

Ceratitis capitata



Taxon	Family / Order / Class / Phylum
<i>Ceratitis capitata</i> (Wiedemann, 1824)	Tephritidae / Diptera / Insecta / Arthropoda

COMMON NAMES (English only)

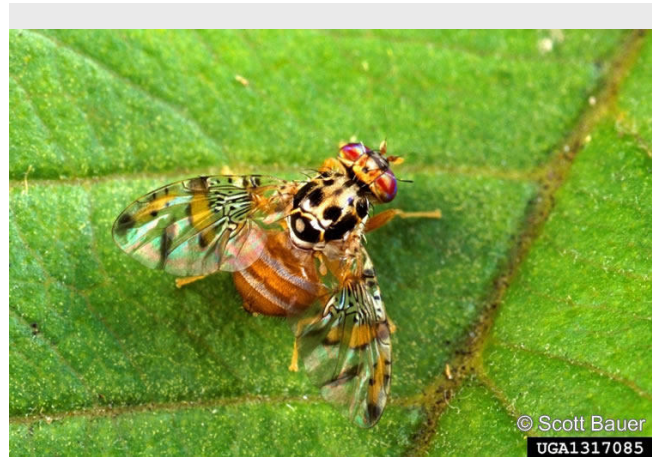
Mediterranean fruit fly
Medfly

SYNONYMS

Ceratitis citripeda Efflatoun, 1924
Ceratitis citriperda MacLeay, 1829
Ceratitis hispanica De Brême 1842
Paradalspis asparagi Bezzi 1924
Tephritis capitata Wiedemann 1824
Trypeta capitata Wiedemann 1824

SHORT DESCRIPTION

Small fly, 4- 5 mm long. The adults have a yellowish body with brown abdomen and legs and have yellow bands on the wings. The larva, 6- 8 mm long at maturity, is typically elongated, cream coloured, and has a cylindrical maggot shape. Development is phytophagous in a wide range of temperate and subtropical fruits.



Adult of Mediterranean fruit fly, *Ceratitis capitata*

Photo: Scott Bauer; www.invasive.org

BIOLOGY/ECOLOGY

Dispersal mechanisms

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.

Reproduction

Before mating and oviposition, emerging adults must reach sexual maturation, which occurs after 6-8 days during which they mainly feed on fruit juices. Females may lay as many as 22 eggs per day and as many as 800 eggs during her lifetime (usually about 300). Eggs are laid under the skin of a fruit that is just beginning to ripen. Under tropical conditions, overall life cycle is completed in 21-30 days. When host fruits are continuously available and weather conditions favourable, successive generations can be continuous.

Known predators/herbivores

Numerous Hymenopteran parasitoids mostly of families Braconidae (*Opius humilis*, *Diachasma tryoni*, *Biosteres* spp.) and Eucolidae; ants (Formicidae) and carabid beetles (Carabidae) are predators of pupae.

Resistant stages (seeds, spores etc.)

Adults may survive for up to six months or more if food conditions are favourable and temperatures are cool.

HABITAT

Native (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

Habitat requirements

Must avoid negative winter temperatures but also affected by dryness

DISTRIBUTION

Native Range

Tropical East Africa

Known Introduced Range

Southern Europe; regularly observed but not established in Western, Northern and Central Europe; Africa, Middle East, Central and South America, the Caribbean, Hawaii, Australia; eradicated in USA except Hawaii.




Trend

Continuously introduced in European countries with infested fruits; global warming may allow populations to establish at higher latitudes than at present

MAP (European distribution)



Legend

	Known in country		Known in CGRS square		Known in sea
---	------------------	---	----------------------	--	--------------

INTRODUCTION PATHWAY

Passive transport with fruit trade but also with passengers transporting infested fruits during trips

IMPACT

Ecosystem Impact

Unknown

Health and Social Impact

Economic Impact

This highly phytopagous insect is probably the most important fruit fly pest, inducing large damage in fruit crops, especially agrumes 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 the fruit to rot. Their presence often requires host crops to undergo quarantine treatments, other disinfection procedures or certification of fly-free areas. The costs of such activities and phytosanitary regulatory compliance can be significant and definitely affect global trade.

MANAGEMENT

Prevention

To ensure early detection, traps baited with chemical attractants (especially Trimedlure) can be used.

Mechanical

Larvae can be killed by soaking, freezing, cooking or pureeing infested fruits. Fruits can be bagged to prevent egg laying. Field sanitation directed towards the destruction of 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

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

Use of sterile insects; release of parasitoids

REFERENCES

- Copeland RS, Wharton RA, Luke Q, De Meyer M (2002) Indigenous Hosts of *Ceratitidis capitata* (Diptera:Tephritidae) in Kenya. *Ann Ent Soc Am* 95:672-694
- Liebold AM, Work TT, McCullough DG, Cavey JF (2006) Airline Baggage as a Pathway for Alien Insect Species Invading the United States. *Am Ent* 52:48-56
- Malacrida AR, Marinoni F, Torti C, et al (1998) Genetic aspects of the worldwide colonization process of *Ceratitidis capitata*. *Heredity* 89:501-507

OTHER REFERENCES

Author: Alain Roques

Date Last Modified: November 1st, 2006