

Good Bug, Bad Bug?

Lauren Diepenbrock
UF/IFAS Citrus Research and Education Center
June 28, 2023



CITRUS IN THE
HOME LANDSCAPE

Take home messages

- Signs of insects can be tricky for diagnosing what pest you are dealing with
- In addition to the pest insects, we have a diversity of good, predatory insects in Florida to be aware of

Outline

- Images submitted to our team
- Review of key insect/arthropod pests for this study
- Recognizing common predatory bugs

Images submitted to our team

- Many insects and mites affect tree health and identification is key to management
- Some of these images are from our MGV collaborators, others from our homecitrus@ifas.ufl.edu email

Rule: if you submitted, don't tell the answer 😊

Submitted Image 1



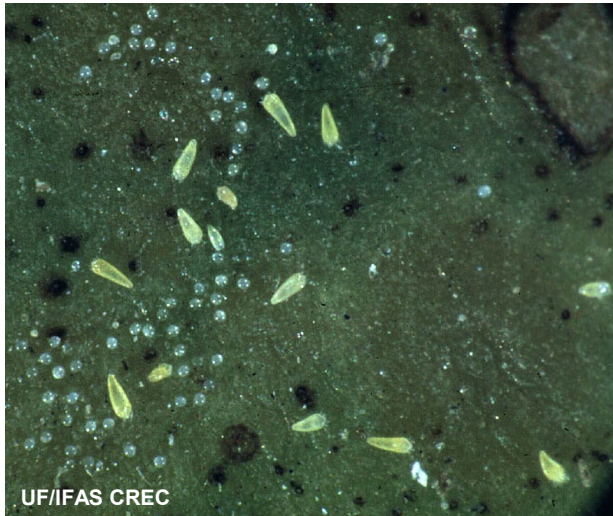
Spider mites

- Signs: webbing, yellow spotting on upper surface of leaves
- Management:
 - Water up into canopy to dislodge
 - Horticultural oil to smother



Rust mites

- Signs:
 - Leaves- distortion of new growth, brown lesions on lower surfaces, chlorosis
 - Fruit- bronzing or sharkskin appearance of fruit skin
- Management:
 - Horticultural oil to smother when populations are high (warm & dry conditions)



Submitted Image 2



Citrus Blackfly

- Signs: dark “spots” under leaves, sometimes discoloration on top of leaf, sooty mold
- Management: generally controlled by parasitoids and/or predators, if not entomopathogenic fungi can help



Submitted Image 3

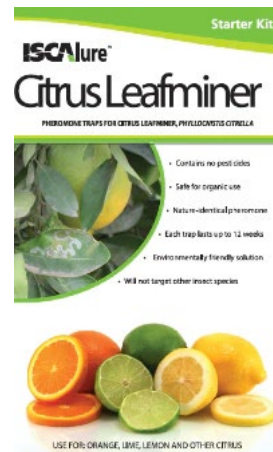
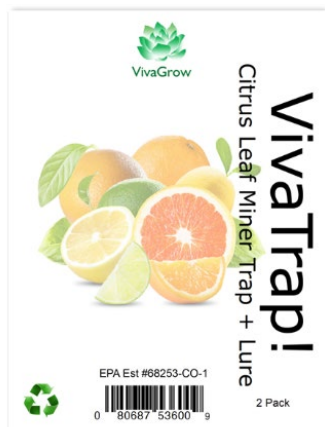


Powered by  **Poll Everywhere**

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

Citrus leafminer

- Signs: leaves wrinkled, upper surfaces discolored, mines are normally easily visible if you flip the leaf over and look at the lower surface
 - If pressure is high, then mines will be visible on both lower and upper surfaces
- Management: for gardens, the most effective tool is a trap with sex pheromone bait to reduce infestation
 - Parasitoid activity is rare (next slide)
 - Imidacloprid drench can help keep population down, follow the label!



Citrus leafminer parasitoid

Ageniaspis citricola: Imported into Florida from Australia in 1994



BEFORE intense ACP management, parasitism rates up to 86% were observed late in the season.

NOW-?

Submitted Image 4



Powered by  **Poll Everywhere**

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

Sooty mold- not an insect, but...

- Sooty mold is often a sign that you have a pest producing honeydew above the sooty mold, so look up and you might see:
 - Scales
 - Mealybugs
 - Aphids
 - Asian citrus psyllid
 - Plant hoppers
 - Whitefly
 - Citrus blackfly



Submitted Image 5



Unknown plant hopper molting

- Could be one of many plant hoppers we see in Florida
- Plant hoppers have incomplete metamorphosis where they molt between life stages

Examples:



Membracid tree hopper nymph
Image submitted to Noah
Project



Sharpshooter molting
Image from UF IFAS Featured
Creatures: sharpshooters,
leafhoppers

Submitted Image 6



Chewing damage

- Could be caterpillar, weevil, grasshopper, or katydid damage



Submitted Image 7



Orangedog caterpillar

- Look like bird poop, especially in younger stages
- Head capsule takes on snake like appearance with age
- Adult is the Giant Swallowtail
- Can defoliate young trees



Submitted Image 8



Leafroller Caterpillar

- Not host specific- will eat almost any plant the egg is laid on
- Small caterpillars spin webs between leaves and consume new foliage in their protected space
- Can be damaging for plant growth
- Best managed via manual removal or application of Bt
 - Caterpillar eats leaves with Bt on them, once ingested they become active in the gut of the insect to kill from the inside out
 - Targeted management- will not harm mammal, Bt kurstaki is targeted for caterpillars and highly effective

Submitted Image 9



Wasp

- GREAT generalist predator
- Let it be, it will eat pests



Submitted Image 10



Fern Scale

- We have several scales that look similar at this life stage, the most common are Fern Scale and Snow Scale
 - Fern Scale = prefers leaves and fruit
 - Snow Scale = prefers the trunk
- Low density= not generally a problem
- High density= will need to be treated

Submitted Image 11



Purple Scale

- Historically a major pest of fruit, leaves, and twigs, less so in more recent decades
- Populations tend to be highest in last spring/early summer
- Parasitic wasp, *Aphytis lepidosaphes*, was introduced in the 1950s and is still found contributing to the management of this pest
- Additional management: if you find a small population on a few trees, hand removal is pretty easy



Outline

- Images submitted to our team
- Review of key insect/arthropod pests for this study
- Recognizing common predatory bugs

What arthropod pest is this?



S. Vitanza, Bugguide.net

What arthropod pest is this?



What arthropod pest is this?



Outline

- Images submitted to our team
- Review of key insect/arthropod pests for this study
- Recognizing common predatory bugs

Lady beetles/ladybugs

- Generalist predators- adults

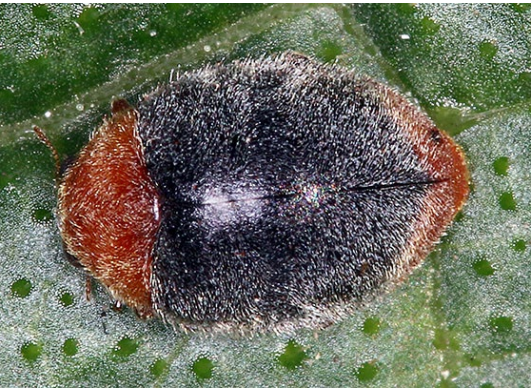


- Generalist predators- juveniles



Lady beetles/ladybugs

- Specialist predators- adults



- Specialist predators- juveniles



Other beetles

- Carabidae, “ground” beetles



Bombardier beetle



Tiger beetle



Caterpillar hunter



No common name-
ground beetle

Piercing/sucking predatory insects



Spined soldier bug



Minute pirate bug



Nabid

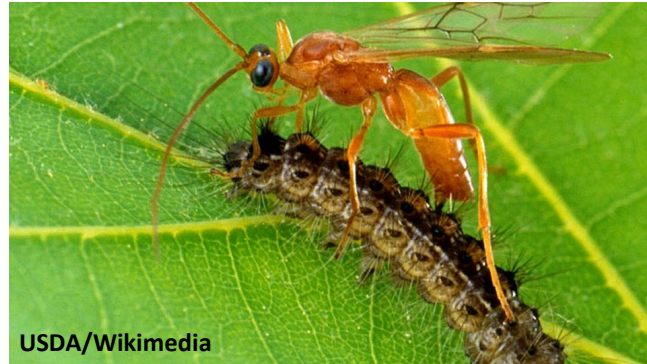


Assassin bugs (non-specific name)

Parasitoid wasps



Tamarixia radiata



Braconid wasp attacking
spongy moth caterpillar



Whitefly parasitoid



Long-tailed giant
ichneumon



Alex Wild



© Hans Smid

Any questions?

Thank you!



CITRUS IN THE
HOME LANDSCAPE