## **Pest Alert**

Florida Department of Agriculture and Consumer Services, Division of Plant Industry

## The Honeysuckle Whitefly, *Aleyrodes Ionicerae* Walker, New to Florida and the United States

**Ian C. Stocks**, <u>Ian.Stocks@FreshFromFlorida.com</u>, Biological Scientist IV, Florida Department of Agriculture and Consumer Services, Division of Plant Industry

**INTRODUCTION:** In April 2012, Florida Department of Agriculture and Consumer Services, Division of Plant Industry (FDACS-DPI) inspector Stacey Simmons collected this new U.S. continental record of honeysuckle whitefly (*Aleyrodes lonicerae* Walker; Aleyrodidae-Aleyrodinae) infesting violets (*Viola* sp.; Violaceae) in a small nursery in Volusia County. This species has been intercepted in plant shipments originating in Europe, but has not previously been found in the New World. This species is also known in Europe as the strawberry whitefly.

The genus *Aleyrodes* currently contains 34 species and is worldwide in distribution. The majority of species are monophagous or essentially so, restricted in distribution, and of no known economic importance. *Aleyrodes lonicerae*, *A. proletella* (L.) (cabbage whitefly), and *A. spiraeoides* Quaintance (iris whitefly) are the only species in the genus that are polyphagous. Thus far, the iris whitefly is the only species of *Aleyrodes* that has caused economic impact in the United States, affecting plants cultivated in California, Oregon and Washington for the landscape industry. No species of *Aleyrodes* have been implicated in vectoring pathogens.

**DESCRIPTION:** The pupal life stage is approximately 1 mm long, light yellow in color, oval and dorsally convex (Figs. 1–4). Adults are approximately 1 mm long (Fig. 5), have a light yellow body and white wings with a faint grey curved line in the lower portion of the forewing. Mature pupae may be dusted by wax produced by adults, but are not otherwise conspicuously covered in wax. The pupal specimens observed in this infestation did not possess a marginal fringe of wax, contrary to the description by Alford (2007) that the "…pseudo-pupa [is] surrounded by a thick, waxy fringe." First, second and third stage (Figs. 1–3) larvae do produce a fringe of wax around the circumference, but are devoid of wax dorsally. All post-egg stages are an opaque light yellowish-green dorsally. The lingula, which is barely visible under a hand lens, is bluntly triangular and brown. An oval ring of wax residue can be seen on the leaf surface after the pupal exuviae are removed (Fig. 4).

**BIOLOGY:** The populations discovered on *Viola* sp. leaves in the nursery consisted of all life stages, and were restricted to the ventral leaf surface. Small quantities of powdery wax dusted the leaf surface, the eggs, larvae, pupae and adults of the whiteflies. Alford (2007) reported that consecutive generations were found together on a leaf, with the egg to pupation time taking approximately two months.

HOSTS: Polyphagous. From Evans (2008): Balsainaceae—Impatiens noli-tangere Campanulaceae—Platycodon grandiflorum Caprifoliaceae—Lonicera spp. Ericaceae—Vaccinium myrtillus Fabaceae—Vaccinium myrtillus Fabaceae—Robinia viscosa Oxalidaceae—Oxalis spp. Papaveraceae—Chelidonium majus, Dicentra spectabilis Rosaceae—Crategus microphylla, Filipendula ulmaria, Fragaria spp.; Geum rivale, Prunus dulcis, Rubus chamaemorus Urticaceae—Urtica spp. Violaceae—Viola spp.



**ECONOMIC IMPORTANCE:** Aleyrodes lonicerae does not appear to have become a pest of any cultivated crop in any region where it now occurs. In Florida, *Lonicera sempervirens* L. (coral honeysuckle, trumpet honeysuckle) is a widely cultivated native species. The invasive *Lonicera japonica* Thunb. (Japanese

honeysuckle) also occurs throughout much of Florida. This whitefly is also reported to feed on strawberries (*Fragaria* spp.). Strawberries are an important crop in several Florida counties. Florida accounts for almost all U.S. domestic strawberry production in the winter months.

A single specimen from the original sample contained an adult female parasitoid wasp inside the body of the whitefly (Fig. 6), identified by Dr. Greg Evans (USDA-APHIS) as *Encarsia luteola* Howard (Aphelinidae). A subsequent sample contained several *Nephaspis oculatus* (Blatchley) (Coleoptera: Coccinellidae) pupae, from which adults later emerged (Figs. 7–8).

DISTRIBUTION: Found throughout Europe and east into Russia; Israel, Turkey, Iran, and Korea. (Evans 2008).

**NATURAL ENEMIES:** The Universal Chalcidoidea Database lists 11 parasitoid wasp species associated with *A. lonicerae*–eight in the family Aphelinidae (*Cales noaki, Encarsia* spp., *Eretmocerus mundus*), and three in Eulophidae (*Ceranisus pacuvius, Euderomphale* sp1, *Euderomphale* sp2). *Encarsia inaron, E. lutea, E. meritoria, E. pergandiella* and *Eretmocerus mundus* are recorded from Florida.

## LITERATURE CITED:

Alford, D. 2007. Pests of fruit crops: a color handbook. Elsevier. 461 p.

- **Evans, G. 2007.** The whiteflies (Hemiptera: Aleyrodidae) of the world and their host plants and natural enemies. <u>www.sel.</u> <u>barc.usda.gov:8080/1WF/World-Whitefly-Catalog.pdf</u>. [accessed August 20 2012]
- Hill, D. 1987. Agricultural insect pests of temperate regions and their control. Cambridge University Press. 672 p.
- Noyes, J.S. 2012. Universal Chalcidoidea Database. World Wide Web electronic publication. <u>http://www.nhm.ac.uk/</u> <u>chalcidoids</u>. [accessed August 20 2012]



**Fig. 1.** Ventral leaf surface of *Viola* sp. infested with immature and pupal *Aleyrodes lonicerae*. Photograph: I.C. Stocks, FDACS-DPI



Fig. 2. Close-up of immature and pupal *Aleyrodes lonicerae*. Photograph: I.C. Stocks, FDACS-DPI



**Fig. 3.** 3rd stage larval *Aleyrodes lonicerae*, showing waxy lateral fringe. Photograph: I.C. Stocks, FDACS-DPI



**Fig. 4.** Pupal *Aleyrodes lonicerae*. Note fullyformed compound eyes of developing adult. Photograph: I.C. Stocks, FDACS-DPI



**Fig. 5.** Adult female *Encarsia* sp. contained within the puparium of *Aleyrodes lonicerae*. Photograph: I.C. Stocks, FDACS-DPI



**Fig. 6.** Adult, pupal and larval *Aleyrodes lonicerae* surrounded by powdery wax produced by the adults. Photograph: I.C. Stocks, FDACS-DPI



**Fig. 7.** Pupal *Nephaspis oculatus* surrounded by exuviae and exuvial wax scars *Aleyrodes lonicerae* on leaf surface. Photograph: I.C. Stocks, FDACS-DPI



**Fig. 8.** Adult *Nephaspis oculatus*. Photograph: I.C. Stocks, FDACS-DPI