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EENY-510

Florida Wax Scale, *Ceroplastes floridensis* Comstock[1]

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Introduction

The Florida wax scale, *Ceroplastes floridensis* Comstock, is one of the most commonly encountered soft scales throughout the the southern United States, where it is a serious pest of citrus and several ornamental and landscape plants, like holly.

Synonymy

Cerostegia floridensis (Comstock), Gimpel et al. 1974

Distribution

Florida wax scale is thought to be originated from the northern Neotropical region and can now be found in:

- **Africa**: Algeria, Egypt, Kenya, Libya, Madagascar, Madeira, Mauritius, Morocco, Mozambique, Seychelles, Sierra Leone, Tanzania, Uganda
- **Asia**: Bonin Islands, Brunei, China, Cyprus, India, Iran, Israel, Japan (including the Ryukyu Islands), Korea, Lebanon, Malaysia, Pakistan, Sri Lanka, Syria, Taiwan, Turkey, and the more southern member countries of the former Union of Soviet Socialist Republics
- **Australasia and Pacific Islands**: Australia, Caroline Islands, Mariana Islands, New Zealand
- **Central America and Caribbean**: Costa Rica, Guatemala, Honduras, Panama, West Indies
- **Europe**: France (including Corsica), Greece, Italy (including Sicily), Malta, Spain
- **North America**: Mexico, United States
- **South America**: Brazil, Colombia, Ecuador, Guyana, Venezuela

(CABI 1982)

In the United States, it occurs from New York to Florida and west to New Mexico (Hamon and Williams 1984). It may occur in the northern U.S., but because it cannot survive the winter it has not achieved pest status there (Hodges et al. 2000).

Description

Adults

The adult Florida wax scales are elliptical, reddish brown with short anal process (Hamon and Williams 1984). The adult female is coated with a thick layer of pinkish-white wax. Inside the wax, the body of the adult female is reddish. Adults are mostly found on twigs and branches. The size of the female is about 2 to 4 mm in length and 1 to 3.5 mm in width. Males are not known in this species (Futch et al. 2009).

Eggs

The eggs are pink to dark red and they are laid under the adult female scale's wax covering.

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Figure 1. Adult Florida wax scales, *Ceroplastes floridensis* Comstock. A few nymphs are visible at the left.
Credits: Lyle J. Buss, University of Florida

Figure 2. Adults and early instar nymphs of the Florida wax scale, *Ceroplastes floridensis* Comstock.
Credits: Lyle J. Buss, University of Florida

Nymphs

The first instars are called crawlers. Crawlers are pink and, as soon as they hatch, the first instars disperse, find a suitable feeding place and settle. The wax scale females develop through the second and third instars before becoming adults. The wax covering secreted around them gives them a star-like appearance. Nymphs are found on the leaves and twigs. Florida wax scale on the leaves align themselves along the leaf midrib (Drees et al. 2006).

Life Cycle and Biology

Three generations of Florida wax scale occurs in Florida (Johnson and Lyon, 1991). Each generation lasts for about three to four months. The first generation occurs in April and May, the second occurs in July and August, and the third one occurs in October and November. The nymphs go through three stages of development (Drees et al. 2006). First instars (crawlers) hatch in two to three weeks from the eggs, emerge from underneath the female, bodies and settle on other leaves, stems, and twigs. They can move from one place to another in the same plant in search of new flush

Figure 3. Crawler (pink instar - second from right) and settled nymphs of the Florida wax scale, *Ceroplastes floridensis* Comstock.
Credits: Lyle J. Buss, University of Florida

of growth. Florida wax scales can also overwinter as newly mature females (Drees et al. 2006).

Hosts

In Florida, Florida wax scale infests a wide range of host plants including the following:

- avocado, *Persea americana*
- citrus, *Citrus* spp.
- crape myrtle, *Lagerstroemia* spp.
- deodar cedar, *Cedrus deodara*
- elm, *Ulmus* spp.
- holly, *Ilex* spp.
- Indian hawthorn, *Rhapiolepsis indica*
- loblolly pine, *Pinus taeda*
- oaks, *Quercus* spp.

(Drees et al. 2006)

Economic Importance and Damage

The direct damage is caused by insertion of stylets during feeding by the nymphs, which can cause premature leaf drop and twig dieback. High populations can cause host death. Severe infestations may result in shoot or branch dieback in citrus and important landscape plants like Indian hawthorn and hollies.

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When large populations of Florida wax scale occur, sooty mold may become a problem due to the mold's growth on the large quantities of honeydew excreted by these scales (Argov et al. 1987). The mold can cause a significant reduction in photosynthesis and aesthetic value (Hodges et al. 2000).

Figure 4. Sooty mold on holly.
Credits: Eileen Buss, University of Florida

Management

Biological control

Three parasitic wasps are reported to be parasitoids of Florida wax scales in some parts of the United States:

- *Coccophagus lycimnia* (Walker) (Aphelinidae)
- *Metaphycus eruptor* Howard (Encyrtidae)
- *Scutellista cynea* Motschulsky (Pteromalidae)

(Drees et al. 2006a)

Cultural control

The timing to apply control measures is complicated due to three generations per year. Pest populations increase quickly. Heavily infested hollies should be replaced with resistant varieties, such as *I. buergeri, I. crenata, I. glabra, I. myrtifolia, I. verticillata* and *I. vomitoria* (Hodges et al. 2000).

Alternative shrubs like ligustrum, privet and boxwood should be considered in plantings. Plants should be carefully checked for any infestation, and proper watering and fertilization should be provided. Heavily infested plant parts should be pruned (Drees et al. 2006a).

Chemical control

Systemic insecticides or foliar sprays applied to the soil or foliage can effectively control scale infestations. Repeated applications may be needed.

Florida Insect Management Guide for ornamentals

Florida Citrus Pest Management Guide for soft-bodied insects

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