



**ISPM 28**  
**Annex [XX]**

## **INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES**

### **ISPM 28 PHYTOSANITARY TREATMENTS**

#### **PT [XX]: Cold treatment for *Ceratitidis capitata* on *Citrus sinensis* (201[X])**

#### **Scope of the treatment**

This treatment comprises the cold treatment of fruit of *Citrus sinensis* (orange) to result in the mortality of eggs and larvae of *Ceratitidis capitata* (Mediterranean fruit fly) at the stated efficacy<sup>1</sup>.

#### **Treatment description**

<b>Name of treatment</b>	Cold treatment for <i>Ceratitidis capitata</i> on <i>Citrus sinensis</i>
<b>Active ingredient</b>	N/A
<b>Treatment type</b>	Physical (cold)
<b>Target pest</b>	<i>Ceratitidis capitata</i> (Diptera: Tephritidae) (Mediterranean fruit fly)
<b>Target regulated articles</b>	Fruit of <i>Citrus sinensis</i> (orange)

#### **Treatment schedule**

##### **Schedule 1: 2 °C or below for 18 continuous days**

For cultivar “Navel” the efficacy is effective dose (ED)<sub>99,9981</sub> at the 95% confidence level.

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<sup>1</sup> 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.

For cultivar “Valencia” the efficacy is ED<sub>99,9978</sub> at the 95% confidence level.

### **Schedule 2: 3 °C or below for 20 continuous days**

For cultivar “Navel” the efficacy is ED<sub>99,9980</sub> at the 95% confidence level.

For cultivar “Valencia” the efficacy is ED<sub>99,9977</sub> at the 95% confidence level.

### **Schedule 3: 2 °C or below for 21 continuous days**

For cultivars “Washington Navel”, “Salustiana”, “Valencia” and “Lue Gim Gong” the efficacy is ED<sub>99,9917</sub> at the 95% confidence level.

The fruit must reach the treatment temperature before treatment exposure time is started.. 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**

Pre-cooling of the commodity to treatment temperature may be required.

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).

Schedules 1 and 2 were based on the work of De Lima *et al.* (2007).

Schedule 3 was based on the work of Willink *et al.* (2007a, b).

### **References**

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- 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, USA, Nov. 3–5. 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.** 2007a. 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 y B. Stein, editores. Las Talitas, Tucumán Argentina. Available at <http://www.eeaoc.org.ar> (last accessed on 18 September 2013).
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**Publication history**

*This is not an official part of the standard*

2007-09 Treatment submitted in response to the Call for treatments

2007-12 TPPT meeting combined Cold treatment of *Citrus sinensis* for *Ceratitis capitata*. 2007-TPPT-106 and 2007-TPPT-109 to create 2007-206A

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

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

2009-06 Sent for member consultation

2010-07 TPPT meeting revised the text and recommended to SC for CPM-7 (2012) adoption

2011-11 SC commented by e-decision

2012-12 TPPT meeting revised the text and recommended to SC for CPM adoption

2012-06 SC recommended to CPM-9 for adoption

**ISPM 28. 2007: Annex [XX] Cold treatment for *Ceratitis capitata* on *Citrus sinensis* (201[X]), Rome, IPPC, FAO.**

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