

# Mango Pests and Beneficial Insects<sup>1</sup>

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## Insects on Flowers and Fruits

### Thrips

In Florida, the thrips complex consisting of *Frankliniella bispinosa* (Morgan), *F. occidentalis* and *F. kellyae* (Sakimura) is the most frequently observed blossom pest. It causes damage by ovipositing in the panicle and feeding on the floral nectaries and anthers, which may result in premature loss of pollen. Yield reduction might occur if thrips densities reach more than 400 thrips per panicle. These thrips are light-yellowish (Figure 1) and appear commonly during the dry season (January to April).



Figure 1. An adult thrips, *Frankliniella occidentalis*. Identification by J. Xian, 2016.

### Mirids

The mirid, *Dagbertus fasciatus* (Figure 2), can cause damage to flowers and recently set fruit causing them to drop. Wounds on fruit may serve as a point of entry for decay

organisms. These insects are comparatively small, and their nymphs can pass through several instars and increase in size. Color patterns change from a variety of greens to browns.



Figure 2. A mirid, *Dagbertus fasciatus*. Identification by R. Baranowski.

### Mealybugs

The mealybugs may infest fruit and cause irregular spotting. Adult female mealybugs are white, covered with a mealy wax and about 3 mm long (Figure 3).

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Figure 3. A & B) The mealybug, *Ferrisia virgata* (Cockerell) found infesting mango fruits and leaves. Identification by G. Hodges, 17 Aug. 2008.

## Scales

Several kinds of scales, including lesser snow (*Pinnaspis strachani*), coconut (*Aspidiotus destructor*), pyriform (*Protopulvinaria pyriformis*), mango shield (*Milviscutulus mangiferae*), oleander (*Pseudaulacaspis cockerelli*), acuminate (*Kilifia acuminata*), false oleander (*Pseudaulacaspis cockerelli*) (Figure 4), croton (*Phalacroccus howertoni*) (Figure 5), Florida wax (*Ceroplastes floridensis*), Mango (*Aulacaspis tubercularis*) (Figures 6, 7, and 8), plumose (*Morganella longispina*), Florida red (*Chrysomphalus aonidium*) and Dictyospermum (*Chrysomphalus dictyospermi*) infest mango. These scales are found on the upper or lower surfaces of leaves and also on fruits. Scales are frequently parasitized by small wasps. *Microterys nietneri* (Motsschulsky) is an Encyrtid that attacks soft scales (Figure 9).

## Insects and Mites on Foliage

For Scales and Mealybugs, please see the section on Fruits above.

## Mites

The avocado red mite and the mango bud mite are serious mango problems.

The mango bud mite, *Aceria mangiferae* (Sayed) (Figures 10 and 11) causes proliferation of stems at the terminal branch. This symptom is known as witches broom (Figures

12 and 13). Young trees can be stunted if severely attacked during several consecutive seasons by this mite. These mites are very small and difficult to see, requiring a microscope for viewing.



Figure 4. *Pseudaulacaspis cockerelli*, the false oleander or magnolia white scale on mango. Female (left) and elongated males (right). Identification by Z. Ahmed, 2 June 2017.

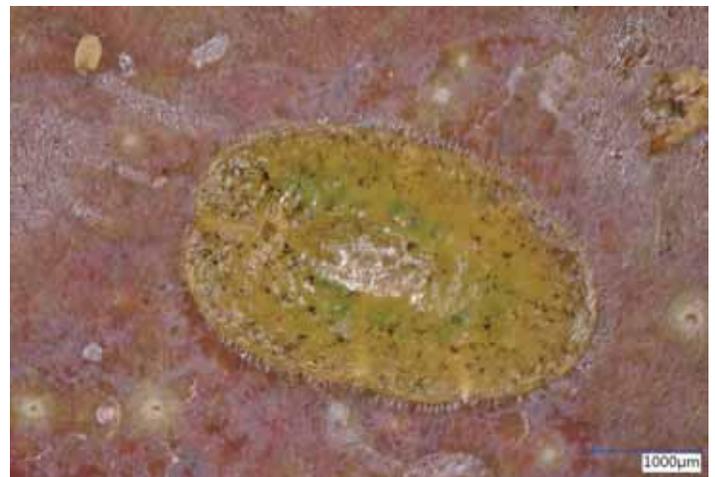


Figure 5. *Phalacroccus howertoni*, the croton scale on mango fruit.



Figure 6. *Aulacaspis tubercularis*, the mango scale. An invasive armored scale on mango leaves. Identification by G. Hodges, 17 June 2008.



Figure 7. The female of *Aulacaspis tubercularis*, the mango scale. Identification by G. Hodges, 17 June 2008.

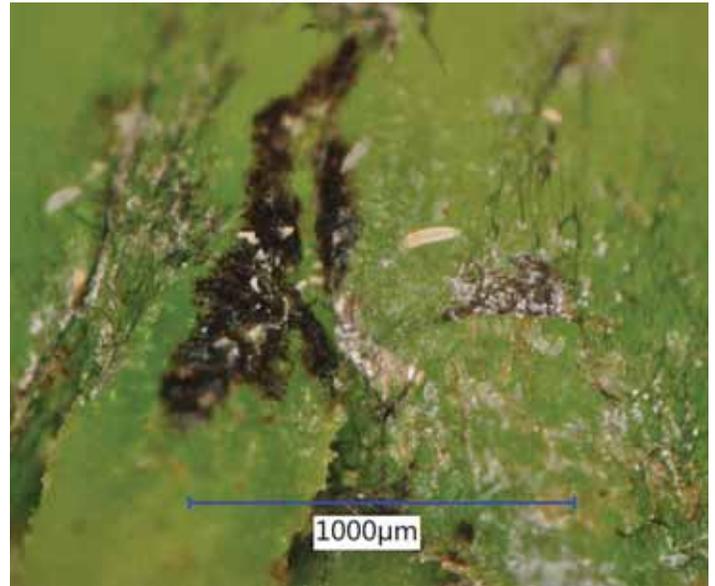


Figure 10. Mango bud mite, *Aceria mangiferae* on a bud.



Figure 8. The male of *Aulacaspis tubercularis*, the mango scale. Identification by G. Hodges, 17 June 2008.



Figure 11. A close up of the Mango bud mite, *Aceria mangiferae*.



Figure 9. Scales are frequently parasitized by Hymenoptera, this *Microterys nietneri* (Motsschulsky) is an Encyrtid that attacks soft scales. Identification by G. Evans, 19 Nov. 2003.



Figure 12. Mango bud mite damage.



Figure 13. A close up of Mango bud mite damage.

The avocado red mite, *Oligonychus yothersi*, (Figures 14 and 15) is a common pest of mango in Florida. Feeding is first confined to the upper surface of mango leaves; it is found first along the midrib, then along secondary leaf veins. The areas along the veins become reddish-brown and during heavy infestations can be covered with mite's cast skins. Damage to the leaf area is regularly observed from October through February, causing up to 30% reduction of photosynthetic activity of the leaves. This mite is an occasional pest in some orchards and is seldom observed in others. Periodic inspections are recommended during December, January and February. Control measures may be started when the population reaches 6 or more mites per leaf.



Figure 14. *Oligonychus yothersi*, the avocado red mite is common on mango. Identification by W. C. Welbourn, 29 Jan 2004.

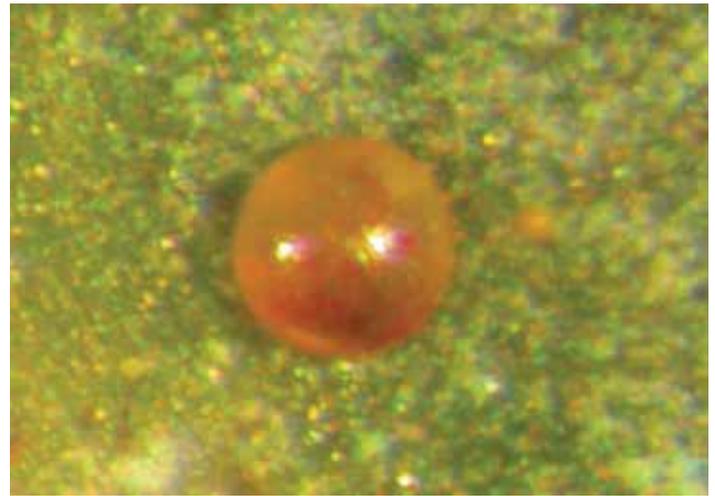


Figure 15. The egg of *Oligonychus yothersi*, the avocado red mite.

### LIFE CYCLE

The eggs are spherical, stalked and adults have a pinkish color in their middle area with many purplish-brown blotches. The duration of the life stages can last from 14 to 15 days. Females are capable of laying 40 to 50 eggs during their life span.

### Whiteflies/Blackflies

Whiteflies (*Paraleyrodes pseudonarananajae*) and blackflies (*Aleurocanthus woglumi*) (Figures 16, 17, and 18) suck cell sap from leaves, which wilt when whitefly populations are high. A sticky substance called honeydew is excreted by the whiteflies. Black sooty mold grows on the honeydew, and with high infestations, this can almost blacken entire trees, reducing photosynthetic efficiency and causing defoliation. Several parasitoids, i.e., *Encarsia* spp., attack immature stages and provide good control.



Figure 16. Larvae of the whitefly, *Paraleyrodes pseudonarananajae* Martin; and the blackfly, *Aleurocanthus woglumi* Ashby. Identification by G. Hodges, 13 Dec. 2007.



Figure 17. Pupae of the whitefly, *Parealeyrodes pseudonarananjae*, with dense waxy filaments. Identification by G. Hodges, 13 Dec. 2007.



Figure 19. The adult Sri Lankan weevil, *Myllocerus undecimpustulatus undatus*, feeds on the leaves of mango trees.



Figure 18. Adult of the whitefly, *Parealeyrodes pseudonarananjae*. Identification by G. Hodges, 13 Dec. 2007.



Figure 20. *Selenothrips rubrocinctus*, red-banded thrips pupae. Identification by H. Glenn, 3 Aug. 2006.

## Beetles

A weevil native to Sri Lanka, *Myllocerus undecimpustulatus undatus* (Figure 19) first detected in Broward County in 2000, feeds on the foliage of mango trees. The larval stage of this weevil feeds on the roots of the plants.

## Thrips

Red-banded thrips, *Selenothrips rubrocinctus*, are slender, yellowish and with a red band on the abdomen; about 1.5 mm long (Figure 20). Adults are dark brown to black (Figure 21). They can be found on both sides of the leaves, causing necrosis and subsequent leaf drop. When infestations are heavy, thrips feed on the entire surface of the leaves, leaving the leaf with a characteristic silver color. Infested leaves are spotted on the upper surface with fecal deposits that turn reddish brown to black.



Figure 21. *Selenothrips rubrocinctus*, red-banded thrips adult. Identification by H. Glenn, 3 Aug. 2006.

## Insects on Stem and Trunk

Pyrellin (pyrethrin + rotenone) is labeled on mangos for aphids, caterpillars, leafhoppers, mites, thrips, weevils and whiteflies. Use 1–2 pts/acre. It can be used until harvest.

### Beetles

The scolytid beetles, *Hypocryphalus mangiferae* (Stebbing), attack the main stem and branches (Figures 22 and 23). Fungal mycelium growth can extend terminally and basally from the beetle gallery in the mango tree and can kill the affected branches. The insects prefer trees that have been weakened by pathogens, wind, etc., but after a population has been established in one orchard the infestation spreads to healthy trees. In Brazil and Asia they are associated with Mango Sudden Decline or Mango Wilt, where branches begin to gum, rot, and show cankers and vascular discoloration.



Figure 22. The scolytid beetle, *Hypocryphalus mangiferae* in a gallery with eggs. Identification by T. Atkinson, July 2015.



Figure 23. A close up of the adult scolytid beetle, *Hypocryphalus mangiferae*. Identification by T. Atkinson, July 2015.

## Control, Precautions, and Restrictions

Mangoes are subject to attack by several insect, however only a few have populations at levels high enough to be considered pests. Below is a website that contains control measures to use on an as needed basis. However, the user must read the pesticide label carefully and adhere to regulations. Your local UF/IFAS Extension office may be able to provide more information on pest control materials.

<http://edis.ifas.ufl.edu/hs177>

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