991, 1994, 1997) and Queensland Department of Primary Industries (1999) and was developed using the cultivars “Kensington Pride” and “Keitt”, and using failure to pupariate as the measure of mortality.

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.
References

The present annex to the standard may refer 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/ispm.

Corcoran, R.J. 2002. Fruit fly (Diptera: Tephritidae) responses to quarantine heat treatment. The University of Queensland, Brisbane, Australia. (PhD thesis)


Queensland Department of Primary Industries. 1999. Verification trial against Queensland fruit fly, Bactrocera tryoni (Frogatt), in Keitt mangoes using vapour heat treatment. A Queensland Department of Primary Industries report to the Japanese Ministry of Agriculture, Forestry and Fisheries through the Commonwealth of Australia Department of Primary Industries and Energy.

Publication history
This is not an official part of the standard
2007-03 CPM-2 added topic Fruit fly treatments.
2010-07 TPPT reviewed the draft and requested additional information from Submitter.
2012-02 TPPT reviewed Submitter response and requested further information.
2013-07 TPPT reviewed Submitter response and requested further information.
2014-06 TPPT reviewed Submitter response and recommended draft to SC for member consultation.
2015-07 Member consultation.
2016-09 TPPT agreed that there were no differences for mango varieties, but that the differences in treatment effectiveness were given by weight and shape of the fruit, thus TPPT modified the treatment to include a requirement on the ramp-up time and recommended it to the SC for adoption.


Publication history last updated: 2017-04
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).