

Aphis gossypii



Taxon	Family / Order / Class / Phylum
<i>Aphis gossypii</i> Glover	Aphididae / Hemiptera / Insecta / Arthropoda

COMMON NAMES (English only)

Cotton aphid
Melon aphid
Melon and cotton aphid

SYNONYMS

Aphis bauhiniae Theobald, 1918
Aphis citri Ashmead of Essig, 1909
Aphis citrulli Ashmead, 1882
Aphis cucumeris Forbes, 1883
Aphis cucurbiti Buckton, 1879
Aphis minuta Wilson, 1911
Aphis monardae Oestlund, 1887
Cerosypha gossypii Glover, 1877
Doralis frangulae Kaltenbach
Toxoptera aurantii var. *limonii* del Guercio, 1917

SHORT DESCRIPTION

Small aphid, about 2mm long, phloem-feeding with two virginiparous forms. Winged and wingless, highly variable in colour from yellowish green to partly black; immature stages (nymphs) pale yellow to pale green. It is a highly polyphagous species, major pest of cultivated plants in the families Cucurbitaceae, Rutaceae and Malvaceae, and of Citrus trees.



Female *Aphis gossypii* surrounded by larvae on foliage

Photo: Jérôme Carletto

BIOLOGY/ECOLOGY

Dispersal mechanisms

Flight range of winged adults is very limited. Long-range dispersal of eggs, immature stages and adults is mediated with the transport of infested plant material.

Reproduction

The taxonomic status of this alien aphid is problematic, and hence the interpretation of biological information is difficult. Moreover, different biotypes exhibiting host preferences have been reported and a genetically differentiated cucurbit host race has been identified. In Europe, it reproduces exclusively by apomictic parthenogenesis, and can produce nearly sixty generations a year under favourable conditions. In the USA, it can be holocyclic with a broadleaved tree (e.g., *Catalpa*, *Rhamnus*) as the primary host. However, sexual reproduction has been occasionally observed in France on *Hibiscus syriacus* as primary host. This aphid is closely related to European *Aphis* species of the *frangulae* group utilizing *Frangula alnus* as primary host. In the USA, Japan and China, they can be holocyclic with *Hibiscus*, *Catalpa* or *Rhamnus* trees as primary hosts. The optimal temperature for reproduction is reported to be about 21-27°C. Viviparous females produce a total of about 70-80 offspring at a rate of 4.3 per day. Developmental periods of immature stages vary from 20.7 days at 10°C to 3.8 days at 30°C.

Known predators

Predators include midges, anthocorid bugs, lacewings, syrphid fly larvae and ladybeetles. Several aphidiid and aphelinid hymenopteran are parasitoids.

Resistant stages (seeds, spores etc.)

Unknown.

HABITAT

Native (EUNIS code)

Unknown.

Habitat occupied in invaded range (EUNIS code)

I1: Arable land and market gardens, I2: Cultivated areas of gardens and parks; glasshouses.

Habitat requirements

Good resistance to summer heat. Dry weather conditions are favourable but heavy rainfall decreases population sizes.

DISTRIBUTION

Native Range

Unknown.

Known Introduced Range

Found in tropical and temperate regions throughout the world except northernmost areas. It is common in Africa, Australia, Brazil, East Indies, Mexico and Hawaii, Present in most of Europe. Can develop outdoors in southern Europe but surviving only in glasshouses in northern Europe.




Trend

Increasing introductions all over Europe.

MAP (European distribution)



Legend

	Known in country		Known in CGRS square		Known in sea
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INTRODUCTION PATHWAY

Passive transport with plant trade including vegetables, fruits, cut flowers, ornamental plants, bonsais, and nursery stock.

IMPACT

Ecosystem Impact

Not really known; attracts ants because of mutually beneficial relationships in using honeydew.

Health and Social Impact

Unknown.

Economic Impact

Nymphs and adults feed on the underside of leaves, or on growing tip of vines, sucking nutrients from the plant. The foliage may become chlorotic and die prematurely. Their feeding also causes a great deal of distortion and leaf curling, hindering photosynthetic capacity of the plant. In addition, they produce honeydew which allows growth of sooty moulds, resulting in a decrease of fruit/vegetable quantity and quality. The species is also vector of crinkle, mosaic, rosette, Tristeza citrus fruit (CTV) and other virus diseases. Its impact is especially important on economically-important vegetable and fruit crops such as courgette, melon, cucumber, aubergine, strawberry and on cotton, mallow and citrus.

MANAGEMENT

Prevention

Unknown.

Mechanical

Unknown.

Chemical

It has become resistant to many pesticides. Insecticides should be used sparingly and in conjunction with other non-chemical control methods

Biological

Parasitoid aphidiid wasps (e.g., *Aphidius colemanior*, *Lysiphlebus testaceipes*), aphelinid wasps (e.g., *Aphelinus gossypii*), predatory midges (e.g., *Aphidoletes aphidimyza*), predatory anthocorid bugs (*Anthocoris* spp.), predatory coccinellids, and entomopathogenic fungi (e.g., *Neozygites fresenii*) are efficient for biocontrol in greenhouse crops.

REFERENCES

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OTHER REFERENCES

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