



[1] **Draft vapour heat treatment for *Bactrocera tryoni* on *Mangifera indica* (2010-107)**

[2]

Status box	
This is not an official part of the standard and it will be modified by the IPPC Secretariat after adoption.	
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Document category	Draft Annex XX to ISPM 28
Current document stage	To 2015-07 member consultation
Major stages	2007-03 CPM-2 (2007) added topic on Fruit fly treatments 2010 Vapour heat treatment for <i>Bactrocera tryoni</i> on <i>Mangifera indica</i> submitted in response to 2009-12 call for treatments 2010-07 TPPT request to submitter for additional information 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 treatment to SC for MC 2014-08 SC approved for member consultation via e-decision
Treatment Lead	Mr Guy HALLMAN (US)
Secretariat notes	2015-01 Edited

[3] **Scope of the treatment**

[4] This treatment comprises the vapour heat treatment of fruit of *Mangifera indica* to result in the mortality of eggs and larvae (all ages) of *Bactrocera tryoni* (Queensland fruit fly) at the stated efficacy¹.

[5] **Treatment description**

[6] **Name of treatment** Vapour heat treatment for *Bactrocera tryoni* on *Mangifera indica*

[7] **Active ingredient** N/A

[8] **Treatment type** Physical (vapour heat)

[9] **Target pest** *Bactrocera tryoni* (Froggatt) (Diptera: Tephritidae) (Queensland fruit fly)

[10] **Target regulated articles** Fruit of *Mangifera indica*

[11] **Treatment schedule**

[12] Exposure in a vapour heat chamber:

[13] at a minimum of 95% relative humidity

[14] with air temperature increasing from room temperature to 48 °C

[15] for at least two hours and until mean fruit core temperature reaches 47 °C

[16] followed by 15 minutes at a minimum of 95% relative humidity in an air temperature of 48 °C and with mean fruit pulp temperature at a minimum of 47 °C.

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

[18] The efficacy is effective dose (ED)_{99.998} at the 95% confidence level.

[19] **Other relevant information**

[20] 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).

[21] This schedule was based on the work of Corcoran (2002), Corcoran *et al.* (2000), Heather *et al.* (1991, 1994) and Queensland Department of Primary Industries (1999), and it was developed using the “Kensington Pride” and “Keitt” varieties of *M. indica*.

[22] **References**

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

[24] **Corcoran, R.J., Jordan, R.A., Peterson, P.M., Eelkema, M., Heslin, L.M. & Jen, E.V.** 2000. *Disinfestation of additional mango varieties for export to Japan*. Gordon, Australia, Horticultural Research & Development Corp.

[25] **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, 3–5 November, pp. 79-1–79-4. Fresno, CA, Methyl Bromide Alternatives Outreach. Available at <http://www.mbao.org/1997airc/079hallman.pdf> (accessed 03 February 2015).

[26] **Heather, N.W., Corcoran, R.L., Heard, T., Jacobi, K. & Coates, L.** 1991. *Disinfestation of mangoes against Queensland fruit fly by vapour heat*. A Queensland Department of Primary Industries report to the Japanese Ministry of Agriculture, Forestry and Fisheries through Commonwealth of Australia Department of Primary Industries and Energy.

[27] **Heather, N.W., & Hallman, G.J.** 2008. *Pest management and phytosanitary trade barriers*. Wallingford, UK, CAB International. 257 pp.

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- [28] **Heather, N. W., Jordan, R. & Corcoran, R.J.** 1994. *Verification trials for vapour heat disinfestation of mangoes infested with fruit flies*. A Queensland Department of Primary Industries report to the Japanese Ministry of Agriculture, Forestry and Fisheries through Commonwealth of Australia Department of Primary Industries and Energy.
- [29] **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 Commonwealth of Australia Department of Primary Industries and Energy.
- [30] **Footnote 1:** 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.