

# Post-hurricane insect and snail management

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# Insect and snail pests to watch for

- Bulimulus Snails
- Lebbeck mealybug
- Citrus Leafminer
- Asian citrus psyllid
- Wood boring beetles

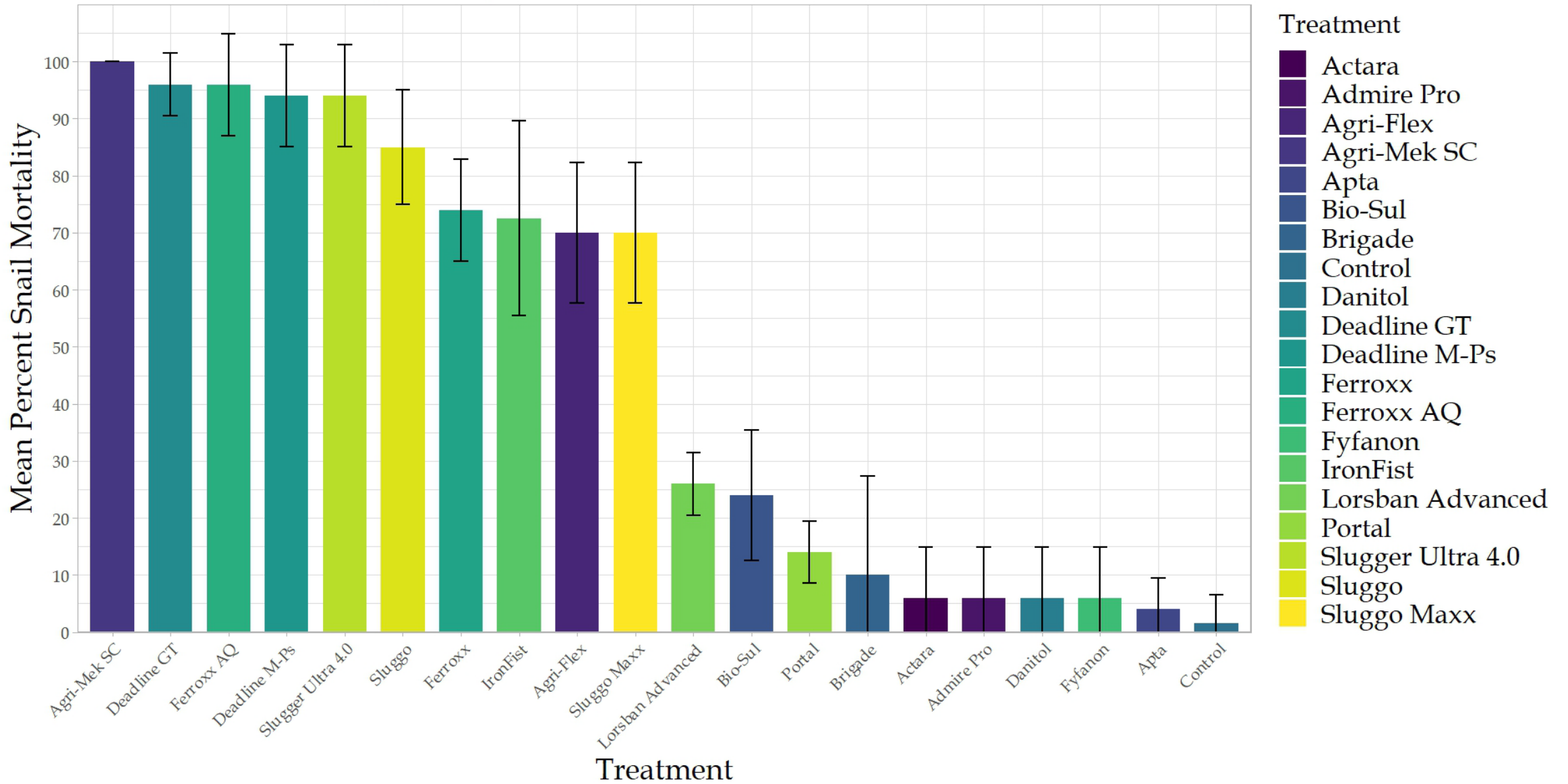


# Bulimulus snails

- Related species have been found to lay eggs in the fall after major rain events. It is likely that we will see the same thing
- Both small (<0.25 inch) and larger (1+ inch) are active now
- Bulimulus snails are attracted to damage- you will see them aggregate on areas of tree damage. They can exacerbate damage in some cases
- Snails will become more active in the warm, moist fields
- Management actions may need to be taken



# Mean Snail Mortality 14 Days After Treatment

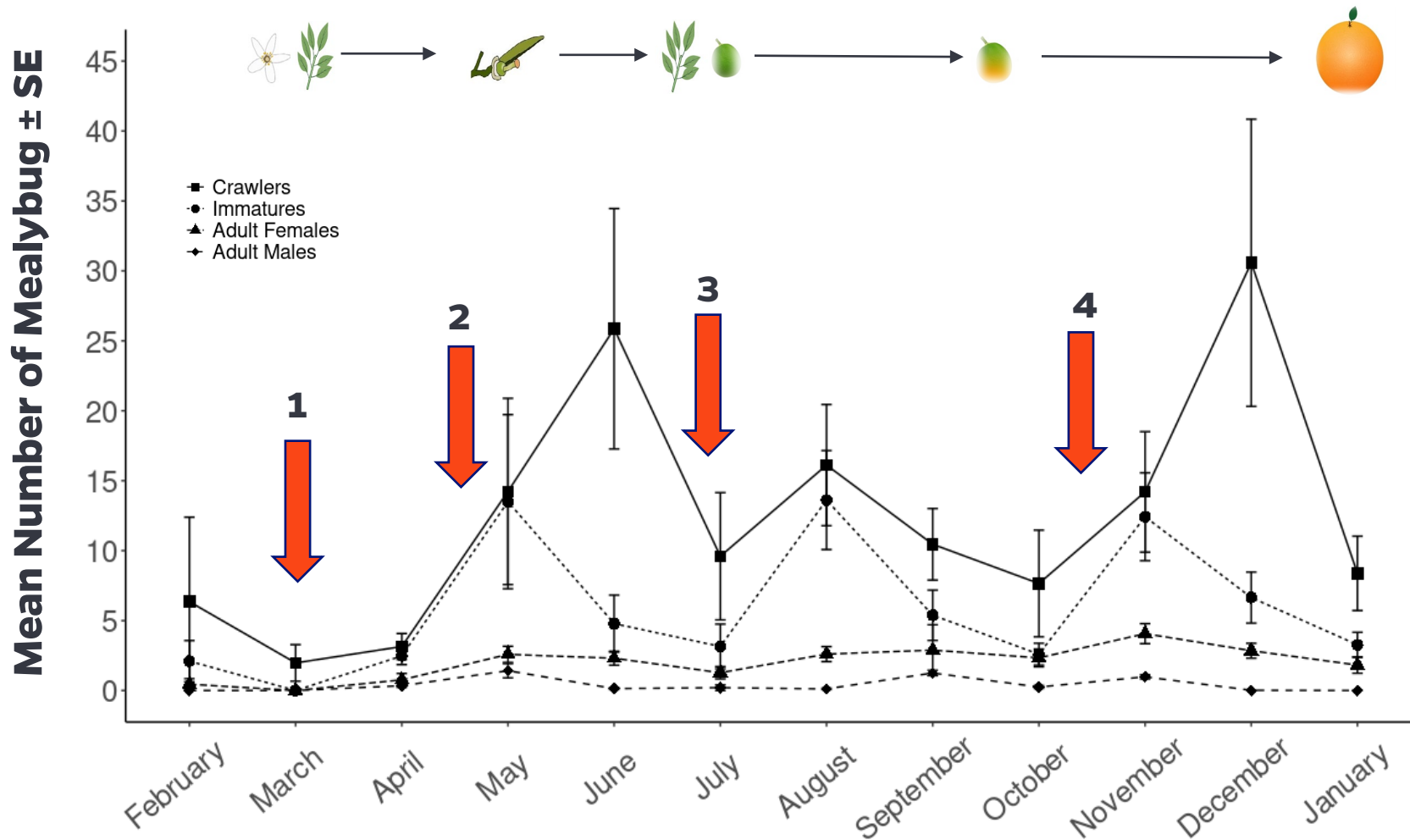


Notes: Insecticides applied at the maximum ACP rates OR other relevant pest (e.g. mealybugs, thrips); Baits tested at 10x labelled rate.

# Lebbeck mealybug

- Populations naturally increase this time of year, continue with planned management actions.
- Up to 80% of immature lifestages, the predominant lifestage throughout the year, can be dislodged from a surface with sustained moderate wind speeds. This means that infestations can spread rapidly during a major wind event such as a hurricane.
- These mealybugs are strongly attracted to points of damage .Ensure full spray coverage of any branches and/or trunks with damage- these locations will serve as a reservoir of the pest in the spring.

# Phenology & insecticide timing for management



1. Before fruit set/bloom  
Spirotetramat
2. Fruit set, crawler population increasing  
Contact knockdown
3. Second major flush  
Use material also with efficacy on ACP<sup>1</sup>
4. Fruit maturation  
Material with efficacy also on rust mites<sup>1</sup>

Crawlers smother/killed easily- most chemistries/ adjuvants will reduce

# Citrus leafminer

- CLM are present in the canopies of citrus trees throughout the year
- No reproductive diapause= they can reproduce year-round
- If trees flush again post-hurricane, expect CLM infestation on young flush. You may need to plan additional sprays to reduce infestation and damage than can allow canker entry into leaves.



# Asian citrus psyllid

- Psyllid populations generally begin to reduce this time of year, but they are still present.
- Despite cooler evening temperatures, daytime temperatures will still be ideal for ACP activity (ACP like 75-80°F).



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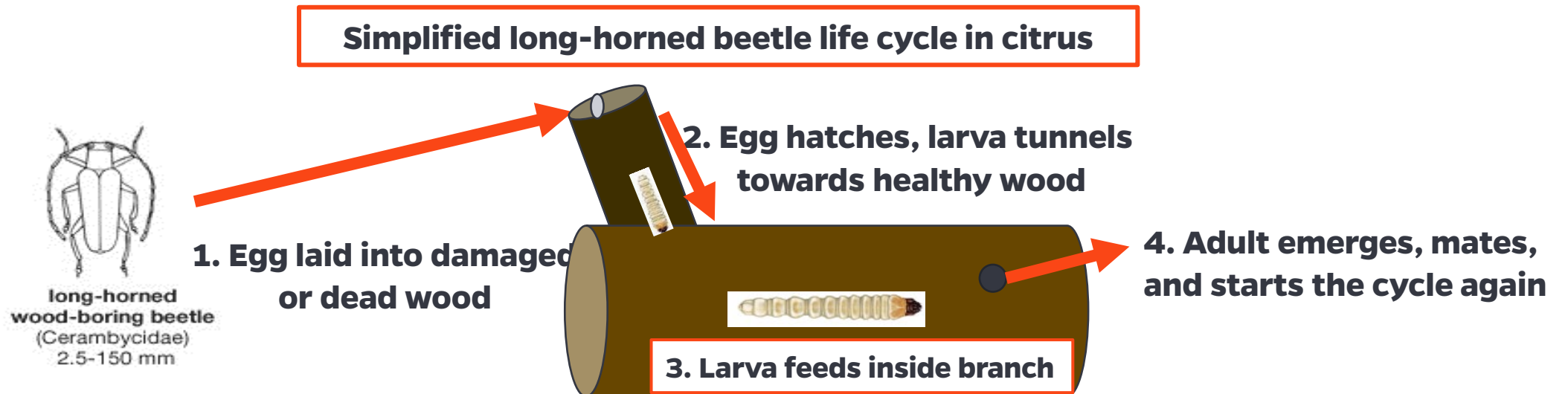


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# Wood-boring beetles

- Wood-boring beetles are attracted to damage including broken branches and abrasions on trunks. These beetles generally lay eggs on dead or dying branches. Eggs hatch and the larvae bore into the wood and can weaken branch junctions, causing healthy, fruit-bearing branches to break and reduction of yield.
- Removal of dead trees in and near your field and removal of dead branches followed by burning is the best way to reduce impacts to trees.





**Cerambycid larva at junction of damaged branch and healthy branches**



**Feeding tunnel from cerambycid larva**



**Cerambycid larva extracted from branch**

# CUPS Insect Management

- CUPS with screen damage will need regular insect management to prevent establishment of unwanted pests such as ACP, citrus leafminer, and weevils until screening can be fixed.
- Screen damage can mean increased winds inside of CUPS. This will increase the spread of lebbeck within structures. Plan management accordingly.



# IPCs: Post-hurricane damage and needs

- High winds cause IPCs to move with respect to both the tree and the pole they were installed with. This additional movement can cause damage to the trees and/or IPCs.
- Tree care
  - Young trees with small canopies can be stripped from the bottom closures moving up and down the pole/tree
  - Trees that have become exposed (IPCs blown off/ripped) should be treated with a seasonally-appropriate insecticide before new IPCs are placed
- IPC care
  - IPC poles can break under stress from high winds- may need replacement
  - IPCs can become torn from thorns and branches rubbing against them, tops of poles may also wear through the IPC

# IPC updates from Immokalee (F. Alferez)

- Immokalee
  - 47 mph winds
  - 10-15% of not zip-tied IPCs were partially blown leaving trees exposed.
  - Zip-tied IPCs held at that winds speed.

Sunn hemp planted in row middles (taller than young trees) minimized the effect: Only 4% of not tied IPCs were partially blown off of trees



## Other pests

- If you need assistance for other pests or have additional questions, please contact me:

[LDiepenbrock@ufl.edu](mailto:LDiepenbrock@ufl.edu)

Or

863-956-8801

Please note that I am away with limited email access October 16-22.

**Thank You**