Ceratitis capitata (Wiedemann, 1824) - Mediterranean fruit fly (Diptera, Tephritidae). Chapter 14: Factsheets for 80 representative alien species

Alain Roques

14.28 – *Ceratitis capitata* (Wiedemann, 1824) - Mediterranean fruit fly (Diptera, Tephritidae)

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Description and biological cycle: Small fly, 4–5 mm long. Adults with yellowish body, brown abdomen and legs, and yellow-banded wings (*Photo*). Larva 6–8 mm long at maturity, elongate, cream coloured, and of cylindrical maggot shape. Phytophagous on a wide range of temperate and subtropical fruits. Adult flight range up to 20 km but winds can carry flying adults over longer distances; intercontinental dispersal (eggs, larvae) via infested fruits transported by humans. Before reaching sexual maturation, adults feed 6–8 d on fruit juices. Females lay up to 22 eggs per day and 300–800 eggs during lifetime, under the skin of a fruit just beginning to ripen. Under tropical conditions, overall life cycle is completed in 21–30 d. Adults may survive for up to six months.

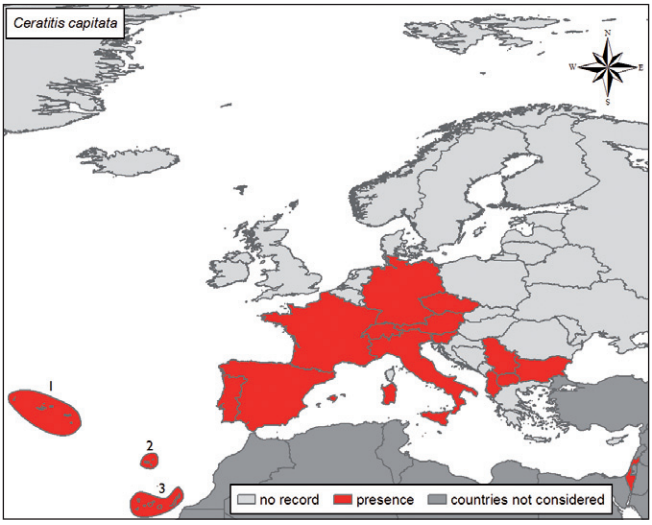
Native habitat (EUNIS code): G- Woodland and forest habitats and other wooded land.

Habitat occupied in invaded range (EUNIS code): I- Regularly or recently cultivated agricultural, horticultural and domestic habitats; I1- Arable land and market gardens.

Native range: Tropical Eastern Africa.

Introduced range: Observed in Europe since 1873 in Italy. Present all over southern Europe (*Map*); regularly observed but not established in other parts of Europe; global warming may allow populations to establish at higher latitudes than at present. It has also been introduced in Africa, Middle East, Central and South America, the Caribbean, Hawaii, Australia. Eradicated in USA except Hawaii.

Credit: Michel Martinez/ INRA



Pathways: Imported with fruit trade but also with passengers transporting infested fruits during trips.

Impact and management: Probably the most important fruit fly pest, inducing large damage in fruit crops, especially citrus fruits and peach. Fly damage results from both oviposition in fruit, feeding by the larvae, and decomposition of plant tissue by invading secondary microorganisms (bacteria, fungi) that cause fruit rot. Their presence often requires host crops to undergo quarantine treatments, other disinfestation procedures or certification of fly-free areas. The costs of such activities and phytosanitary regulatory compliance can be significant and definitely affect global trade. To ensure early detection, traps baited with chemical attractants (especially trimedlure) can be used. Larvae can be killed by soaking, freezing, cooking or pureeing infested fruits. Fruits can be bagged to prevent egg laying. Field sanitation needs to destroy all unmarketable and infested fruits; harvesting fruit weekly also reduces food sources by keeping the quantity of ripe fruit on the trees to a minimum. Chemical sprays are not completely effective. It is better to use foliage baits combining a source of protein with an insecticide to attract both males and females. Biological control involves use of sterile insects and release of parasitoids.

Selected references

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