

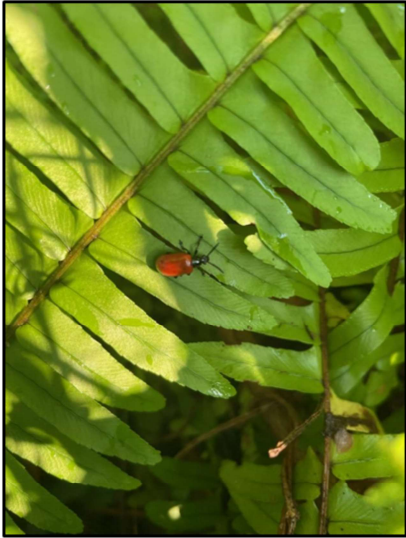
Nicole Pinson

Garden Manager, Tampa Family Health Centers
UF/IFAS Extension Master Gardener Volunteer

Questions? Email me at npinson@hcnetwork.org



Garden Insects



Credits: Nicole Pinson, Tampa Family Health Centers

Insects belong to the overarching group of Arthropods – jointed legs (includes ticks, insects, crustaceans, spiders, & mites)

Insects – 3 segments, 1 antennae, 6 legs, wings

Mites – 2 body regions, no antennae, 4 legs, no wings

Undergo complete or incomplete metamorphosis

Overall, ~ 1% of insects are pests – pests may injure plants, cause damage, vector disease, decrease yields

99% are considered beneficial, harmless or they co-exist

Insects are an important part of the food chain

For vegetables, you can get 10-20% loss without affecting yields

Encourage beneficial insects: Leave bare soil, create a healthy environment, include pollinator-attracting flowers, let veggies and herbs flower and go to seed, decrease or target use of pesticides, use least toxic pesticides (such as Bt, insecticidal soap, and horticultural oils), try handpicking with a container of soapy water

This is a great publication about natural solutions for pest control:

<https://edis.ifas.ufl.edu/publication/IN197>

To determine pest, look at damage

Chewing – beetles, caterpillars, grasshoppers, tomato pinworm, weevils

Piercing/sucking – aphids, whiteflies, psyllids, inject toxins, stippling, distorted fruit, disease vectors

Left – Air Potato Leaf Beetle – considered beneficial

<https://gardeningolutions.ifas.ufl.edu/care/weeds-and-invasive-plants/air-potato.html>

Right – Scoliid Wasp – male 13 segmented antennae > female 12; male 7 segmented abdomen >

female 6

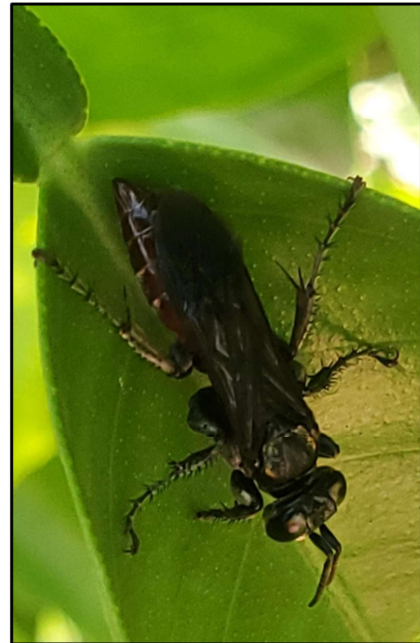
Irregular figure 8 pattern

This is a Caribbean Scoliid Wasp *Dielis dorsata* – in our part of the state, but no specimens yet at UF;
neat find at the Tampa Family Health Centers garden

Considered beneficial – parasitizes scarab beetle grubs

https://entnemdept.ufl.edu/creatures/misc/wasps/scoliid_wasps.htm

Garden Insects



Credits: Nicole Pinson, Tampa Family Health Centers

Left – Syrphid fly

Meromacrus acutas

<https://biogator.org/imagelib/search.php?taxa=25340&usetes=1&taxontype=2&submitaction=search>

This is a fly, not a wasp!

Larvae develop in tree holes

Adults mimic wasps

Not beneficial

Not harmful

Right – Larra wasp

Larra bicolor

Very helpful – this wasp kills mole crickets; they do not sting people unless handled

Mole crickets are a pest that feeds on grass and some crops

mole crickets and larra wasps – <https://sfyl.ifas.ufl.edu/lawn-and-garden/mole-crickets/>

You can plant/transplant the tiny flower Larraflower to your yard/garden to encourage larra wasps

Larraflowers have small white flowers; plants can often be found in weedy or uncultivated areas, such as along roads and sidewalks

See this link for photos of the larraflower: <https://florida.plantatlas.usf.edu/photo.aspx?!ID=2001>

Fun fact: Each generation of *Larra* wasps kills about twenty-five percent of the local mole cricket population--and there are three generations of wasps per year, compared to one generation of mole crickets.

Garden Insects



Credit: Paul Choate, University of Florida



Credits: James Castner, University of Florida



Lacewings

You can ID the larva of a green or brown lacewing by how they move on the plant
Brown lacewing larvae jerk and wiggle their heads side to side and from left to right
Egg not on stalk

Green lacewing

Spiky hairs, mandibles

Orient head forward in direction they're moving

Called "aphid lions"

AKA trash bug, junk bugs, garbage bugs

Well camouflaged, cover bodies with carcasses of their victims!, also cover their bodies with sand, lichens and debris

Eggs laid on thin stalks

Eat aphids, caterpillars, mites, insect eggs, scales, mealybugs, lacebugs

Anecdotally, I see them at night near patio lights

Adult lacewings detect sound waves like eardrums

They hear echolocation signals from bats and will close their wings in mid-flight, dropping quickly to the ground to avoid predation. Some species seem to use vibrations to communicate with each other – especially during courtship.

Look for ants! Ants are a problem in the garden and they may indicate the presence of pests such as aphids or mealybugs

Ants guard aphids, collect their waste called "honeydew", and protect the aphids

Aphids give off an odor to nearby ants when attacked

But a lacewing remains safe under its trash bug disguise while it eats aphids!

Read more about the amazing lacewing at this link:

<https://www.uaex.uada.edu/environment-nature/anr-blog/posts/whats-that-bug-green-lacewing-larvae.aspx>

Garden Insects



Credit: Marina Young, RADA, Jamaica



Credit: Delano Lewis, University of Florida

Lime swallowtail

Be on the lookout

This butterfly may be controversial among gardeners/butterfly gardeners who don't believe it's a pest

FDACS would like you to contact them if found

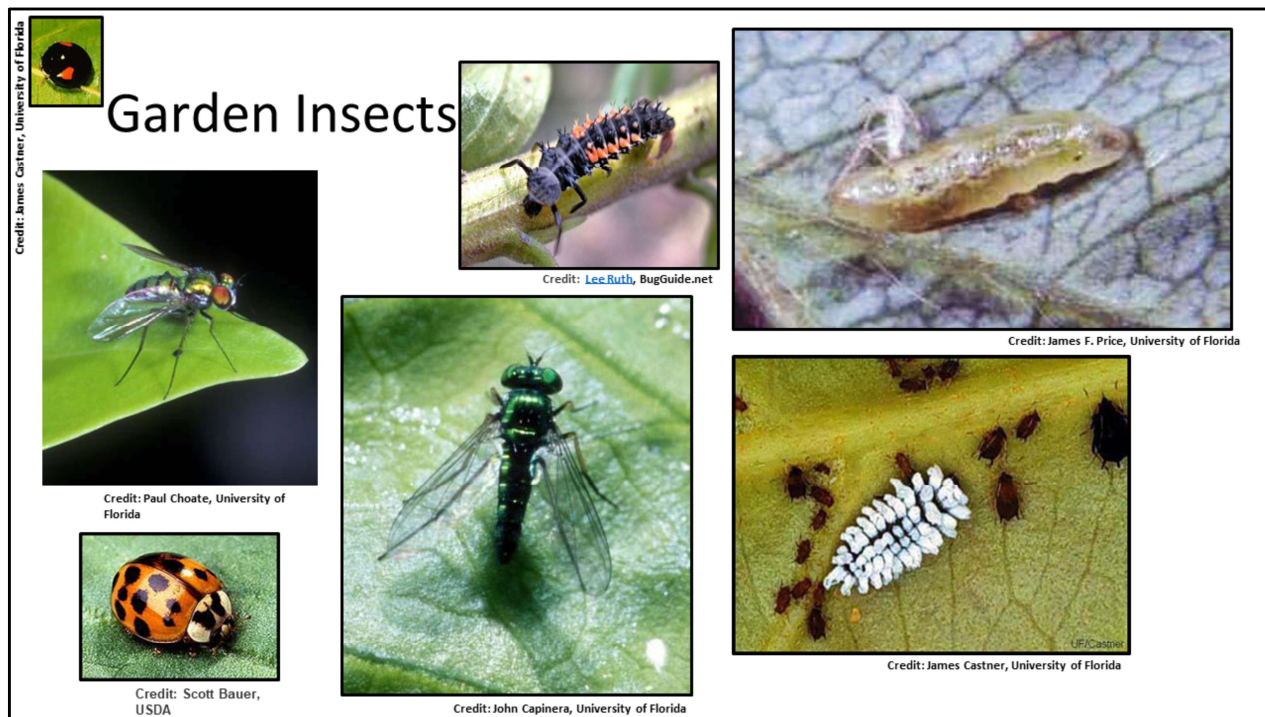
From Caribbean, Middle East, China, Jamaica

Found in Key West

said to "threaten native butterflies"

Soapy water

Read more about this butterfly and the pest alert at <https://www.fdacs.gov/Agriculture-Industry/Pests-and-Diseases/Plant-Pests-and-Diseases/Lime-Swallowtail-Citrus-Pest>



Left and middle – Long-legged flies – green, blue, or yellow, considered beneficial/helpful in the garden

Eat pests such as flies, thrips, aphids, spider mites, springtails, leafhoppers, whiteflies, small caterpillars, and even termites

Flies have sponging mouthparts, saliva liquefies food and the sponge absorbs food

Left (adult ladybeetles), middle top (ladybeetle larva) and bottom right (mealybug destroyer ladybeetle larva which turns into a black ladybeetle)

Ladybeetles – 105 species in FL

Also eat aphids, mealybugs, mildews, mites, scales, whiteflies, thrips, small caterpillars, beetle grubs, insect and mite eggs

Neat fact: Ladybeetles feed on flowers, nectar, water, & honeydew if prey is scarce!

Convergent ladybeetle larva eats ~ 30 – 50 aphids/day

7 spotted ladybeetle larva eats ~ 200 – 300 aphids/day

Syrphid (hover) flies, larva (top right) – eat aphids, look like bees or wasps when adults but are non-stinging flies

Adults eat nectar and are good pollinators

These larvae are cool if you're lucky enough to find them in your garden

Check under leaves, flip leaves, scout, look around frequently to find insects and see their life cycles

Sometimes, you will see bees in the garden

We have many native bees

Bees may be identified by their sounds, location of pollen baskets (if they have one), body shape,

and pollen collecting hairs

For example:

Green orchid bee – pollen basket on hind legs, wide/robust body

https://entnemdept.ufl.edu/creatures/MISC/BEES/green_orchid_bee.htm

Green sweat bee – pollen collecting hairs

<https://edis.ifas.ufl.edu/publication/IN897>

If you have a rosebush, you may see evidence of circular holes cut into the leaf

This is ok, and likely a leafcutter bee

These bees cut round segments of leaves used to line their nest cells – see this publication for a photo of rose leaves and nest

https://entnemdept.ufl.edu/creatures/misc/bees/leafcutting_bees.htm

Florida Bee Gardens website: <https://ffl.ifas.ufl.edu/bees/>

Spiders – considered beneficial

<https://edis.ifas.ufl.edu/publication/IN1366>

Predaceous mites – eat pest mites, thrips, insect eggs

Helpful Links:

UF/IFAS Featured Creatures

<https://entnemdept.ufl.edu/creatures/>

Central Florida Critter of the Day

<https://centralfloridacritteroftheday.wordpress.com/>

NC State Extension Gardener Handbook - the entire handbook is online for free

<https://content.ces.ncsu.edu/extension-gardener-handbook>

Local County Extension Office

<https://sfyl.ifas.ufl.edu/find-your-local-office/>

Thank you!

Check out these great resources to learn more about gardening and insects

Helpful Links:

UF/IFAS Insect ID Lab

<https://entnemdept.ufl.edu/insectid/>

UF/IFAS Distance Diagnostic and Identification System (DDIS) - Homeowners can create an account and submit photos and questions for free, but don't forget to contact your county Extension office first

<https://ddis.ifas.ufl.edu/>

University of Arkansas Video of lacewing eating an aphid - scroll to bottom of webpage

<https://www.uaex.uada.edu/environment-nature/anr-blog/posts/whats-that-bug-green-lacewing-larvae.aspx>

FL Medical Entomology Laboratory - Mosquito Research - Eva Buckner, Faculty - scroll to bottom of page for topic links or click on "Extension" drop-down <https://fmel.ifas.ufl.edu/>

Check out these great resources to learn more about gardening and insects