GROWERTALKS

Features

3/21/2012

# Pest Alert: Rugose Spiraling Whitefly

*Dr. Catharine Mannion*



Spiraling whiteflies are representative members of the *Aleurodicus* genus. These whiteflies tend to lay their eggs in a spiral pattern and are also fairly obvious because they produce a white, waxy substance, which is visible on the leaves they feed on. There are more than 30 species of *Aleurodicus* species throughout Central America and the Caribbean, several of which cause significant plant damage.

*Spiraling whiteflies are named for the way they lay their eggs in a distinct spiral pattern. Photo courtesy of H. Glenn, UF/IFAS Tropical Research and Education Center.*

In Florida, there are five different spiraling whiteflies. Some of these spiraling whiteflies have been a pest problem in the past in both the landscape and in production. The most recent introduction, the Rugose spiraling whitefly, is thought to originate from Central America. It's gained statewide attention because of the number of plants it can attack, the mess it makes, and the potential risk it has for spreading into non-infested areas. Currently, this pest is only in Florida and there are concerns that it could be moved to other states. Although spiraling whiteflies are tropical/semi-tropical, they could easily establish in states with warm climates. It will likely not become a problem in more northern, colder climates; however, there are often protected or indoor environments still at risk. At this time, it's unknown where this pest could establish and the speed at which it can be spread.

## Background

The Rugose spiraling whitefly, *Aleurodicus rugioperculatus*, (previously called the gumbo limbo spiraling whitefly) was first identified in 2009 in Miami-Dade County, but has now spread to numerous other south and central counties. Heaviest infestations are currently in Miami-Dade, Monroe and Broward Counties.

Adult whiteflies, in general, tend to resemble tiny white moths that take flight easily, appearing as clouds around foliage. The Rugose spiraling whitefly also resembles a small white moth, but is relatively large in size compared to a more typical whitefly and also tends to be much more sluggish in its movement. Large numbers of adults can still appear to swarm in clouds around foliage like other whiteflies, but also congregate

on the underside of leaves.

## Stages & signs

The immature stages appear as raised ovals, yellow to brown, covered to various degrees with white wax. These immature stages often line up along the mid-vein on the underside of a leaf; however, when populations are high they will be all over the underside of the leaf. The distinctive spiral pattern of eggs is often an early sign that you may have a spiraling whitefly infestation. These white spirals are laid on the underside of leaves and are quite visible. The life cycle of the Rugose spiraling whitefly is 3-4 weeks, but will lengthen with cooler temperatures.

This whitefly has a very broad host range and appears to feed on more than 60 types of plants, including many commonly planted ornamental, palm and fruit species. Some of the most common landscape favorites include gumbo limbo, coconut palm and calophyllum (see list). Like other Hemipteran pests, it has a needle-like mouthpart that it inserts into the plant tissue removing nutrients and water from the plant. Both the adult and immature stages feed on the plant.

Whitefly feeding causes stress to the plant, which can cause the plant to decline, leaves to yellow or fall off the plant depending on the type of plant. Whiteflies also excrete a sticky substance called honeydew, which covers the leaves and surrounding plant and non-plant surfaces. The presence of honeydew promotes the growth of sooty mold. It's often the honeydew and sooty mold that alerts homeowners that there is a problem. The nuisance of this pest is significant due to the extreme amounts of honeydew, white wax and the subsequent growth of sooty mold that will cover and get into everything in the vicinity of an infestation. Actual damage to the plants will vary depending on the type of plant, but can include leaf yellowing, defoliation and overall decline of the plant.

## Prevention & controls

The most important step in management is to monitor plants for whitefly infestations, particularly if you are in an infested area. Look for the spiral egg patterns on the leaves. This is the first sign that you have a building population of this whitefly and it's time to take action. It takes numerous months for the white wax, honeydew and subsequent sooty mold to build up and become a nuisance, so taking early action can prevent the potential mess and damage from this pest. It's easier to manage these pests before they reach high populations where they cause damage or become a severe nuisance. Natural enemies (predatory beetles, lacewings and wasp parasitoids) have been observed attacking Rugose spiraling whiteflies. Protecting natural enemies is a critical component in the long-term control of pests, so when using insecticides it's important to use products and methods that have minimum impact on the beneficial insects.

Buying and releasing additional beneficial insects can be helpful; however, it's extremely important to only use beneficial insects capable of feeding on this particular whitefly and as of right now, there are no really good commercial options. This may change very soon as more information comes forth about this pest and potential beneficial insects. Washing plants off with water can be an effective tool to help manage whiteflies for small infestations or small plants. But, for it to be effective, you must remove the immature stages and eggs from the leaves with the wash. Washing the plants off can also be helpful to remove some of the wax and honeydew, so you're better able to determine the success of your control method.

Using a horticultural oil or insecticidal soap can also help control whiteflies, but these products are strictly contact, so thorough coverage of the infested leaves is required. Typically, several applications are required 7-10 days apart. These types of products can cause damage to plants when used under high temperatures.

If the infestation is heavy, an insecticide may be needed to control the whitefly population and a systemic neonicotinoid insecticide applied to the soil or trunk will provide the longest term control of these whiteflies. There are several active ingredients (acetamiprid, clothianidin, dinotefuran, imidacloprid, and thiamethoxam), formulations and methods of application (drenching, granular applications, basal trunk spray, trunk injection or foliar applications) for this group of insecticides. In addition to the neonicotinoid insecticides, there are numerous insecticides that can be applied to the leaves; however, most products do not provide control beyond several weeks and must be sprayed several times. Additionally, contact with the pest is often essential to get control with foliar sprays, which may be difficult with large trees and the excessive amounts of wax, which could hinder contact. However, foliar sprays can be useful for quick knockdown, which can be important with heavy infestations. It's extremely important to use the appropriate insecticides, methods and timing in order to get the best control with the least amount of detriment to the beneficial insects or the environment.

Once control is achieved, monitor new leaves for the presence of whiteflies, honeydew and wax. Although control is achieved, plant recovery can take time, and the presence of the honeydew and sooty mold can take time to wear off. It's been observed that the white wax does dissipate fairly quickly after control of the whiteflies.

For more information on these whiteflies, go to: http://trec.ifas.ufl.edu/mannion/pdfs/Gumbo%20Limbo%20Spiraling%20Whitefly.pdf. **GT**

## Plants that are hosts for spiraling whiteflies

(Listed by species name in alphabetical order). Please note that this is an ever-changing list from the state of Florida, which confirms when a plant is considered a host. *Source: Florida Department of Agriculture and Consumer Services, Division of Plant Industry*

*Acalypha wilkesiana*
*Adonidia merrillii*
*Annona sp.*
*Araucaria heterophylla*
*Brassica rapa*
*Bucida buceras*
*Bursera simaruba*
*Calophyllum inophyllum*
*Catharanthus roseus*
*Chrysobalanus icaco*
*Chrysophyllum oliviforme*
*Cocos nucifera*
*Coccothrinax sp.*
*Conocarpus erectus*
*Cordyline fructicosa*
*Dictyosperma album*

*Dypsis decaryi*
*Dypsis lutescens*
*Eugenia axillaris*
*Eugenia sp.*
*Eugenia uniflora*
*Ficus aurea*
*Ficus carica*
*Hyophorbe verschaffeltii*
*Mangifera indica*
*Manilkara roxburghiana*
*Manilkara zapota*
*Musa sp.*
*Myrcianthes fragrans*
*Myrica cerifera*
*Parthenocissus quinquefolia*
*Persea americana*
*Phoenix roebelenii*
*Pinanga coronata*
*Pithecellobium keyense*
*Psidium guajava*
*Quercus virginiana*
*Rosa sp.*
*Sabal palmetto*
*Sagittaria latifolia*
*Schinus terebinthifolius*
*Sideroxylon foetidissimum*
*Sideroxylon salicifolium*
*Simarouba glauca*
*Smilax auriculata*
*Spondias mombin*
*Spondias purpurea*
*Spondias sp.*
*Strelitzia nicolai*
*Strelitzia reginae*
*Syzygium cumini*
*Terminalia catappa*
*Thespesia populnea*
*Veitchia arecina*
*Veitchia sp.*
*Washingtonia robusta*
*Wodyetia bifurcata*
*Zeuxine strateumatica*

---

*Dr. Catharine Mannion is associate professor and extension specialist at the University of Florida, IFAS, Tropical Research and Education Center in Homestead, Florida.*