This phytosanitary treatment was adopted by the Fourth Session of the Commission on Phytosanitary Measures in 2009.

The annex is a prescriptive part of ISPM 28:2007.

INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES

ISPM 28 PHYTOSANITARY TREATMENTS

PT 6: Irradiation treatment for *Cydia pomonella* (2009)

Scope of the treatment

This treatment applies to the irradiation of fruits and vegetables at 200 Gy minimum absorbed dose to prevent the emergence of adults of *Cydia pomonella* at the stated efficacy. This treatment should be applied in accordance with the requirements outlined in ISPM 18:2003[1].

Treatment description

Name of treatment:	Irradiation treatment for *Cydia pomonella*
Active ingredient:	N/A
Treatment type:	Irradiation
Target pest:	*Cydia pomonella* (L.) (Lepidoptera: Tortricidae)
Target regulated articles:	All fruits and vegetables that are hosts of *Cydia pomonella*.

Treatment schedule

Minimum absorbed dose of 200 Gy to prevent the emergence of adults of *Cydia pomonella*.

Efficacy and confidence level of the treatment is $ED_{99.9978}$ at the 95% confidence level.

Treatment should be applied in accordance with the requirements of ISPM 18 (*Guidelines for the use of irradiation as a phytosanitary measure*).

This irradiation treatment should not be applied to fruit and vegetables stored in modified atmospheres.

[1] 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

Since irradiation may not result in outright mortality, inspectors may encounter live, but non-viable *Cydia pomonella* (larvae and/or pupae) during the inspection process. This does not imply a failure of the treatment.

The Technical Panel on Phytosanitary Treatments based its evaluation of this treatment on the research work undertaken by Mansour (2003) that determined the efficacy of irradiation as a treatment for this pest in *Malus domestica*.

Extrapolation of treatment efficacy to all fruits and vegetables was based on knowledge and experience that radiation dosimetry systems measure the actual radiation dose absorbed by the target pest independent of host commodity, and evidence from research studies on a variety of pests and commodities. These include studies on the following pests and hosts: *Anastrepha ludens* (*Citrus paradisi* and *Mangifera indica*), *A. suspensa* (*Averrhoa carambola*, *Citrus paradisi* and *Mangifera indica*), *Bactrocera tryoni* (*Citrus sinensis*, *Lycopersicon lycopersicum*, *Malus domestica*, *Mangifera indica*, *Persea americana* and *Prunus avium*), *Cydia pomonella* (*Malus domestica* and artificial diet) and *Grapholita molesta* (*Malus domestica* and artificial diet) (Bustos *et al.*, 2004; Gould & von Windeguth, 1991; Hallman, 2004, Hallman & Martinez, 2001; Jessup *et al.*, 1992; Mansour, 2003; von Windeguth, 1986; von Windeguth & Ismail, 1987). It is recognized, however, that treatment efficacy has not been tested for all potential fruit and vegetable hosts of the target pest. If evidence becomes available to show that the extrapolation of the treatment to cover all hosts of this pest is incorrect, then the treatment will be reviewed.

References

Bustos, M.E., Enkerlin, W., Reyes, J. & Toledo, J. 2004. Irradiation of mangoes as a postharvest quarantine treatment for fruit flies (Diptera: Tephritidae). *Journal of Economic Entomology*, 97: 286−292.

Gould, W.P. & von Windeguth, D.L. 1991. Gamma irradiation as a quarantine treatment for carambolas infested with Caribbean fruit flies. *Florida Entomologist*, 74: 297−300.

Hallman, G.J. 2004. Ionizing irradiation quarantine treatment against Oriental fruit moth (Lepidoptera: Tortricidae) in ambient and hypoxic atmospheres. *Journal of Economic Entomology*, 97: 824−827.

Hallman, G.J. & Martinez, L.R. 2001. Ionizing irradiation quarantine treatments against Mexican fruit fly (Diptera: Tephritidae) in citrus fruits. *Postharvest Biology and Technology*, 23: 71−77.

Jessup, A.J., Rigney, C.J., Millar, A., Sloggett, R.F. & Quinn, N.M. 1992. Gamma irradiation as a commodity treatment against the Queensland fruit fly in fresh fruit. *Proceedings of the Research Coordination Meeting on Use of Irradiation as a Quarantine Treatment of Food and Agricultural Commodities*, 1990: 13−42.

Mansour, M. 2003. Gamma irradiation as a quarantine treatment for apples infested by codling moth (Lepidoptera: Tortricidae). *Journal of Applied Entomology*, 127: 137−141.

von Windeguth, D.L. 1986. Gamma irradiation as a quarantine treatment for Caribbean fruit fly infested mangoes. *Proceedings of the Florida State Horticultural Society*, 99: 131−134.

von Windeguth, D.L. & Ismail, M.A. 1987. Gamma irradiation as a quarantine treatment for Florida grapefruit infested with Caribbean fruit fly, *Anastrepha suspensa* (Loew). *Proceedings of the Florida State Horticultural Society*, 100: 5−7.

Publication history

This is not an official part of the standard

2006-04 CPM-1 added topic *Irradiation treatment for* Cydia pomonella (2006-123)

2006-12 TPPT developed draft text

2007-05 SC approved draft text for MC

2007-10 Sent for MC under fast-track process

2008-07 TPPT revised draft text

2008-12 SC revised draft text for adoption e-decision

2009-03 CPM-4 adopted Annex 6 to ISPM 28:2007

ISPM 28. 2007: **Annex 6** *Irradiation treatment for* Cydia pomonella (2009). Rome, IPPC, FAO.

Publication notes: Last modified August 2011