



ISPM 28
Annex [XX]

INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES

ISPM 28 PHYTOSANITARY TREATMENTS

PT [XX]: Cold treatment for *Ceratitis capitata* on *Citrus limon* (2007-206C) (201[X])

Status box	
<i>This is not an official part of the annex to the standard and it will be modified by the IPPC Secretariat after adoption.</i>	
Date of this document	2016-11-28
Document category	Draft annex to ISPM 28
Current document stage	To CPM for adoption
Major stages	<p>2007-09 Treatment submitted</p> <p>2007-12 TPPT meeting split <i>Cold treatment of Citrus limon for Ceratitis capitata</i> from 2007-TPPT-106 to create 2007-206C</p> <p>2008-04 CPM-3 added subject under the topic <i>Fruit fly treatments</i></p> <p>2008-09 SC approved for member consultation via e-decision</p> <p>2009-06 Sent for member consultation</p> <p>2010-07 TPPT meeting revised draft and recommended to SC for adoption</p> <p>2011-11 SC commented by e-decision</p> <p>2012-12 TPPT meeting finalized response to concern about chilling injury, revised draft and recommended to SC for adoption</p> <p>2013-06 SC did not reach consensus during the forum discussion and agreed to discuss draft at SC 2013-11</p> <p>2013-11 SC recommended to CPM-9 for adoption</p> <p>2014-04 Treatment received formal objection before CPM-9</p> <p>2015-11 SC assigned the status "pending"</p>

	2016-09 TPPT meeting (TPPT agreed that there are no fruit fly population differences in relation to cold treatment and no varietal/cultivar effects) 2016-09 TPPT recommended to SC for adoption 2016-11 SC recommended to CPM-12 for adoption via e-decision (2016_eSC_Nov_07)
Treatment Lead	2010-11 SC: Mr Antarjo DIKIN (ID) 2012-12 TPPT: Mr Yuejin WANG (CN) 2012-12 TPPT: Mr Mike ORMSBY (NZ) (Assistant Treatment Lead)
Notes	2008-09 TPPT e-mail discussion 2010-10 TPPT e-mail discussion 2011-08 Formatted in basic template 2013-05 Reformatted in new basic template 2013-11 Secretariat added new paragraph to the "other relevant information" and "reference" sections based on the SC discussion 2013-11 Secretariat sent for editing after SC 2013-11 2016-11 Edited

Scope of the treatment

- [1] This treatment describes the cold treatment of fruit of *Citrus limon*¹ to result in the mortality of eggs and larvae of *Ceratitidis capitata* at the stated efficacy².

Treatment description

Name of treatment	Cold treatment for <i>Ceratitidis capitata</i> on <i>Citrus limon</i>
Active ingredient	N/A
Treatment type	Physical (cold)
Target pest	<i>Ceratitidis capitata</i> (Wiedemann, 1824) (Diptera: Tephritidae)
Target regulated articles	Fruit of <i>Citrus limon</i>

Treatment schedule

Schedule 1: 2 °C or below for 16 continuous days

- [2] There is 95% confidence that the treatment according to this schedule kills not less than 99.9975% of eggs and larvae of *Ceratitidis capitata*.

Schedule 2: 3 °C or below for 18 continuous days

- [3] There is 95% confidence that the treatment according to this schedule kills not less than 99.9973% of eggs and larvae of *Ceratitidis capitata*.

¹ *Citrus* species and hybrids are named according to the nomenclature in Cottin, R. 2002. *Citrus of the world: A citrus directory*, version 2.0. France, SRA INRA-CIRAD.

² 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.

- [4] The fruit must reach the treatment temperature before treatment exposure time commences. The fruit temperature should be monitored and recorded, and the temperature should not exceed the stated level throughout the duration of the treatment.

Other relevant information

- [5] *C. limon* is considered to be a conditional host of *C. capitata*.
- [6] 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).
- [7] Schedules 1 and 2 were based on the work of De Lima *et al.* (2007) and were developed using the cultivar “Lisbon”, and using failure to pupariate as the measure of mortality.
- [8] The TPPT also considered issues associated with chilling injury in lemons (TPPT, 2012).

References

- [9] 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/ispms>.
- [10] **De Lima, C.P.F., Jessup, A.J., Cruickshank, L., Walsh, C.J. & Mansfield, E.R.** 2007. Cold disinfestation of citrus (*Citrus* spp.) for Mediterranean fruit fly (*Ceratitis capitata*) and Queensland fruit fly (*Bactrocera tryoni*) (Diptera: Tephritidae). *New Zealand Journal of Crop and Horticultural Science*, 35: 39–50.
- [11] **Hallman, G.J. & Mangan, R.L.** 1997. Concerns with temperature quarantine treatment research. In G.L. Obenauf, ed. *1997 Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reduction*. San Diego, CA, 3–5 November 1997, pp. 79-1–79-4.
- [12] **TPPT** (Technical Panel on Phytosanitary Treatments). 2012. TPPT response to SC’s concerns about chilling injury in lemons during in-transit cold disinfestation. Appendix 9, TPPT meeting report, December 2012, pp. 55–57.