

Data Sheets on Quarantine Pests

*Rhagoletis fausta***IDENTITY**

Name: *Rhagoletis fausta* (Osten Sacken)

Synonyms: *Rhagoletis intrudens* Aldrich
Trypeta (Acidia) fausta Osten Sacken

Taxonomic position: Insecta: Diptera: Tephritidae

Common names: Black cherry fruit fly (English)
Trypète noir des cerises (French)

Bayer computer code: RHAGFA

EPPO A1 list: No. 241

EU Annex designation: I/A1

HOSTS

The principal cultivated hosts of *R. fausta* are cherries (*Prunus avium* and *P. cerasus*), and would be so in the EPPO region. *R. fausta* is also commonly found on *P. pensylvanica* (Bush, 1966).

GEOGRAPHICAL DISTRIBUTION

EPPO region: Absent.

North America: Two main areas, one in the west composed of Canada (Alberta, British Columbia) and USA (California, Idaho, Oregon, Washington), the other in the east of Canada (Manitoba, Ontario, New Brunswick, Quebec) and USA (Massachusetts, Maine, Michigan, Minnesota, Montana, New Hampshire, New York, Ohio, Pennsylvania, West Virginia).

EU: Absent.

Distribution map: See CIE (1963, No. 160), Foote *et al.* (1993).

BIOLOGY

Eggs are laid below the skin of the host fruit and hatch after 3-7 days. The larvae usually feed for 2-5 weeks. Pupariation is in the soil under the host plant and this is the normal overwintering stage. Adults may live for up to 40 days under field conditions (Christenson & Foote, 1960).

DETECTION AND IDENTIFICATION**Symptoms**

Attacked fruit will be pitted by oviposition punctures, around which some discoloration usually occurs.

Morphology

Larva

See Phillips (1946).

Adult

Head: Three pairs of frontal setae; genae usually less than one-quarter eye height; ocellar setae long, usually similar in length and strength to orbital setae; two pairs of orbital setae; 1st flagellomere usually with a small antero-apical point.

Thorax: Scutum predominantly black, with two or four longitudinal bars of tomentum that form grey stripes; scutum with dorsocentral setae based close to a line between the anterior supra-alar setae; scutum with dorsocentral setae and presutural supra-alar setae; anatergite without longpale hairs, at most with a fine pubescence; scutellum flat and with four marginal setae (one basal and an apical pair), marked at extreme sides only, base yellow or only very narrowly black.

Wing: Vein Sc abruptly bent forward at nearly 90°, weakened beyond this bend and ending at subcostal break; vein R1 with dorsal setulae; vein R4+5 usually without dorsal setulae, except sometimes at the base of the vein (except in some aberrant individuals); apex of vein M meeting C with a distinct angle; cup extension short, never more than one-fifth as long as vein A1+Cu2, and vein CuA2 straight along anterior edge of cup extension; cell cup always considerably broader than half depth of cell bm, and usually about as deep as cell bm; discal and preapical crossbands joined along veins M and CuA1, but leaving a hyaline spot in the apical quarter of cell dm; cells r1 and r2+3 without any markings between the discal and preapical crossbands; with two parallel apical crossbands joined to the anterior half of the preapical crossband. Length 3-4 mm.

Abdomen: Predominantly black.

Detection and inspection methods

Traps already in use within the EPPO region for *R. cerasi* should be suitable for monitoring any invasion of North American *Rhagoletis* spp. They capture both sexes and are based on visual, or visual plus odour, attraction. They are coated in sticky material. Traps are usually either flat-surfaced and coloured fluorescent yellow to elicit a supernormal foliage response, or spherical and dark-coloured to represent a fruit; traps which combine both foliage and fruit attraction can also be used. The odour comes from protein hydrolysate or other substances emitting ammonia, such as ammonium acetate. See Boller & Prokopy (1976) and Economopoulos (1989) for a discussion of these traps.

MEANS OF MOVEMENT AND DISPERSAL

Adult flight and the transport of infected fruits are the major means of movement and dispersal to previously uninfected areas. In general, *Rhagoletis* spp. are not known to fly more than a short distance. In international trade, the major means of dispersal to previously uninfested areas is the transport of fruits containing live larvae. There is also a risk from the transport of puparia in soil or packaging with plants which have already fruited.

PEST SIGNIFICANCE

Economic impact

R. fausta is an important pest of cherries in North America.

Control

Control procedures already established in the EPPO region for *R. cerasi* are similar to those used against the North American pest species and could therefore be implemented against

any outbreak of those species within the EPPO region. Upon detection, fallen and infected fruit must be removed and destroyed. If possible, wild and abandoned host trees should also be destroyed. Boller & Prokopy (1976) note that systemic organophosphates, such as dimethoate, are highly effective against most species, killing eggs, larvae and adults. Recently, Belanger *et al.* (1985) discussed the use of pyrethroids, but these were only of use when pest activity was low. More environmentally acceptable techniques have been tried; namely bait sprays (insecticide plus ammonia source) which can be applied as a spot treatment; soil application of insecticide to destroy pupae; and juvenile hormone analogues which can be applied to the soil (Boller & Prokopy, 1976).

Phytosanitary risk

The EPPO A1 quarantine list category "non-European Trypetidae" (OEPP/EPPO, 1983) includes *R. fausta*. EPPO's original documentation of this category concerned only *Rhagoletis* spp. in North America; the tropical tephritids were added to the data sheet only at a late stage. Thus, the temperate fruit flies are the obvious direct quarantine pests for the EPPO region. There is a European cherry fruit fly (*Rhagoletis cerasi*), but introduction of *R. fausta* (and of the other two North American tephritid pests of cherries *R. cingulata* and *R. indifferens*) would present a significant danger. *R. fausta* is also a quarantine pest for OIRSA.

PHYTOSANITARY MEASURES

Consignments of cherries from countries where *R. fausta* occurs should be inspected for symptoms of infestation and those suspected should be cut open in order to look for larvae. EPPO recommends that such fruits should come from an area where *R. fausta* does not occur, or from a place of production found free from the pest by regular inspection for 3 months before harvest. Fruits may also be treated, but specific treatment schedules have mostly not been developed for *Rhagoletis* spp., since there is no need for them in North America. Schedules developed for other fruit flies on cherries will probably be adequate (EPPO/CABI, 1996).

Plants of host species transported with roots from countries where *R. fausta* occurs should be free from soil, or the soil should be treated against puparia, and should not carry fruits. Such plants may indeed be prohibited importation.

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