

Cardin's Whitefly, *Metaleurodicus cardini* (Back) (Insecta: Homoptera: Aleyrodidae: Aleurodicinae)¹

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Introduction

Cardin's whitefly, *Metaleurodicus cardini* (Back), has been known in Florida since 1917. It was originally described from Cuba and was named for Professor Patricio Cardin. This whitefly is usually innocuous, but under some situations can become a damaging pest. These situations usually occur when something has disrupted the parasite/predator complex.

Synonymy

Aleurodicus cardini Back 1912, Canadian Entomol. 44: 148-51.

Aleurodicus (*Metaleurodicus*) *cardini* Back; Quaintance and Baker 1913. p. 75-77.

Metaleurodicus cardini (Back); Bondar 1923. p. 81.

Distribution

Known from Gainesville to South Florida, and it is much more common in the subtropical areas. Foreign distribution includes Cuba, Bermuda, and Jamaica.

Description

Pupa: The pupal case is just short of 1 mm long and 0.6 mm wide. It is elongate oval in shape and elevated on a vertical marginal waxen fringe (Figure 1). The pupal case color is yellowish white and becomes semitransparent when empty. Parasitized pupal cases are blackish throughout or in spots (Back 1912). Dorsum of pupal case has five pairs of large compound pores with a reduced number of locules. Smaller pores with a star-shaped internal matrix are scattered over the dorsal surface. A row of bilocular wax pores are present around the dorsal submargin. The vasiform orifice is subcordate in outline, with the cephalic margin straight, and the operculum is somewhat rectangular in shape. The lingula is spatulate, slightly exserted and armed with four long setae (Quaintance and Baker 1913).

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Figure 1. Pupal cases of Cardin's whitefly, *Metaleurodicus cardini* (Back). Credits: Division of Plant Industry

Adult: The adult is greenish yellow with a fine dusting of white wax (Figure 2). The wings are somewhat dusky with a conspicuous dark spot near the center of each wing. As females deposit eggs, a fine trail of fluffy white wax (Figure 3) is rubbed from a tuft of wax on the underside of the female abdomen.

Diagnosis

The adult is distinguished readily from all other whiteflies known in Florida by the distinct dark spot on each wing. The pupal case will require a microscope slide preparation. The pupa is separated from other Florida species by the four pairs of abdominal cup-shaped compound pores with reduced loculi, and the 5th pair on the cephalic segment. The only other species of this genus known in Florida, *Metaleurodicus griseus* (Dozier) (new combination),



Figure 2. Adult Cardin's whitefly, *Metaleurodicus cardini* (Back). Credits: Division of Plant Industry

has six abdominal pairs of compound pores, and occurs only on *Eugenia* spp. in Florida.

A key that covers 16 species of whiteflies that may infest Florida citrus is available on the World Wide Web. The WWW key, developed by the Florida Department of Agriculture and Consumer Services' Division of Plant Industry, uses color photographs of nymphs to assist in identification. It is available at: <http://www.doacs.state.fl.us/~pi/enpp/ento/aleyrodi.htm>.

Hosts

The most common host in Florida is *Psidium guajava*. Other hosts from the DPI files are: *Citharexylum fruticosum*, *Dipholis salicifolia*, *Duranta repens*, *Duranta* sp., *Eugenia* sp., *Malpighia glabra*, *Melaleuca quinquenervia*, *Paurotis wrightii*, *Pimenta dioica*, and *Plumeria* sp. Additional hosts from the literature are: *Citrus sinensis*, *Citrus* sp., and *Citharexylum spinosum* (Mound and Halsey 1978).

Survey and Detection

Inspect the undersides of leaves for white fluffy wax trails, pupal cases, and adult whiteflies with a dark spot on each wing. This is only whitefly in Florida easily identified from the adult.



Figure 3. Fluffy wax trails deposited by adult female Cardin's whitefly, *Metaleurodicus cardini* (Back). Credits: Division of Plant Industry

Management

Whiteflies also are controlled by sprays applied primarily for control of scale insects. Spraying of commercial citrus exclusively for whitefly control is seldom practiced in Florida. Recommended control measures for commercial or dooryard citrus are significantly different. Please consult the specific management guide for your situation.

Citrus Management Guide for whiteflies in commercial groves

Control of whiteflies on Florida's dooryard citrus trees

It is important to note that spraying with copper for control of harmful fungal diseases will also inhibit growth of "friendly fungi" resulting in an increase in whitefly populations. Also, more than one application of sulfur per year can have an adverse effect on parasites. Spray oil has some insecticidal properties, but is primarily used to remove sooty mold which grows on the fruit and leaves.

Selected References

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