

This phytosanitary treatment was adopted by the [XXth] Session of the Commission on Phytosanitary Measures in --- 201-.  
The annex is a prescriptive part of ISPM 28:2007.



**ISPM 28**  
**Annex [x]**

## **INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES**

### **ISPM 28 PHYTOSANITARY TREATMENTS**

#### **DRAFT PT [x]: Cold treatment for *Ceratitis capitata* on *Citrus paradisi***

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

This treatment applies to the cold treatment of fruit of *Citrus paradisi* (grapefruit) to result in the mortality of eggs and larvae of *Ceratitis capitata* (Mediterranean fruit fly) at the stated efficacy<sup>1</sup>.

##### **Treatment description**

<b>Name of treatment</b>	Cold treatment of fruit of <i>Citrus paradisi</i> for <i>Ceratitis capitata</i>
<b>Active ingredient</b>	N/A
<b>Treatment type</b>	Cold treatment
<b>Target pest</b>	<i>Ceratitis capitata</i> (Diptera: Tephritidae) (Mediterranean fruit fly)
<b>Target regulated articles</b>	Fruit of <i>Citrus paradisi</i> (grapefruit)

##### **Treatment schedule**

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

The efficacy is ED<sub>99,9917</sub> at the 95% confidence level (ED, effective dose).

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

The efficacy is ED<sub>99,9916</sub> at the 95% confidence level.

The fruit must reach the treatment temperature before treatment commences. The fruit temperature should be monitored and recorded, and temperatures should not exceed the stated level throughout the duration of the treatment.

<sup>1</sup> The scope of phytosanitary treatments does not include issues related to pesticide registration or other domestic requirements for approval of treatments. Treatments also do not provide information on specific effects on human health or food safety, which should be addressed using domestic procedures prior to approval of 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

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

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 & Mangan (1997).

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

Schedule 1 was developed using cultivars ‘Marsh Seedless’, ‘Star Ruby’, ‘Henninger’s Ruby’ and ‘Rouge la Toma’.

Schedule 2 was developed using cultivar ‘Henninger’s Ruby’.

## References

- 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 E. Willink, G. Gastaminza, L. Augier & B. Stein, eds. *Moscas de los frutos y su relevancia cuarentenaria en la citricultura del Noroeste Argentino: once años de investigaciones 1996-2007*. Chapter 4. Las Talitas, Tucumán, Argentina. (Available at [www.eeaoc.org.ar](http://www.eeaoc.org.ar). ISBN: 978-987-21283-4-0).
- 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. & Aceñolaza, M.** 2007. Estudios básicos para el desarrollo de tratamientos cuarentenarios con frío para *Ceratitis capitata* y *Anastrepha fraterculus* en cítricos de Argentina. In E. Willink, G. Gastaminza, L. Augier & B. Stein, eds. *Moscas de los frutos y su relevancia cuarentenaria en la citricultura del Noroeste Argentino: once años de investigaciones 1996-2007*. Chapter 3. Las Talitas, Tucumán, Argentina. (Available at [www.eeaoc.org.ar](http://www.eeaoc.org.ar). ISBN: 978-987-21283-4-0).

## Publication history

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