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**CARIBBEAN FOOD
CROPS SOCIETY**

47

**Forty-Seventh
Annual Meeting 2011**

**Bridgetown, Barbados
Volume XLVII – Number 1
T-STAR Invasive Species Symposium**

PROCEEDINGS
OF THE
47th ANNUAL MEETING

Caribbean Food Crops Society
47th Annual Meeting
July 3–8, 2011

Lloyd Erskine Sandiford Centre
Bridgetown, Barbados

“Assuring Caribbean food and nutrition security in the context of climate change”

**United States Department of Agriculture,
T-STAR Sponsored Invasive Species Symposium**

**Toward a Collective Safeguarding System for the Greater Caribbean Region:
Assessing Accomplishments since the first Symposium in Grenada (2003)
and Coping with Current Threats to the Region**

**Special Symposium Edition
Edited by
Edward A. Evans, Carlton G. Davis, and Fredy Ballen**

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INVASIVE SCALES AND WHITEFLIES IN THE LANDSCAPE—A SERIOUS THREAT TO THE TOURIST INDUSTRY

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Value of the Landscape

- Provides the fundamental support system for life on earth
- Supports human physical and social needs
- Tied closely to human emotion
- Have the capacity to enhance and regenerate natural benefits and services
- Thus, can affect all aspects of life

The Landscape A Reservoir of Pests



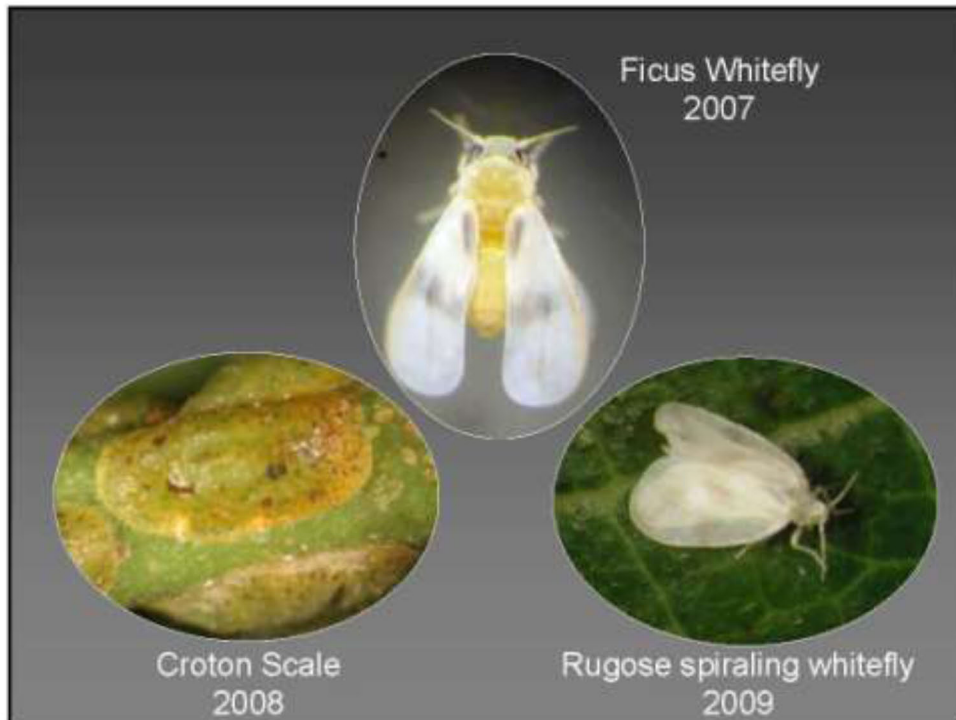
Diversity of host material and habitat make the landscape an ideal place for new pest establishment

Challenges in Invasive Pests in the Landscape

- Detection and identification
- Management strategies for the landscape
- Dealing with everyone from the homeowner to the grounds keeper or landscape manager to the politician
- Attention to high risk pests but little or no reaction to lower risk pests.

Impact of “Lower Risk” Pests

- Risk of spreading into production areas and moved to new area
- High visual or local impact
- Public, press and politic pressure
- Yet, not considered national risk (lack of funding or resources)
- Could be more problematic in isolated areas
- Reliance on pesticides



Ficus Whitefly

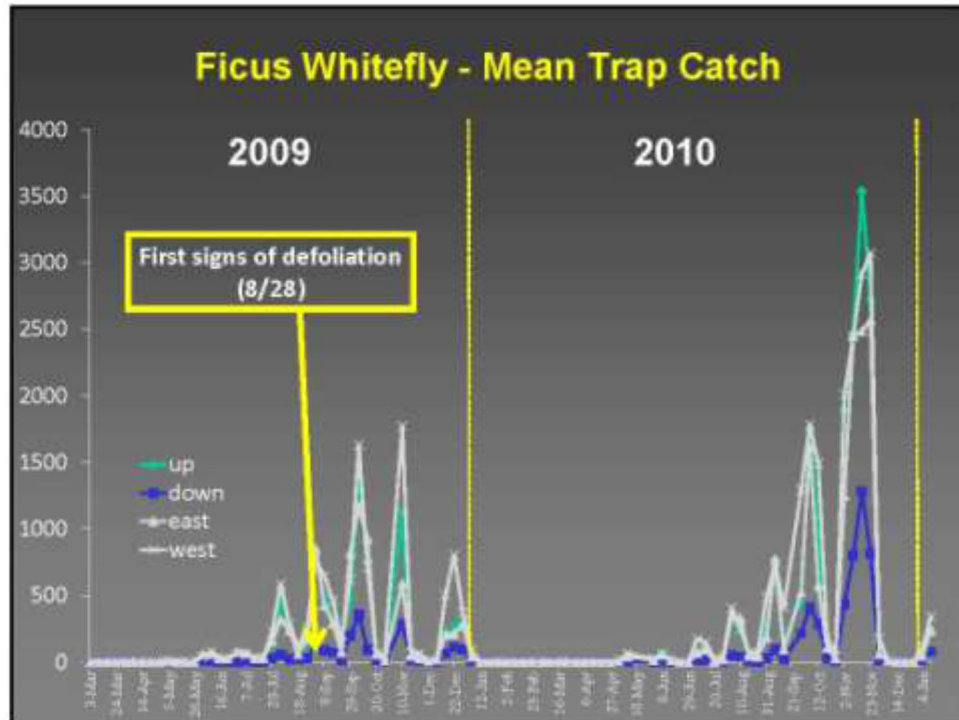
Singhiella simplex (Hemiptera: Aleyrodidae)

- Only feeds on ficus species
- Currently in several south and central Florida Counties; some areas of Caribbean
- Causes leaf yellowing; leaf drop and branch dieback



The composite image on the right side of the slide contains three photographs. The largest one shows a dense green hedge with a whitefly on a leaf. A smaller inset shows a close-up of a whitefly with its wings spread. Another inset shows a single leaf with distinct yellowing along the veins.







Rugose Spiraling Whitefly *Aleurodicus rugioeperculatus*

- First found in Miami on *Bursera simaruba* Spring 2009
- Known from Belize, Guatemala and Mexico
- Eggs are in a spiral pattern
- Adult is relatively large and docile

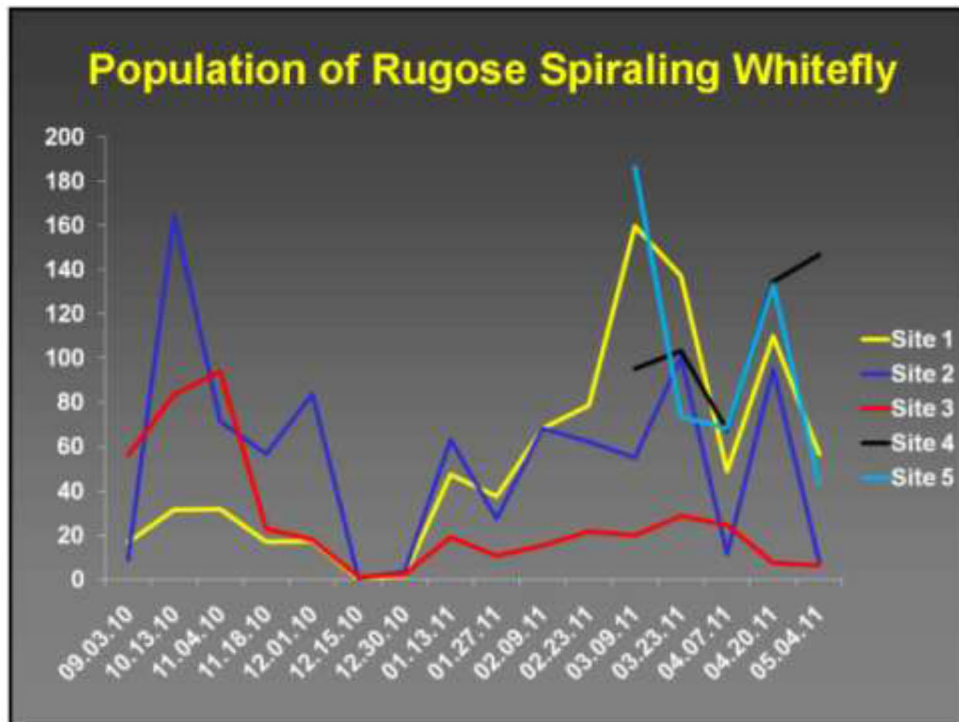


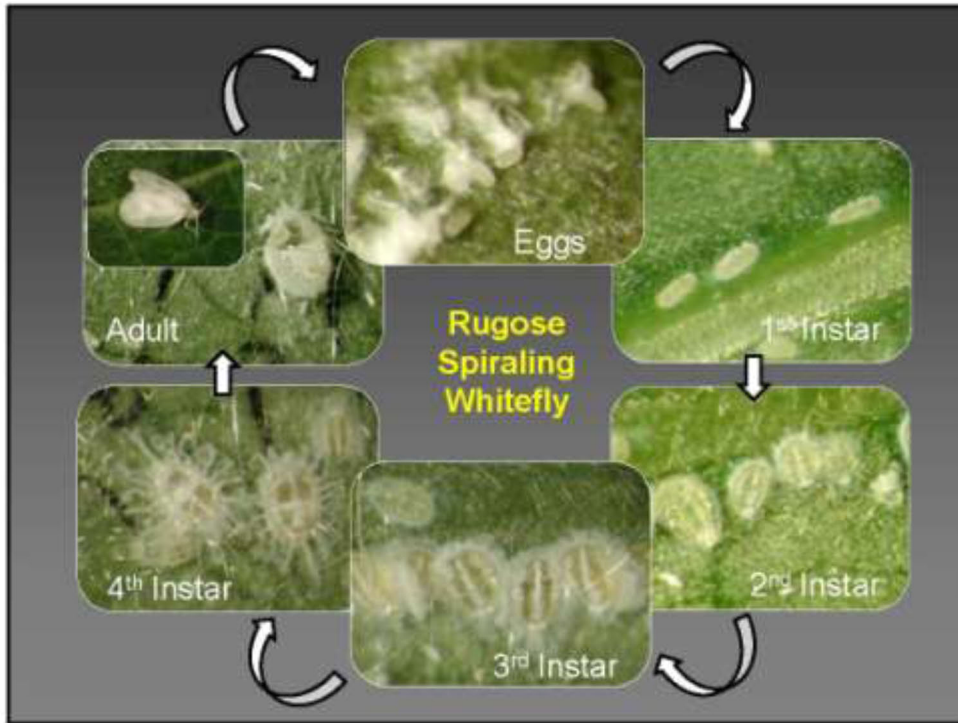
Plants Hosts

- *Acalypha wilkesiana* (Copperleaf)
- *Annona* sp. (Sugarapple)
- *Araucaria heterophylla* (Norfolk island pine)
- *Bucida buceras* (Black olive)
- *Bursera simaruba* (Gumbo limbo)
- *Calophyllum* species
- *Catharanthus roseus* (Madagascar periwinkle)
- *Chrysobalanus icaco* (Cocoplum)
- *Chrysophyllum oliviforme* (Satinleaf)
- *Cocos nucifera* (Coconut palm)
- *Conocarpus erectus* (Buttonwood)
- *Cordyline fruticosa* (Hawaiian ti)
- *Dictyosperma album* (Hurricane palm)
- *Dypsis lutescens* (Areca palm)
- *Eugenia* spp.
- *Ficus aurea* (Strangler fig)
- *Ficus carica* (Edible fig)
- *Hyophorbe verschaffeltii* (Spindle palm)
- *Mangifera indica* (Mango)
- *Manilkara roxburghiana*
- *Myrica cerifera* (Wax myrtle)
- *Musa* sp. (Banana)
- *Parthenocissus quinquefolia* (Virginia creeper)
- *Persea americana* (Avocado)
- *Phoenix roebelenii* (Pigmy palm)
- *Quercus virginiana* (Live oak)
- *Sabal palmetto* (Sabai palm)
- *Schinus terebinthifolius* (Brazilian pepper)
- *Simarouba glauca*
- *Smilax auriculata*
- *Spondias* sp.
- *Spondias purpurea*
- *Strelitzia nicolai* (White bird of paradise)
- *Strelitzia reginae* (Bird of paradise)
- *Tabebuia* species
- *Terminalia catappa* (Tropical almond)
- *Veitchia* species
- *Washingtonia* palm
- *Zeuxine strateumatica*

And, the list continues to grow







Croton Scale (Hemiptera: Coccidae)

- 2008 - Reported in Florida; new to science
- Hosts – Numerous hosts; many native plants in Florida
- Damage - Can build up to high densities on some hosts; plant decline

The block contains five photographs of Croton Scale. One shows a single scale on a stem. Another shows a cluster of scales on a leaf. The other three show individual scales on stems at different angles.

Damage

- Plant decline; leaf drop
- Excessive amount of honeydew and sooty mold






Photo: C. Mannion, UF/IFAS Photo: D. Caldwell, UF/IFAS, Collier Co. Ext.

Photos: G. Hodges, DP/IFDOACS

Development on Croton

	Mean Days (\pm SD)	
First	12.6 ± 0.6	
	Male	Female
Second	10.4 ± 1.3	11.6 ± 0.89
Third	3.9 ± 0.8	6.9 ± 0.97
Fourth	2.8 ± 0.8	
Adult (cumulative)	29.7 ± 1.9	31.1 ± 2.1

Pests in the Landscape

- Development and sharing of information and resources for more localized problems
- Promote education and biologically-based management
- Pay attention to pests that are currently "under the radar"