Practical Pest Management in Florida Peaches

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Objectives

1. Provide recommendations for several key pests
    1. Biology and impact
    2. How to identify
    3. How to monitor
    4. How to manage
2. Highlight available resources
3. Demonstrate traps in the field

Key Pests

Direct pests- attack the fruit

- Stink bugs
- Caribbean Fruit Fly
- Plum Curculio

Indirect pests – attack the tree

- Scales
- Peachtree borers
- Mites

Photos: Cory Penca

“Stink Bugs”

Brown stink bug

Leaf-footed bug

Photos: Cory Penca

Stink Bugs

Biology and Impact

- Piercing-sucking feeders
- In the Spring they come from outside the orchard
- Even low numbers can cause losses

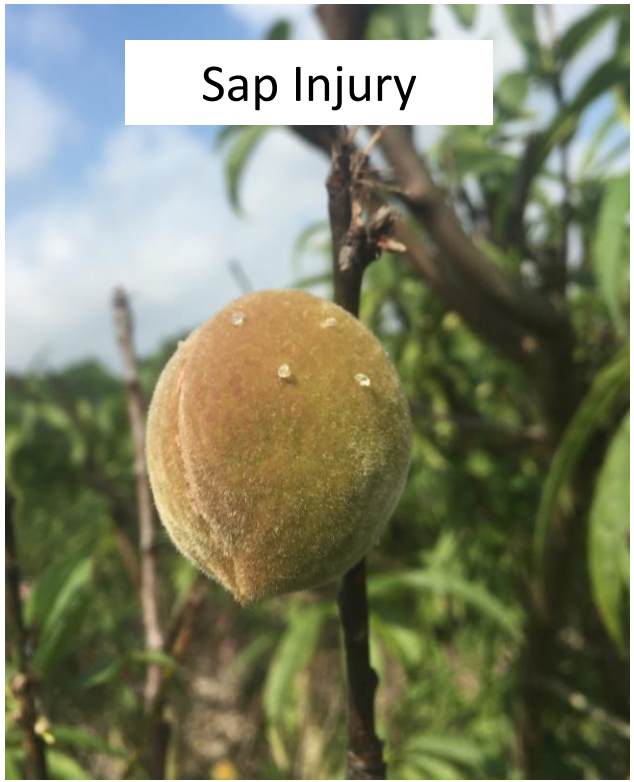

Photo: Cory Penca

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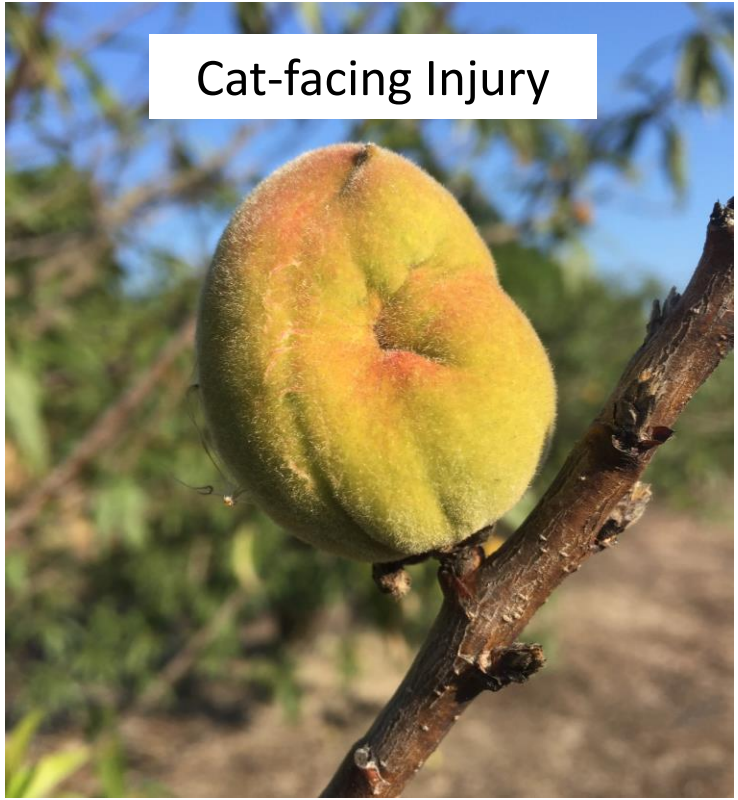


Photo: Cory Penca

Stink Bugs

How to monitor

- Traps
- Look for damage
- ~~Look for bugs~~

Photo: Cory Penca

Stink Bugs

How to monitor

- Traps
- Look for damage
- ~~Look for bugs~~
  - Bugs may not be active depending on time of day
  - Hard to detect low populations
  - May lead to incorrect population estimates

Photo: Cory Penca

Stink Bugs

How to manage

- Protect fruit early, at shuck split
- Use mixes of neonicotinoids+pyrethroids, not pyrethroids alone
- Use Imidan for first spray, and 14 days before harvest, has good residual activity

Stink Bugs

How to manage

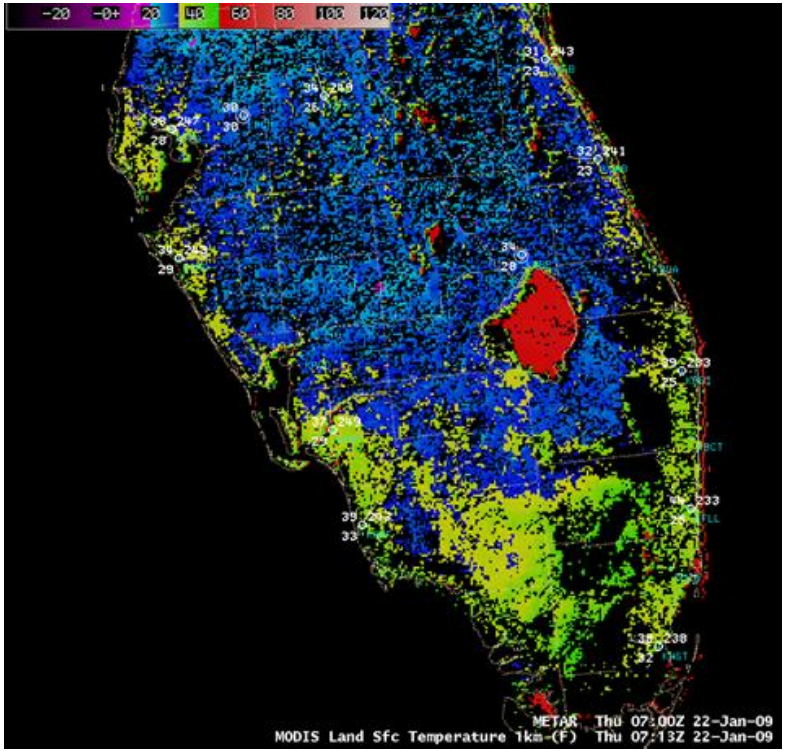
- Weed control makes orchard less attractive*
- Control early (at shuck split)
- More sprays may not always help

Site	Mean % Injury ± SE	"Broad spectrum" sprays
Fort Pierce 2	11.98 ± 0.87	7
Fort Pierce 1	9.99 ± 0.91	9
Lake County 1 (organic)	7.19 ± 1.1	0
Polk County 1	3.21 ± 0.56	4

Caribbean fruit fly

Biology and impact

- Populations build towards the end of harvest (May)
- Survives winter in warmer areas
- Problematic on ripening fruit
- U-pick operations at higher risk risk
- FDACS export certification program available



Caribbean fruit fly

How to identify

- Adults about the size of a housefly (~1/3 inch)
- Wings with amber and clear bands
- Orange/brown body

Photo: Lyle Buss, UF

Caribbean fruit fly

How to identify

- Egg laying will result in sap/gummosis from fruit
- Larvae feed inside the flesh, create soft spots

Photo: Agriculture Victoria

Caribbean fruit fly

How to monitor

- Several trap designs available
- Use torula yeast as bait
- Ignore other small flies
- FDACS conducts monitoring for certification program

Photo: Cory Penca

Caribbean fruit fly

Photo: Cory Penca

Caribbean fruit fly

How to manage

- Generally only a problem during harvest when fruit is soft
- Low PHI is needed
- GF-120 is the best control option
  - Organic pesticide (spinosad) combined with a lure
  - Only need to spray if detected
  - Can also use NuLure + Malathion
- Reducing hosts near orchard
  - Loquat, Suriname Cherry, Guava

Photo: UF/IFAS Gardening Solutions

Caribbean fruit fly

How to manage

- When using GF-120 or other bait spray
  - Large droplet needed (4-6mm)
  - Complete coverage is not needed
  - Always follow the label

Plum Curculio

Photos: John Maxwell, bugguide.net (left), Clemson University, bugguide.net (right)

Plum Curculio

Biology and Impact

- Considered the worst direct pest in the southeast
- Adults damage fruit when laying eggs
- Damaged fruit will drop
- Does not seem abundant in South Florida

Photo: Ontario Ministry of Agriculture, Food and Rural Affairs

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Photo: Illinois Fruit and Vegetable News, Ipm.Illinois.edu

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Proceedings of the FSHS - 1896

H. G. Hubbard: The plum curculio does not exist in the peninsula of Florida, so it can not be attributed to the curculio.

Mr. Hubbard: We have a dozen species of curculio in the peninsula of Florida, and they grow on the wild fruits and nuts, attack our wild plums, and it is probable some of that species are learning to attack this kind of fruit, but as yet the Northern plum curculio, which devotes its attention to the plum, does not appear at all in the peninsula.

Plum Curculio

Monitoring

- Black pyramid traps
- Trunk Traps
- Look for signs of damage

Photo: R. Boozer, Alabama Cooperative Extension System

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Photo: Cory Penca (UF)

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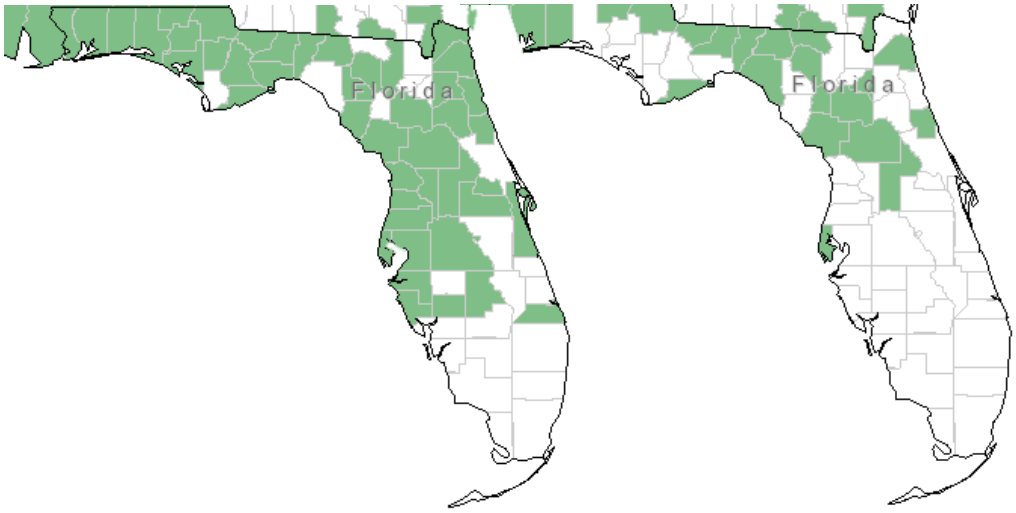
Plum Curculio

Management

- Focus on developing fruit
- Similar to stink bug management
- May not be a concern
  - Are native plums in your area?

Wild Plum Range (estimates)



Prunus umbellata *Prunus angustifolia*

Scale Pests

Biology and impact

- Armored scales are hard to kill due to their protective waxy covering
- Rapidly reproduce
- Can weaken and kill entire trees
- Pesticide use can increase scale problems by killing their predators

Damage to peach. Jonas Janner Hamann, Universidade Federal de Santa Maria (UFSM), Bugwood.org

Scale Pests

Photo: Cory Penca (UF)

Scale Pests

White Peach Scale

San Jose Scale

Photos: Lyle Buss, UF

Scale Pests

San Jose Scale on Fruit – Notice white speck in center of lesion

Peach Scab – A disease

Photos: Bugwood.org

Scale Pests

How to monitor

- Easy to miss at low levels
- San Jose Scale will appear rough and “warty”
- White peach scale appears snowy
- Often start under branches and interior crotches
- Monitor for crawlers with sticky tape

Photo: Cory Penca (UF)

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Photo: Bugwood.org

Scale pests

How to manage

- Adults are protected from most pesticides
- Use 2 Dormant superior oil sprays per year
    - Be careful regarding temperature
- IGRs like Knack and Esteem are effective but expensive
- Achieve good coverage - slow tractor speeds
- Conserve natural enemies to avoid outbreaks

Peachtree borers

Biology and impact

- A moth species whose caterpillar feeds on wood
- Target wounds and will return to old feeding sites
- Lead to limb die-off and possible tree death
- Prevention is key

Photo: Richard Buckley , Rutgers

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Photo: Eugene Nelson, Bugwood.org

Peachtree borers

Peach tree borer

Synanthedon exitiosa

Lesser peachtree borer

Synanthedon pictipes

Photos: Scott Ditzel, bugguide.net (left), Ken Childs, bugguide.net (right)

Peachtree borers

How to monitor

- Pheromone traps available
- Look for damaged trees – gummosis
- Look for pupal casings

Scentry wing trap

Photo: Robert Morris, xtremehorticulture.blogspot.com

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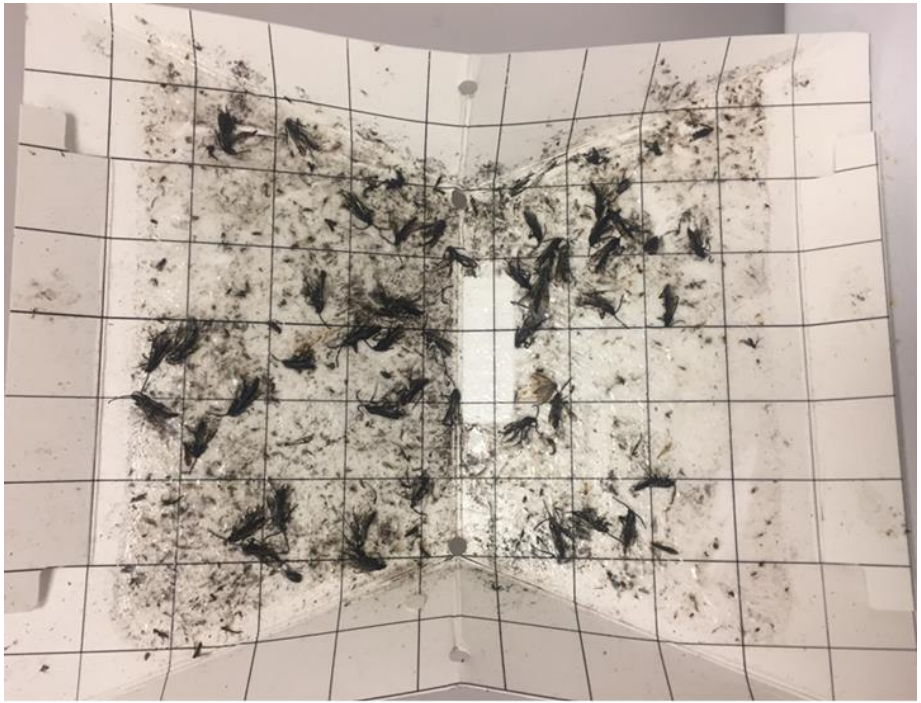

Lesser peach tree borers collected from a trap in Polk County, Florida.

Photo: Cory Penca (UF)

Peachtree borer

Photo: Cory Penca (UF)

Peachtree borer

Look for sap (gummosis), but also “frass”, which will look like a gooey aggregation of pellets. This is produced by the lavae and means the site is active

Photo: Cory Penca (UF)

Peachtree borer

Pupal casings of recently emerged peach tree borers means you have an infestation. Pupal casings can be used to monitor infestation intensity between seasons.

Photo: Cory Penca (UF)

Peachtree borers

Managment

- February to May – Pest applications for other pests help control. High rates needed.
- May to October – Trunk sprays of Lorsban
- Protect trees after pruning
- Non-chemical methods under evaluation
- Activity and range in Florida under investigation

Pheromone dispenser for mating disruption

Mites

Biology and impact

- Extremely small, related to spiders
- Prefer warm/dry conditions
- Cause “bronzing”
- Excessive damage can lead to defoliation
- Defoliation increases sunburn on branches, leading to limb dieback

Photo: James Castner, UF

Mites

How to identify

- Need a magnifying loop
- Adult mites appear as single body segment with 8 legs
- Two-spotted spider mite has two spots

Photo: James Castner ,UF

Mites

How to monitor

- Be vigilant during dry periods, especially around harvest
- Inspect underside of leaves
- Look for webbing
- Look for leaf bronzing

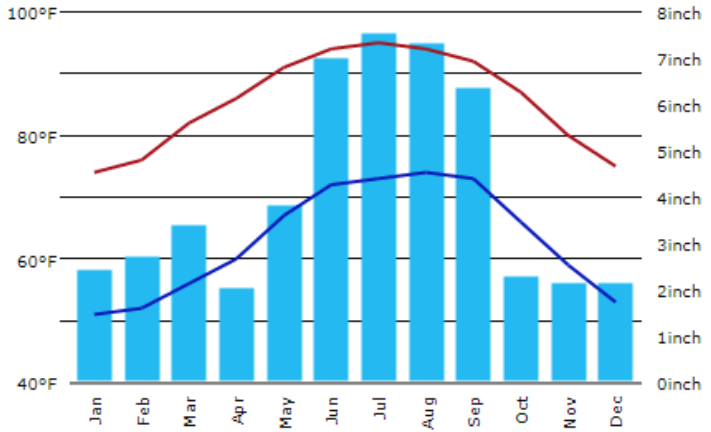

Photo: Cory Penca (UF)

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Mites

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Mites

How to manage

- Peach can tolerate moderate infestations
- Natural enemies can provide some control
- Humidity and rainfall will help
- Use pesticides if defoliation is a concern

Mites

Pesticides

- Refer to the SE Spray Guide
  - Acramite 50ws has 3 day PHI, very effective but may cause inking. Unstable at high pH (concern in Florida)
  - Danitol has 3 day PHI, moderate efficacy on mites
- Important considerations
  - Late spring, before rainy season, is the “danger zone”
  - Pesticide sprays near harvest may kill natural enemies of mites
  - If spraying during harvest, consider PHI and inking concerns

Available Resources

Southeastern Spray Guide

https://secure.caes.uga.edu/extension/publications/files/pdf/B%201171_10.PDF

Best source of information available, however may not always apply to Florida

Available Resources

EDIS Publications,

Insect Management in Peach:http://edis.ifas.ufl.edu/ig075

White peach scale: http://edis.ifas.ufl.edu/in233

Peach borers: http://edis.ifas.ufl.edu/in489

Additional Resources

Coming Soon

EDIS Publications:

- Caribbean Fruit Fly Management
- Updated Stink Bug Management
- Trapping Guide
- Data on Peachtree borer trap capture

Thank you

Photo: Cory Penca (UF)

Questions?

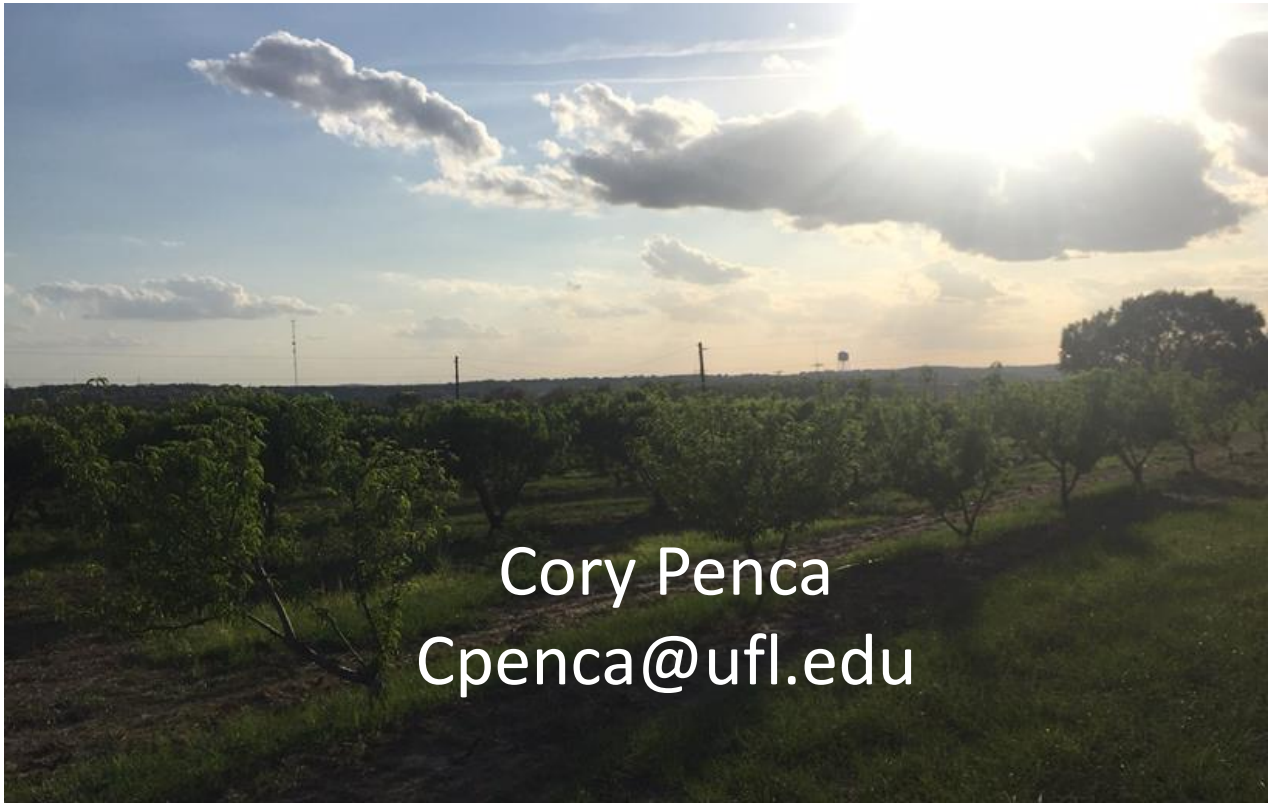

Photo: Cory Penca (UF)