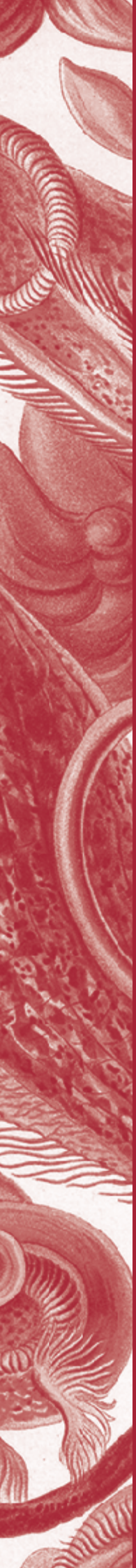
Food and Agriculture Organization of the United Nations

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

ISPM 28
ANNEX 27

ENG



INTERNATIONAL STANDARD FOR PHYTOSANITARY MEASURES 28

PHYTOSANITARY TREATMENT

PT 27: Cold treatment for *Ceratitis capitata* on *Citrus paradisi*

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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 27: Cold treatment for *Ceratitis capitata* on *Citrus paradisi*

Adopted 2017; published 2017

Scope of the treatment

This treatment describes the cold treatment of fruit of *Citrus paradisi*[1] to result in the mortality of eggs and larvae of *Ceratitis capitata* at the stated efficacy[2].

Treatment description

Name of treatment	Cold treatment for *Ceratitis capitata* on *Citrus paradisi*
Active ingredient	n/a
Treatment type	Physical (cold)
Target pest	*Ceratitis capitata* (Wiedemann, 1824) (Diptera: Tephritidae)
Target regulated articles	Fruit of *Citrus paradisi*

Treatment schedule

Schedule 1: 2 °C or below for 19 continuous days

There is 95% confidence that the treatment according to this schedule kills not less than 99.9917% of eggs and larvae of *Ceratitis capitata.*

Schedule 2: 3 °C or below for 23 continuous days

There is 95% confidence that the treatment according to this schedule kills not less than 99.9916% of eggs and larvae of *Ceratitis capitata.*

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.

[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.

Other relevant information

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).

Schedules 1 and 2 were based on the work of Anonymous (2007a, b), Gastaminza *et al.* (2007) and Willink *et al.* (2007), using larval mortality.

Schedule 1 was developed using the cultivars "Marsh Seedless", "Star Ruby", "Henninger's Ruby" and "Rouge la Toma".

Schedule 2 was developed using the cultivar "Henninger's Ruby".

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/ispms.

Anonymous. 2007a. Technical Panel on Phytosanitary Treatments – 110a. Quarantine cold treatment of grapefruit for medfly (*Ceratitis capitata* Wied). Document provided by the National Plant Protection Organization of Argentina.

Anonymous. 2007b. Technical Panel on Phytosanitary Treatments – 111a. Quarantine cold treatment of grapefruit for medfly (*Ceratitis capitata* Wied). Document provided by the National Plant Protection Organization of Argentina.

Gastaminza, G., Willink, E., Gramajo, M.C., Salvatore, A., Villagrán, M.E., Carrizo, B., Macián, A., Avila, R., Favre, P., Toledo, S., García Degano, M.F., Socias, M.G. & Oviedo, A. 2007. Tratamientos con frío para el control de *Ceratitis capitata* y *Anastrepha fraterculus* para la exportación de cítricos. In: Moscas de los frutos y su relevancia cuarentenaria en la citricultura del Noroeste Argentino: once años de investigaciones 1996–2007. E. Willink, G. Gastaminza, L. Augier & B. Stein, eds. Centro de Investigaciones Cuarentenarias, Sección Zoología Agrícola, Estación Experimental Agroindustrial Obispo Colombres, Las Talitas, Tucumán, Argentina. Available at http://www.eeaoc.org.ar (last accessed 1 September 2016).

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.

Willink, E., Gastaminza, G., Gramajo, M.C., Salvatore, A., Villagrán, M.E., Carrizo, B., Macián, A., Avila, R. & Favre, P. 2007. Estudios básicos para el desarrollo de tratamientos cuarentenarios con frío para *Ceratitis capitata* y *Anastrepha fraterculus* en cítricos de Argentina. In: Moscas de los frutos y su relevancia cuarentenaria en la citricultura del Noroeste Argentino: once años de investigaciones 1996–2007. E. Willink, G. Gastaminza, L. Augier & B. Stein, eds. Centro de Investigaciones Cuarentenarias, Sección Zoología Agrícola, Estación Experimental Agroindustrial Obispo Colombres, Las Talitas, Tucumán, Argentina. Available at http://www.eeaoc.org.ar (last accessed 1 September 2016).

Publication history

This is not an official part of the standard

2007-09 Treatment submitted.

2007-12 TPPT revised draft Cold treatment of *Citrus paradisi* for *Ceratitis capitata.*

2008-04 CPM-3 added subject under the topic *Fruit fly treatments*.

2008-09 SC approved for member consultation via e-decision.

2009-06 Member consultation.

2010-07 TPPT revised draft and recommended to SC for adoption.

2011-11 SC recommended to CPM-7 for adoption.

2012-03 Treatment received formal objections.

2012-09 TPPT drafted response to formal objections (no revision recommended with formal objections).

2012-12 TPPT reviewed draft (no changes made) and recommended to SC for adoption.

2013-06 SC recommended to CPM-9 for adoption.

2014-04 Treatment received formal objections before CPM-9.

2014-06 TPPT revised draft.

2014-09 TPPT responded to some formal objections.

2015-11 SC assigned the status “pending”.

2016-09 TPPT agreed that there are no fruit fly population differences in relation to cold treatment and no varietal or 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_08).

2017-04 CPM adopted the phytosanitary treatment.

ISPM 28. **Annex 27**. *Cold treatment for* Ceratitis capitata *on* Citrus paradisi (2017). Rome, IPPC, FAO.

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).

International Plant Protection Convention (IPPC)

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812
Email: ippc@fao.org | Web: www.ippc.int