

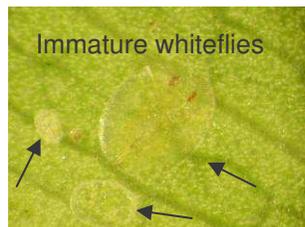
The Fig Whitefly – A New Pest in South Florida

Introduction: Recently, a new pest was reported attacking ficus trees and hedges in Miami, Florida. This pest was identified as the fig whitefly, *Singhiella simplex*, and is a new US continental record. Whiteflies are small, winged insects that belong to the Order Hemiptera which also includes aphids scales, mealybugs, and bugs. These insects typically feed on the underside of leaves with their “needle-like” mouthparts. Whiteflies can seriously injure host plants by sucking juices from them causing wilting, yellowing, stunting, leaf drop, or even death.

Description and Damage: The leaves of ficus trees infested with whiteflies begin to turn yellow before the leaves are dropped from the plant. Ficus trees without their leaves are one of the most obvious symptoms of a whitefly infestation. This whitefly has been most commonly found infesting weeping fig (*Ficus benjamina*) but has also been seen on *F. altissima*, *F. bengalensis* (also called “banyan tree”), *F. microcarpa*, and *F. maclellandii* in Miami. Weeping figs are commonly used as hedges but also grow as trees. Other hosts include the strangler fig (*F. aurea*), Cuban laurel (*F. microcarpa*), fiddle-leaf fig (*F. lyrata*) and banana-leaf fig (*F. maclellandii*). This whitefly may eventually be found on other species of ficus. Azalea has also been listed as a host plant.



If the foliage is disturbed the small, white gnat-like adult whiteflies can be seen flying from the foliage. The adult whitefly resembles a very small moth with a yellow body and white wings with a faint grey band in the middle of the wings. Immature stages (eggs and nymphs) can be found primarily on the underside of the leaves. Prior to adult emergence, the nymphs are tan to light green discs with red eyes. The underside of infested leaves look like they are dotted with small, silver or white spots which are actually the empty “skin” of the pupae after the adult emerges.



Biology: The biology of the fig whitefly is not known, however, it is probably similar to related species in Florida. Eggs which are usually laid on the underside of leaves hatch into a crawler stage. The crawler wanders around the leaf until they begin to feed. From this point until they emerge as adults, they are immobile and remain in the same place on the

plant. These feeding, non-mobile stages (nymphs) are usually oval, flat, and simple in appearance.

Management: Although efforts to understand and control this pest are ongoing, there are several potential options for whitefly control. However, it is necessary to consider the site (landscape, hedge, large tree, container, production, etc), the size and number of trees, and the surrounding environment before taking steps to control this pest. For large trees, for example, a foliar spray may not be possible.

In the **landscape**, several natural enemies have been observed attacking this whitefly which can play an important role in controlling this pest. Efforts to introduce other natural enemies are being considered. Awareness of these natural enemies is very important so decisions for additional control measures can be made wisely so as not to also kill the natural enemies.



Monitor your ficus plants for early signs of an infestation because it will be easier to manage the pest before it builds to high populations and causes major damage. Also, if infested trees or hedges are trimmed, either leave the clippings on the property or if removing, bag the clippings to reduce the chance of spreading the insects. If clippings are being transported in a truck, be sure to either bag them or cover these clippings with a tarp.

Insecticidal soap or oil sprays may be an effective method of control for **homeowners**, but, thorough coverage of the undersides of the leaves is especially important. It will also be necessary to repeat these applications every 7 to 10 days. The use of other insecticides may be necessary to control this pest. However, it is important to use products that will not be detrimental to the natural enemies. These products would include Bayer Advanced Tree & Shrub Insect Control (imidacloprid) and Spectricide Tree and Shrub Insect Control (dinotefuran) applied to the soil. Protecting natural enemies may be a critical component in the **long-term control** of this pest. Other products available for homeowner use include Ortho Bug-B-Gon (bifenthrin), Bayer Advanced Rose and Flower Insect Killer (cyfluthrin), Sevin (carbaryl), Malathion, and others, however, these products may also be harmful to the natural enemies. All of the above products can be found at garden centers and hardware stores.

There are also numerous insecticide options available for **professional use in the landscape** and for **growers** which can be found at agricultural and landscape chemical suppliers. Insecticides with systemic properties may be very useful in whitefly control because they can be applied as a drench to the soil and many times provide longer lasting control. These insecticides include the neonicotinoids [Celero (clothianadin), Flagship/Meridian (thiamethoxam), Marathon/Merit (imidacloprid), and dinotefuran (Safari)]. These products also tend to be less disruptive to the natural enemies. After drenching, apply foliar sprays as needed if whiteflies are present. In addition to the neonicotinoid insecticides

listed above, insecticides that can be applied to the foliage for whitefly control include Aria (flonicamid), Avid (Abamectin), Azadirachtin, Distance (pyriproxyfen), Endeavor (pymetrozine), Endosulfan, Judo (spiromesifen), Talus (buprofenzin), and Tristar (acetamiprid). Rotation of insecticides among different modes of action is critical in the management of pests and is especially important for whiteflies that have been shown to develop resistance to insecticides. If plants have received a neonicotinoid drench, DO NOT spray with another insecticide in this group. Also available are products that contain more than one insecticide such as Allectus (imidacloprid + bifenthrin) which is for use in the landscape and Discus (imidacloprid + cyfluthrin) which is for use in production. Sometimes these products are useful because you get the benefits of two different insecticides, however, it is still important to consider how these products will affect the natural enemies. No matter what insecticide is selected, it is very important to check the insecticide label to determine if the insecticide can be used in the landscape, in production, or either. Note that many of the products containing a systemic insecticide also have restrictions about using near water (ponds, lakes, rivers, etc.). Always follow the label directions – **“The label is the law”**.

Although your ficus tree or hedge may appear to be dying after losing most of its leaves, it may still be alive. If the twigs are still supple, the plant will produce new leaves in a few weeks. As soon as new growth is evident, a systemic insecticide applied to the soil may provide protection to the new growth.

For more information, contact your local Extension agent for additional information. Please visit the UF/IFAS Miami-Dade County Extension website for updates <http://miami-dade.ifas.ufl.edu> or <http://mannion.ifas.ufl.edu>

Catharine Mannion, University of Florida, Tropical Research and Education Center; Lance Osborne, University of Florida, Mid-Florida Research and Education Center; Adrian Hunsberger and Henry Mayer, Cooperative Extension Service, Miami-Dade County; Greg Hodges, Department of Agriculture and Consumer Services, Division of Plant Industry.

Photo Credits: C. Mannion, H. Glenn, UF/IFAS, A. Hunsberger, UF/IFAS Miami-Dade County Extension

The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication does not signify our approval to the exclusion of other products of suitable composition. All chemicals should be used in accordance with directions on the manufacturer's label. **Check the label carefully as this information does change and our publications may not have the latest information.** Use pesticides safely. Read and follow directions on the manufacturer's label.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other extension publications, contact your county Cooperative Extension service.

U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Larry Arrington, Dean.