

Data Sheets on Quarantine Pests

*Cydia inopinata***IDENTITY****Name:** *Cydia inopinata* (Heinrich)**Synonyms:** *Grapholita inopinata* (Heinrich)
Laspeyresia prunifoliae (Kozhanchikov)
Grapholita cerasana (Kozhanchikov)**Taxonomic position:** Insecta: Lepidoptera: Tortricidae**Common names:** Manchurian fruit moth (Gibanov & Sanin, 1971)**Bayer computer code:** CYDIIN**EPPQ A1 list:** No. 193**EU Annex designation:** II/A1 - as *Grapholita inopinata***HOSTS**

Apples are the main host, but the insect also attacks quinces, pears and various other Pomaceae. *Malus pallasiana* is the native host in Russia (Kolmakova, 1965). According to Takizawa (1936), *C. inopinata* has been reared artificially on some Far Eastern *Prunus* spp.

GEOGRAPHICAL DISTRIBUTION**EPPQ region:** Russia (Far East; Primor'ye region, and as far west as Lake Baikal; Tikhonov, 1962).**Asia:** China (including, in 1936, Manchuria), Russia (Far East).**EU:** Absent.**BIOLOGY**

C. inopinata overwinters as larvae in cocoons under bark, in the soil or among dead leaves and always under the snow (Kolmakova, 1958; 1965). It also overwinters on fruit crates (Gibanov & Sanin, 1971). The larvae pupate in the same cocoons during the following spring and the moths start to emerge about a month later. The period of emergence, flight and egg-laying is protracted, lasting about 2 months in the area east of Lake Baikal. There is only one generation per year in the Primor'ye region and area east of Lake Baikal. Eggs are usually laid on the underside of leaves and, less often and usually later in the season, on the fruit. Smooth-leaved cultivars are preferred to those with dense pubescence. The potential number of eggs per female is 145. The larvae hatch in 6-7 days and tunnel into the fruit, feeding first under the skin and later on the seeds. Normally there is only one larva in each fruit but up to five have been recorded. Development in the fruit takes 6-8 weeks and larvae leave the fruit in late August and September. Further south there are two generations, flying in May-June and August-September in Manchuria (Takizawa, 1936) and slightly earlier in Guangdong (Kondo & Miyahara, 1930). Larval development is

correspondingly faster, averaging 16 days for the first generation and 27 days for the second.

DETECTION AND IDENTIFICATION

Symptoms

In apples, the larvae eat out a flat chamber under the skin before penetrating to the core (Kolmakova, 1965). This is illustrated by Wu & Huang (1955).

Morphology

Eggs

About 0.7 mm in diameter, white darkening to pinkish-brown. Usually laid on leaves.

Larva

Pink with red spots (often missing in preserved specimens). Larvae may appear banded because the intersegmental areas are pale. Three lateral setae on prespiracular plate on prothorax. Anal comb present. Seta SD2 on the abdominal segments distinctly isolated from a short SD1 and little longer than the surrounding cuticular spines.

Pupa

With a broad band of numerous small spines on the first abdominal segment.

Adult

Wingspan about 10 mm. Colour variously described as dark-brown with metallic lead-blue lines on the forewing (Danilevskii, 1958; Heinrich, 1928) or dark-grey with a purple lustre (Takizawa, 1936). The general appearance is similar to *Cydia roseticolana* but the genitalia are quite different (Heinrich, 1928; Wu & Huang, 1955; Danilevskii, 1958). Venation is illustrated by Takizawa (1936) and Wu & Huang (1955). The adult is shown by Wu & Huang (1955).

MEANS OF MOVEMENT AND DISPERSAL

C. inopinata is dispersed locally by adult flight. In international trade, it might be carried as larvae in fresh fruit or with planting material carrying fruits. The species has not yet been intercepted in the EPPO region (but trade from infested areas has been minimal).

PEST SIGNIFICANCE

Economic impact

C. inopinata is rather similar as a pest to the pan-European *C. pomonella*. Both species occur in the Far East of Russia, where *C. pomonella* damages a larger proportion of apples than does *C. inopinata*, though the latter remains a significant pest, damaging up to 11% of the apple crop (Gibanov & Sanin, 1971). Damage from *C. inopinata* can reach 100% on apples in the area east of Lake Baikal (Kolmakova, 1958; 1965). Little information is available on the situation in China.

Control

Specific information on control is not readily available in the literature. It is presumed that measures taken against *C. pomonella* would be effective.

In Manchuria (China), *Phaedroctonus* spp. and *Mesochorus* spp. (Ichneumonidae) were reared as larval parasites (Takizawa, 1936). In Russia (Lake Baikal area), eggs were heavily parasitized by *Trichogramma embryophagum*. However, there is no information on biological control measures as such.

Phytosanitary risk

C. inopinata was recently added to the EPPO A1 list of quarantine pests, but is not listed as a quarantine pest by any other regional plant protection organization. Originally, EPPO recognized that *C. inopinata* presented a similar but lesser risk than *Carposina niponensis* (EPPO/CABI, 1996) and concluded that the measures taken against the latter adequately covered the risk presented by the former. The addition to the EPPO list harmonizes it with EU Directive Annex II/A1.

PHYTOSANITARY MEASURES

A sufficient requirement would be that fruits of *Cydonia*, *Malus* and *Pyrus* from countries where *C. inopinata* occurs should have been found free from the pest. Planting material of these genera should preferably not carry fruits.

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