Entomology Circular 275
June 1985

Fla. Dept. Agric. & Consumer Serv.
Division of Plant Industry

Cloudy-Winged Whitefly, Dialeurodes citrifolii (Morgan)

(HOMOPTERA: ALEYRODIDAE: ALEYRODINAE)[1]

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SYNONYMY: Aleyrodes citrifolii Morgan 1893
Aleyrodes nubifera Berger 1909

INTRODUCTION: Cloudy-winged whitefly, Dialeurodes citrifolii, is one of the most common whiteflies associated with citrus in Florida. A native of Asia, it was described by Morgan in 1893 and later by Berger in 1909 from specimens collected in Florida.

DESCRIPTION: Adults are very small, yellowish, with a cloudy spot on the apex of the forewing, and dusted with white powdery wax (Fig. 1A). When at rest the wings are laid back against the abdomen. Males are smaller than females, with the mean body length 1.28mm for females and 1.04mm for males (Quaintance and Baker 1917). The immature stages are flat, elliptical in shape and light yellowish in color, and prefer the underside of the leaf (Fig. 1B). Three larval and one pupal stage occur in the life cycle. The first stage is 0.31mm long and 0.20mm wide, second stage 0.58mm long and 0.38mm wide, third stage 0.88mm long and 0.66mm wide, and pupa (4th stage) 1.44mm long and 1.09mm wide (Peracchi 1971). The eggs are tiny (0.25mm long) elliptical elongate in shape and most commonly laid on young leaves (Fig. 1C). The life cycle from egg to adult ranged from 51-334 days with 3 generations per year in Florida (Morrill and Back 1911).

DIAGNOSIS: D. citrifolii is similar to D. citri, but the former adult has a cloudy spot on the distal end of the forewing. The egg is black and its surface is netted with a system of punctures instead of brown and smooth as D. citri. It is very difficult to separate the immatures under field conditions.

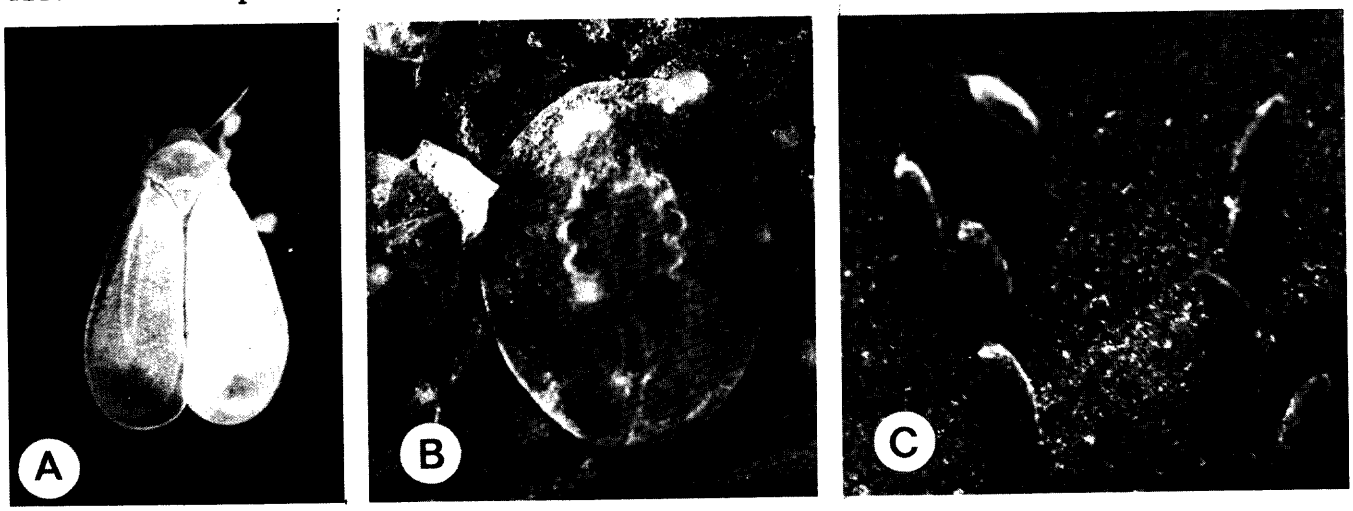

Fig. 1. Dialeurodes citrifolii (Morgan). A) Adult. B) Immature stages. C) Eggs. Photos by J. W. Lotz. (DPI photo #850024-A-21A, #850024-A-29A, #850024-B-4).

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ECONOMIC IMPORTANCE: The whitefly damages citrus by sucking sap from the leaves. Also, honeydew excreted is a medium for the growth of sooty mold fungi. The sooty mold can cover the fruit and foliage so that it interferes with photosynthesis, and requires that fruit be washed before marketing. In 1977, Encarsia lahorensis became established in Florida, and by 1980 had suppressed the population of D. citri (Nguyen and Sailer 1979; Sailer et al. 1984). Since then, D. citrifolii has gradually replaced D. citri on citrus in central and southern Florida.

DISTRIBUTION: This species occurs in Barbados, Brazil, Bermuda, China, Cuba, Hong Kong, Jamaica, Japan, Malaysia, Puerto Rico, Trinidad, Venezuela, Vietnam, and the United States (Arkansas, Florida, Louisiana, North Carolina, Texas) (Mound and Halsey 1978).

HOSTS: Citrus is the most important host of this species; however, it can be found on Ficus nitida (Morrill and Back 1911) and Gardenia sp.

NATURAL ENEMIES: There are several natural enemies of D. citrifolii, including:
Parasites: Encarsia pertrenua (Silvestri) (reported in Vietnam) and Encarsia sternua (Silvestri) (reported in Macao) (Silvestri 1927, and Fulmex 1943).
Predators: Delphatus catalinae Horn (Mound and Halsey 1978)
Pathogens: Aschersonia aleyrodis Webber, Aschersonia flavo-citrina B. Henning, and Aegerita webberi Fawcett (Pratt 1958). A. aleyrodis (red aschersonia) is the most common pathogen on D. citrifolii in central and southern Florida.

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