

Data Sheets on Quarantine Pests

Ceratitis cosyra

IDENTITY

Name: *Ceratitis cosyra* (Walker)

Synonyms: *Pardalaspis cosyra* (Walker)
Pardalaspis parinari Hering
Trypeta cosyra Walker

Taxonomic position: Insecta: Diptera: Tephritidae

Common names: Mango fruit fly, marula fruit fly, marula fly (English)

Notes on taxonomy and nomenclature: *C. cosyra* belongs to subgenus *Ceratalaspis*.

Bayer computer code: CERTCO

EU Annex designation: I/A1

HOSTS

C. cosyra is a pest of mangoes (*Mangifera indica*), but also recorded from a few other fruit crops including avocados (*Persea americana*), Citrus and peaches (*Prunus persica*).

GEOGRAPHICAL DISTRIBUTION

EPPO region: Absent.

Africa: Cameroon, Comoros, Côte d'Ivoire, Kenya, Madagascar, Malawi, Mozambique, Seychelles, South Africa, Sudan, Tanzania, Togo, Zaire, Zambia, Zimbabwe.

EU: Absent.

BIOLOGY

Detailed biological data on *C. cosyra* is lacking, but this species presumably resembles *C. capitata* (EPPO/CABI, 1996a) in biology and survival capacity (possibly, in view of its essentially tropical distribution, it is even less tolerant of winter cold).

DETECTION AND IDENTIFICATION

Symptoms

Attacked fruit usually shows signs of oviposition punctures.

Morphology

C. rosa, like other *Ceratitis* spp., has banded wings, and a swollen scutellum which is marked yellow and black. The pattern of grey flecks in the basal wing cells distinguishes *Ceratitis* spp. from most other genera of tephritids.

Larva

The larva of *C. cosyra* has not been described.

Adult

Colour: Wing bands and general body colour yellow; scutum predominantly yellow or pale-brown, with a pattern of brown to black spots; scutellum black and yellow, with yellow lines or areas meeting margin, such that each apical scutellar seta is based in or adjacent to a yellow stripe; fore-femur yellow on both sides and in both sexes; fore-femur of male not patterned with black and white; costal band and discal crossbands joined.

Head: Anterior pair of orbital setae not modified in any way.

Thorax: Anepisternum with one seta; male mid-tibia without stout setae arranged in such a way as to give a feathered appearance. Wing length 4-6 mm.

Abdomen: Aculeus shorter than that of some other *Ceratalaspis* spp., 1.3-1.6 mm.

The males of subgenus *Ceratalaspis* lack the spatulate head appendages of subgenus *Ceratitis* and the feathered mid-tibia of typical *Pterandrus* spp. Any male with yellow wing bands and resembling *C. capitata* in appearance, but lacking the special head appendages and feathered mid-tibia, could be this species and should be referred to a specialist.

Detection and inspection methods

C. cosyra 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*, *C. cosyra* 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 (1989) 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**

C. cosyra is recorded from a limited range of plants, but it is the major fruit fly pest of mangoes in Kenya and Zambia (Malio, 1979; Javaid, 1986).

Control

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

C. cosyra 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, because as a pest of mangoes it is of little direct importance to crops of the EPPO region. *C. cosyra* is of quarantine significance for JUNAC and OIRSA.

PHYTOSANITARY MEASURES

C. cosyra does not seem important enough for the EPPO region to justify specific phytosanitary measures. However, measures similar to those for *C. rosa* (EPPO/CABI, 1996b) would no doubt be suitable for excluding it.

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