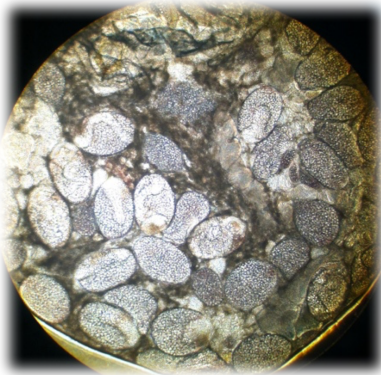


Armored Scale Insects (Hemiptera: Diaspididae)

Adam G. Dale¹, Turfgrass and Ornamental Entomologist



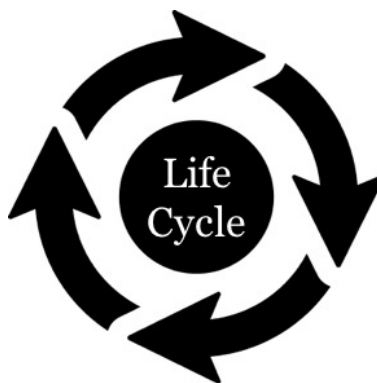
Eggs within gravid female



First instar nymph (crawler)



Gravid adult female with cover removed



Second instar nymphs (small circles)



Adult females



Adult male

Armored scale insects

Armored scale insects feed on the contents of cells just under the surface of leaves and bark and excrete their waste in the form of a protective cover (called a test). This cover can be removed to reveal the soft-bodied insect feeding beneath. Once female armored scales begin to feed on a host plant they will remain immobile in that location for the remainder of their life. Armored scales are the most diverse group of scale insects in Florida with over 130 species. Armored scales range in size, shape, and color. Adults often have a low profile against the plant surface. Nymphs are small, often flat, and inconspicuous, which makes detection difficult without close inspection.

Biology

Female armored scale insects are only mobile as first instar nymphs (crawlers). After selecting a feeding site, females settle onto the plant where they lose their antennae and legs and begin to produce their waxy covering. Here, they will feed on the content of plant cells for the remainder of their life. Adult females produce offspring either internally or by depositing eggs underneath their body, typically in the tens to hundreds. Eggs will hatch and emerge from the covering to find a suitable feeding site and begin the cycle over.

Signs & symptoms of a soft scale infestation

1. Leaf chlorosis
2. Premature leaf drop
3. Branch dieback
4. Plant death

Host plants

Due to the high diversity of armored scales in Florida, there is a high diversity of host plants. Many armored scale species specialize on one or a few host plants, while others can be found on several. Learn to recognize common scale insect species by their host plant.

Common armored scale – host plant associations in Florida

- Florida red scale (*Chrysomphalus aonidum*) – Coontie
- Asian cycad scale (*Aulacaspis yasumatsui*) – Sago palm
- Obscure scale (*Melanaspis obscura*) – Oak species
- Gloomy scale (*Melanaspis tenebricosa*) – Red maple
- Tea scale (*Fiorinia theae*) – Camellia

Natural enemies

Many predators and parasitoids attack scale insects in the landscape and keep them below damaging levels. The most common natural enemy of armored scale insects are parasitoid wasps. When scale insects have been located, look closely for evidence of predation (large openings in scale covers) or parasitism (circular holes in scale covers). Although they are not feeding or causing damage, many scale insect covers may remain on the plant after being killed by natural enemies, which can be aesthetically unacceptable.

Visit the UF/IFAS EDIS website (<http://edis.ifas.ufl.edu>) and search for ENY-323, Managing scale insects on ornamental plants for more detailed information on the biology and management of armored scale insects in Florida.

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