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Data Sheets on Quarantine Pests

Trirhithromyia cyanescens

IDENTITY

Name: *Trirhithromyia cyanescens* (Bezzi)
Synonyms: *Pardalaspis cyanescens* Bezzi
Perilampsis bourbonica Munro
Taxonomic position: Insecta: Diptera: Tephritidae
Common names: Tomato fruit fly (English)
Notes on taxonomy and nomenclature: *T. cyanescens* was previously classified as a *Ceratitis* and many of the generalizations made about *Ceratitis spp*., for example in the data sheet on *C. rosa* (EPPO/CABI, 1996), also apply to it.
Bayer computer code: CERTCY
EU Annex designation: I/A1

HOSTS

T. cyanescens is a pest of tomatoes (*Lycopersicon esculentum*) (Orian & Moutia, 1960), which may also attack other Solanaceae, including *Capsicum* and aubergines (*Solanum melongena*) (Étienne, 1972; Hancock, 1984).

GEOGRAPHICAL DISTRIBUTION

EPPO region: Absent.
Africa: Comoros, Madagascar, Mauritius (since 1958), Réunion (since 1951), Seychelles.
EU: Absent.
Distribution map: See CIE (1962, No. 140).

BIOLOGY

Adult flies mate 2-4 days after emergence. After 4-6 days the females lay 40 to over 100 eggs into tomato fruits of all sizes. They make 2-12 punctures per fruit and lay 2-15 eggs in most punctures. Larvae emerge after 3 days (at 29°C). Two to 10 larvae develop in each fruit and after 10-15 days the larvae leave the fruit (now dark and flaccid) to pupariate in the soil at a depth of 5-8 cm. Pupariation lasts about 10 days. Details from Orian & Moutia (1960).

DETECTION AND IDENTIFICATION

Symptoms

Attacked fruit usually shows signs of oviposition punctures.

Morphology

Larva

The larva has not been described.

Adult

The adult is similar to a very dark-coloured *Ceratitis* sp. in general appearance (see, for example, data sheet on *Ceratitis rosa*; EPPO/CABI, 1996). Like *Ceratitis* spp., *T. cyanescens* differs from other pest species of Tephritidae by having the basal cells of the wing (c, br, bm, cup) with spot and fleck-shaped marks, giving a reticulate appearance; the cell cup extension at least one-third as long as vein A1+CuA2, and vein CuA2 curved forwards along the anterior edge of the cup extension. *T. cyanescens* differs from *Ceratitis* spp. in having the whole of the posterior half of the scutellum black, and in lacking a strongly sinuate edge to the black area. The wing pattern of *T. cyanescens* is also characteristic (see illustration in White & Elson-Harris, 1992).

Detection and inspection methods

T. cyanescens can be monitored by traps baited with male lures. As in many *Ceratitis spp.*, males are attracted to terpinyl acetate but not to cue lure. Unlike the main pest species *C. capitata* and *C. rosa*, *T. cyanescens* is not attracted to trimedlure. The responses to baits of 16 *Ceratitis* species were tabulated by Hancock (1987). A review of the biological aspects of male lures is presented by Cunningham (1989a) and the use of lures is described more fully by Drew (1982).

MEANS OF MOVEMENT AND DISPERSAL

Adult flight and the transport of infested fruits are the major means of movement and dispersal to previously uninfested areas.

PEST SIGNIFICANCE

Economic impact

T. cyanescens is a pest of tomatoes in Mauritius.

Control

The following general recommendations on control of *Ceratitis* spp. probably also apply to *T. cyanescens.* When detected, it is important to gather all fallen and infected host fruits, and destroy them. Traps containing male lures should be used to monitor population size and spread continuously. Insecticidal protection is possible by using a cover spray or a bait spray. Malathion is the usual choice of insecticide for fruit fly control and this is usually combined with protein hydrolysate to form a bait spray (Roessler, 1989); practical details are given by Bateman (1982). Bait sprays work on the principle that both male and female tephritids are strongly attracted to a protein source from which ammonia emanates. Bait sprays have the advantage over cover sprays that they can be applied as a spot treatment so that the flies are attracted to the insecticide and there is minimal impact on natural enemies.

Phytosanitary risk

T. cyanescens is not considered as a quarantine pest by any regional plant protection organization. It used to appear in the broad category "non-European Trypetidae" of the EPPO A1 list (OEPP/EPPO, 1983) but it was recently decided that it did not merit individual mention. While *T. cyanescens* could possibly become established in field-grown tomatoes in the south of the EPPO region, its large size and requirement for soil in which to pupariate rule out any likelihood of establishment in glasshouse tomatoes in more northerly areas. In EPPO's recent review, this species was not rated important for the region.

PHYTOSANITARY MEASURES

T. cyanescens does not seem important enough for the EPPO region to justify specific phytosanitary measures. However, measures similar to those for *C. rosa* (EPPO/CABI, 1996), with tomato fruits as the targeted commodity, would no doubt be suitable to exclude it.

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