



ISPM 28
Annex [X]

INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES

ISPM 28 PHYTOSANITARY TREATMENTS

PT [X]: Cold treatment for *Ceratitis capitata* on *Citrus sinensis* (2007-206A) (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 combined <i>Cold treatment of Citrus sinensis for Ceratitis capitata</i> (2007-TPPT-106) and 2007-TPPT-109 to create 2007-206A</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 (2011_SC_Nov_03)</p> <p>2012-12 TPPT meeting revised draft and recommended to SC for adoption</p> <p>2013-11 SC recommended to CPM-9 for adoption via e-decision (2013_eSC_Nov_01)</p> <p>2014-04 Treatment received formal objection before CPM-9</p> <p>2015-11 SC assigned the status "pending"</p> <p>2016-09 TPPT meeting (TPPT agreed that there are no fruit fly population</p>

	<p>differences in relation to cold treatment and no varietal/cultivar effects for <i>Citrus</i>, thus recommended merging draft annex to ISPM 28 2010-103 with 2007-206A; TPPT agreed that there are no fruit fly population differences in relation to cold treatment and no varietal/cultivar effects)</p> <p>2016-09 TPPT recommended to SC for adoption</p> <p>2016-11 SC recommended to CPM-12 for adoption via e-decision (2016_eSC_Nov_05)</p>
Treatment Lead	<p>2007-12 TPPT: Ms Alice BAXTER (ZA)</p> <p>2012-12 TPPT: Mr Eduardo WILLINK (AR)</p> <p>2014-04 TPPT: Mr Scott MYERS (US, Assistant Treatment Lead)</p>
Notes	<p>2008-09 TPPT e-mail discussion</p> <p>2010-10 TPPT e-mail discussion</p> <p>2011-08 Formatted in basic template</p> <p>2013-05 Reformatted in new basic template</p> <p>2013-09 Secretariat sent for editing before CPM-9</p> <p>2015-05 Pending research results</p> <p>2016-11 Edited</p>

[1] **Scope of the treatment**

[2] This treatment describes the cold treatment of fruit of *Citrus sinensis*¹ (orange) to result in the mortality of eggs and larvae of *Ceratitits capitata* at the stated efficacy².

[3] **Treatment description**

[4] **Name of treatment** Cold treatment for *Ceratitits capitata* on *Citrus sinensis*

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

[6] **Treatment type** Physical (cold)

[7] **Target pest** *Ceratitits capitata* (Wiedemann, 1824) (Diptera: Tephritidae)

[8] **Target regulated articles** Fruit of *Citrus sinensis*

[9] **Treatment schedule**

[10] **Schedule 1: 2 °C or below for 16 continuous days**

[11] There is 95% confidence that the treatment according to this schedule kills not less than 99.9937% of eggs and larvae of *Ceratitits capitata*.

[12] **Schedule 2: 2 °C or below for 18 continuous days**

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.

[13] There is 95% confidence that the treatment according to this schedule kills not less than 99.999% of eggs and larvae of *Ceratitis capitata*.

[14] **Schedule 3: 3 °C or below for 20 continuous days**

[15] There is 95% confidence that the treatment according to this schedule kills not less than 99.9989% of eggs and larvae of *Ceratitis capitata*.

[16] 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.

[17] **Other relevant information**

[18] 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).

[19] Schedule 1 was based on the work of Laborda *et al.* (1997) and Santaballa *et al.* (1995), using larval mortality.

[20] Schedules 2 and 3 were based on the work of De Lima *et al.* (2007), using failure to pupariate as the measure of mortality.

[21] **References**

[22] 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>.

[23] **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.

[24] **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.

[25] **Laborda, R., Cerdá, M., Santaballa, E. & Dalmau, A.** 1997. *Report of quarantine cold treatment to control Ceratitis capitata (Wied) to export Salustiana oranges to Japan*. Valencia, Spain, Universidad Politécnic de Valencia. pp 16.

[26] **Santaballa, E., Laborda, R. & Dalmau, A.** 1995. *Report of quarantine cold treatment to control Ceratitis capitata (Wied) to export oranges to Japan*. Valenica, Spain, Universidad Politécnic de Valencia. pp. 22

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