



# Stink Bugs: A Potential Threat in a ThryvOn World?

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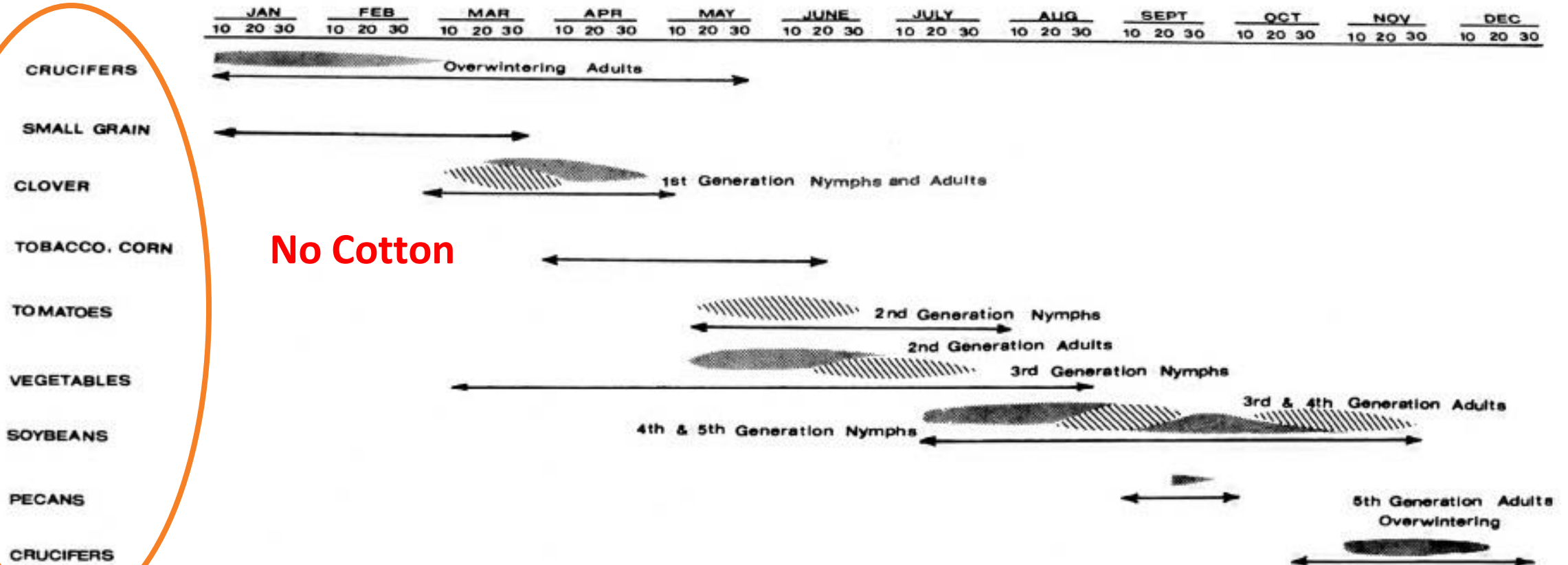
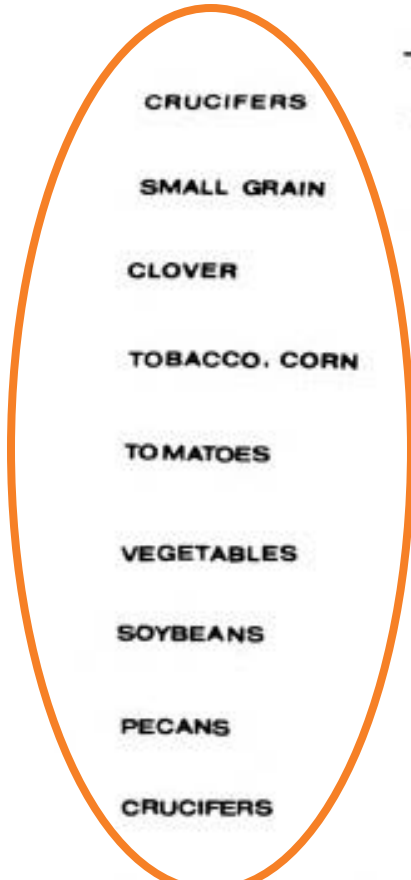


# A little history...

- Prior to boll weevil eradication in the southeast, stink bugs weren't really a concern in cotton  
    “That's just a specialty crop pest...”
- In Alabama, BWE ('95) and Bt cotton ('96) lined up perfectly
- We went from a high spray environment to a limited spray environment and stink bugs filled the void
- Dr. Ron Smith found a textbook from 1905 that listed stink bugs as a pest of cotton
- High spray environments for budworm/bollworm, armyworms and boll weevils kept stink bugs at bay...



# A little history...



Sampling Phytophagous Pentatomidae on Soybean

Figure 23-3. Seasonal host sequence of various phytophagous stink bug species in the southeastern United States. Time lines indicate periods when host plants are available and suitable for stink bug feeding. Movement of adults among various hosts for feeding and oviposition is common.

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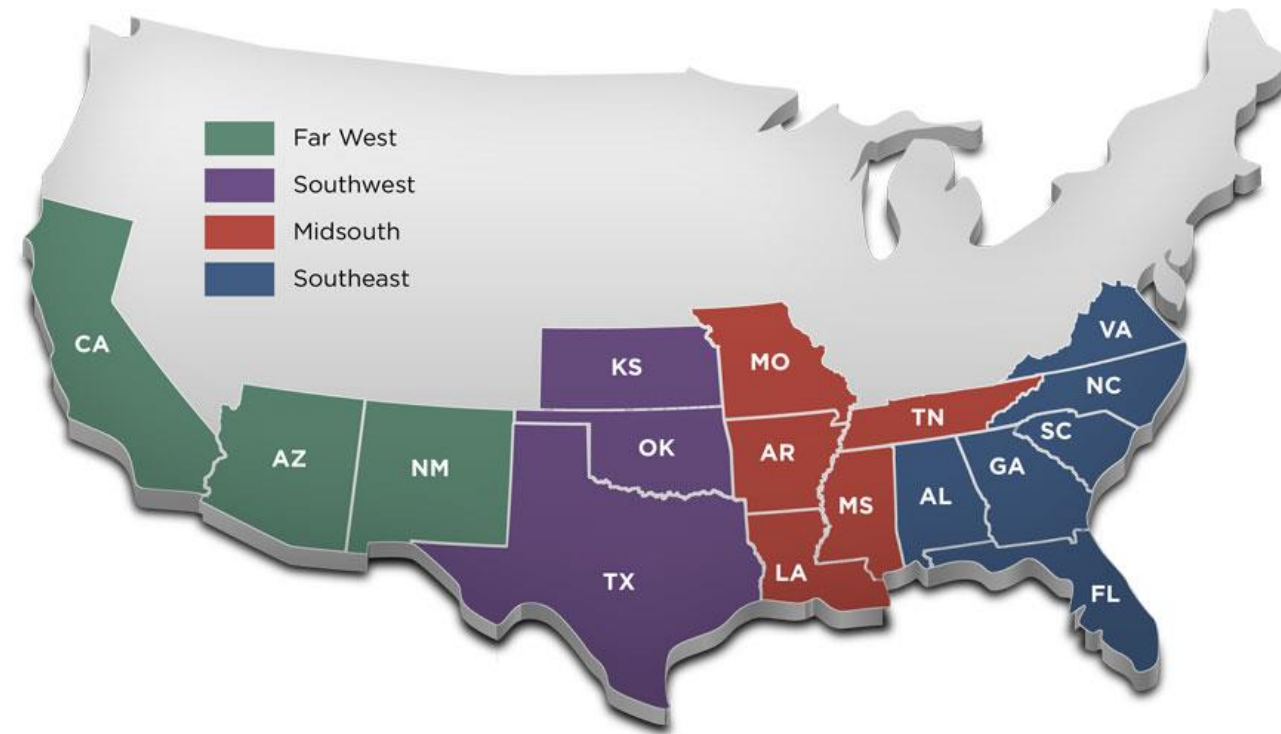
# How Could Stink Bugs Sneak in Mid-South Fields?

- ThryvOn Cotton will certainly change the system
- How exactly?
  - We don't know for sure
  - Still spraying adults???
- If ThryvOn saves us a couple sprays, when?
  - Peak bloom...
- If ThryvOn saves us a couple sprays, what?
  - OP's and Pyrethroids???



# Stink Bugs in Cotton

- Most damaging insect pest in over 2 million acres across the southeast
- Stink bugs are annually a 2-3 spray test for most of the southeast
- What's the big deal?



# Stink Bug Life Cycle

- Longer than other cotton insects
- Up to 60 days
  - 30 immature + 30 adult
  - Adults do most of the damage



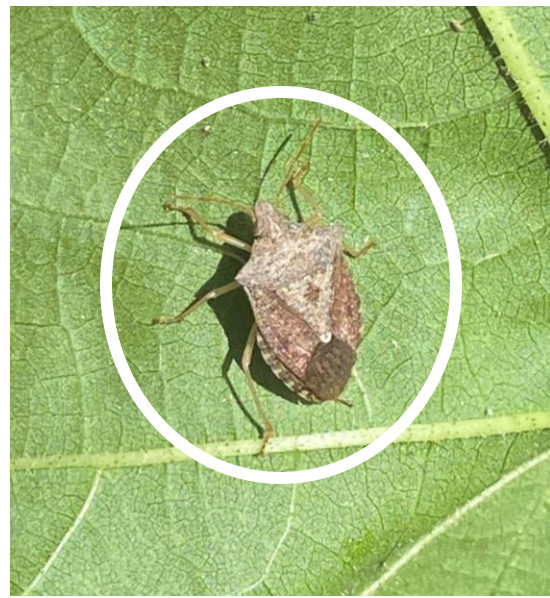
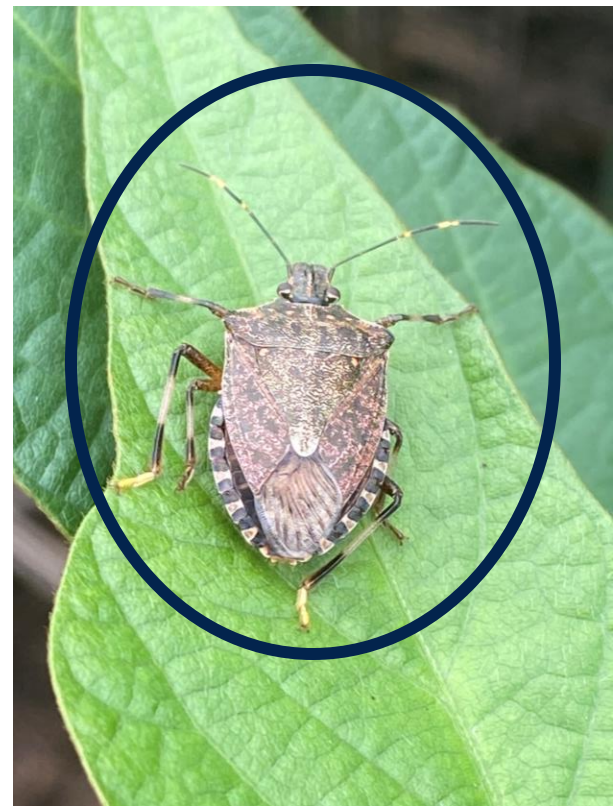
# Stink Bug Life Cycle

## Overwinter as adults

- Spring: Feed on clover, wild hosts, wheat
- Next: Mover to corn as it dries down
- Later: Move to cotton, peanuts and pecans; soybeans as pods develop

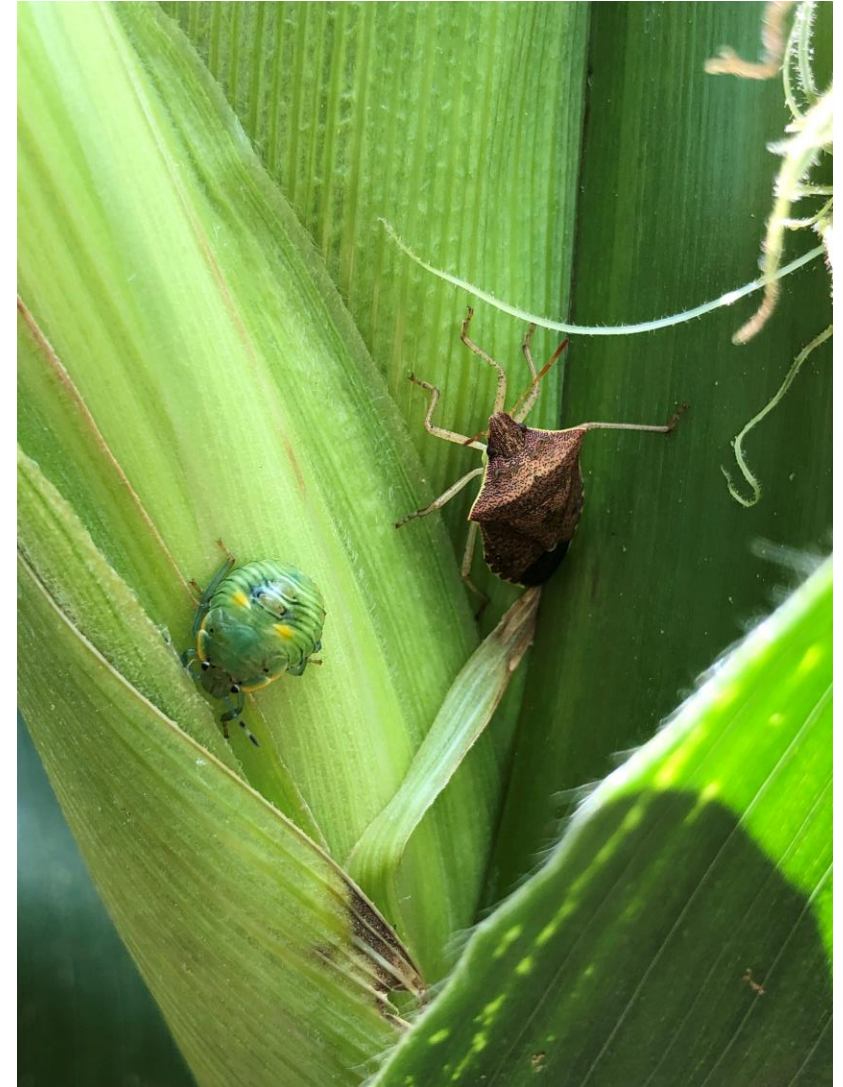






# Stink Bug Species: Seasonal Shifts

- Brown Stink Bug more cold-tolerant
  - More dominant on wheat
- Green and Southern Green more prolific, reproduces on corn
- Browns tend to be most numerous in early July
- Green and Southern Greens dominate from early August to end of season\*\*



# Comparison: TPB vs Stink Bugs



## Tarnished Plant Bugs

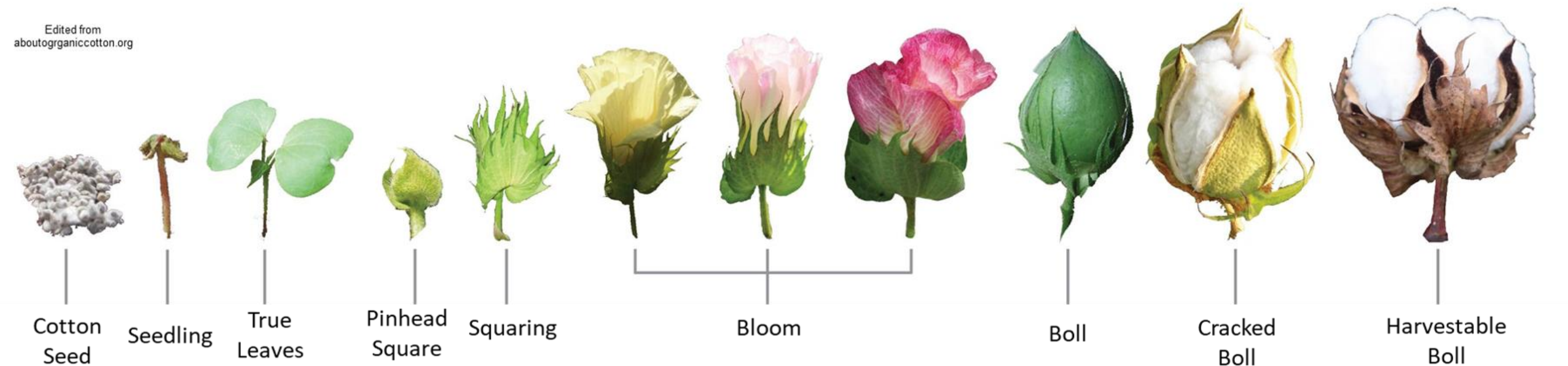
- Begin as adults on weedy hosts
- Infest cotton in June
- Female lays up to 150 eggs in life
- Hatchling to adult in 15-21 days
- Egg to adult in 3-5 weeks
- Adults live  $\approx$ 15 days
- Nymphs prefer to feed on larger squares

## Stink Bugs

- Begin as adults on wheat and weeds
- Move to corn in June, cotton in July/August
- Female lays up to 260 eggs in life
- Hatchling to adult in  $\approx$ 30 days
- Egg to adult in 5-6 weeks
- Adults live  $\approx$ 30 days
- Feed on developing bolls

# Stink Bugs: 2-3 Sprays... Big deal...

- What makes stink bugs so bad if that's all we are treating?
- Target developing bolls, prefer 10-12 days old
- Think about plant bug management and cotton growth and development...

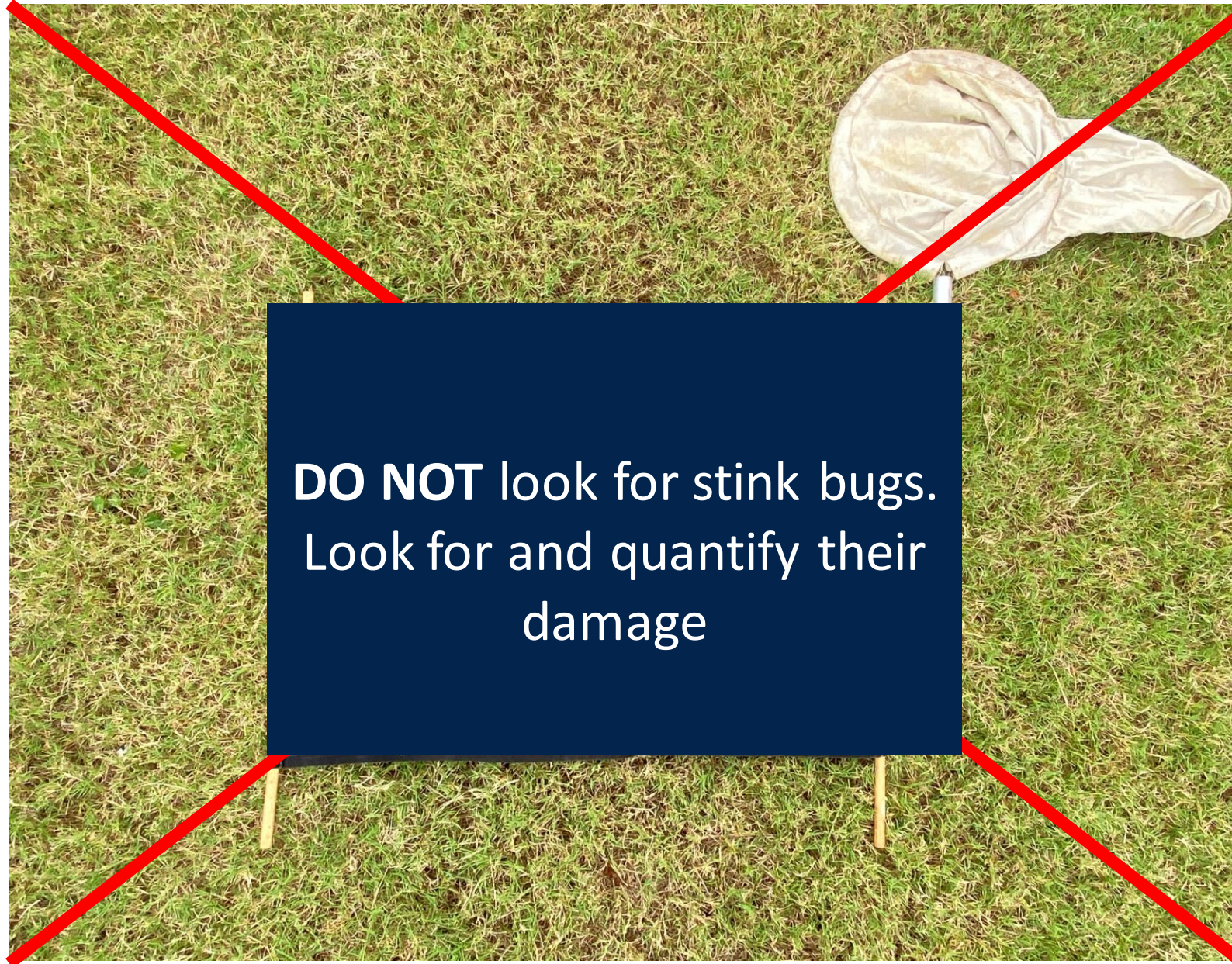


# Stink Bugs: 2-3 Sprays... Big deal...

- From pinhead square to white flower is  $\approx$ 3 weeks
- Plant bug threshold = 80% square retention
  - Why? Can't keep them all...plant can compensate...
- Stink bugs prefer bolls 10-12 days old
  - That's nearly 5 weeks of development into a fruiting position gone
- Simply not as much time to compensate
  - Management strategies in Delta vs South Alabama...



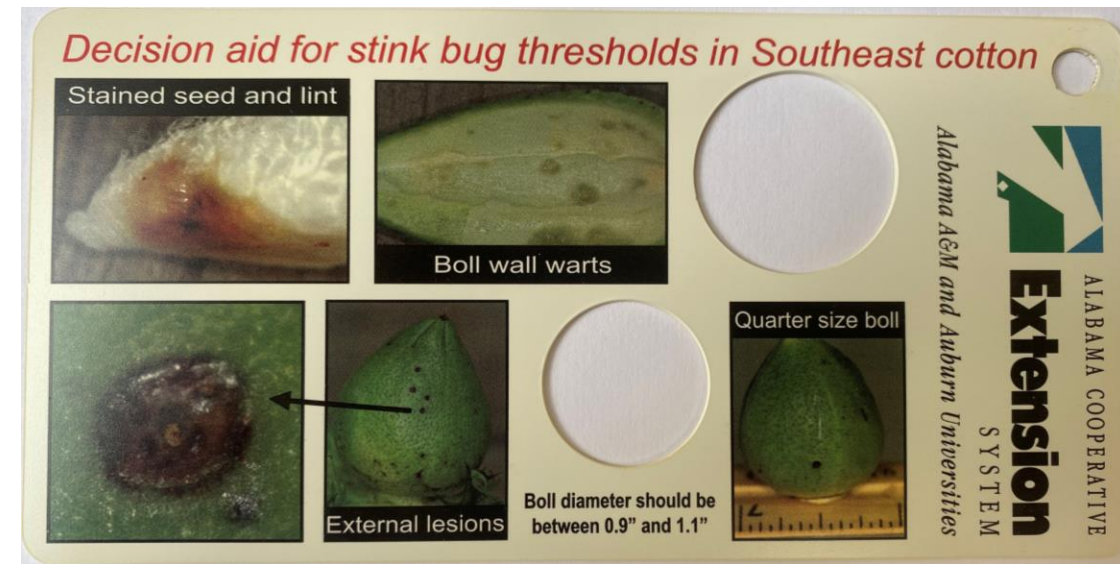
# Scouting for Stink Bugs in Cotton



**DO NOT** look for stink bugs.  
Look for and quantify their  
damage

# Scouting for Stink Bugs

- Stink bugs are seed feeders by nature
- Prefer bolls 10-12d old
  - ≈1 in diameter (size of a quarter)
  - Still a little spongy to the touch
- Crush or open bolls and look for **internal** damage
  - Wart on interior carpel wall
  - Pinprick punctures through carpel wall
  - Stained lint or deteriorating seed



# Stink Bug Damage





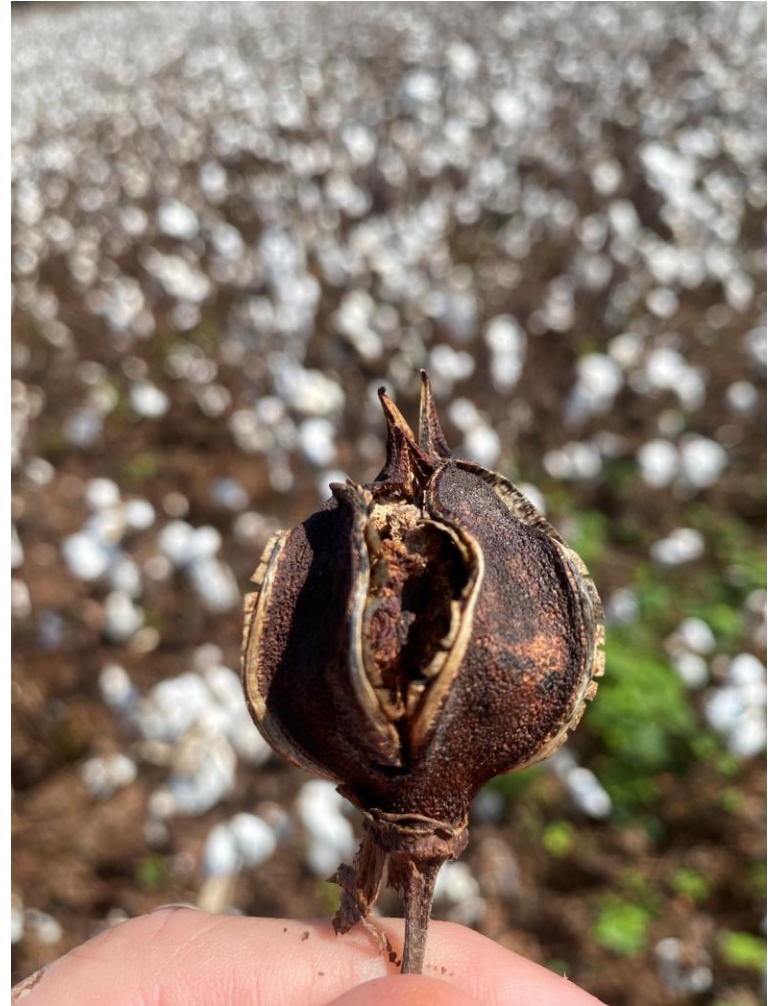
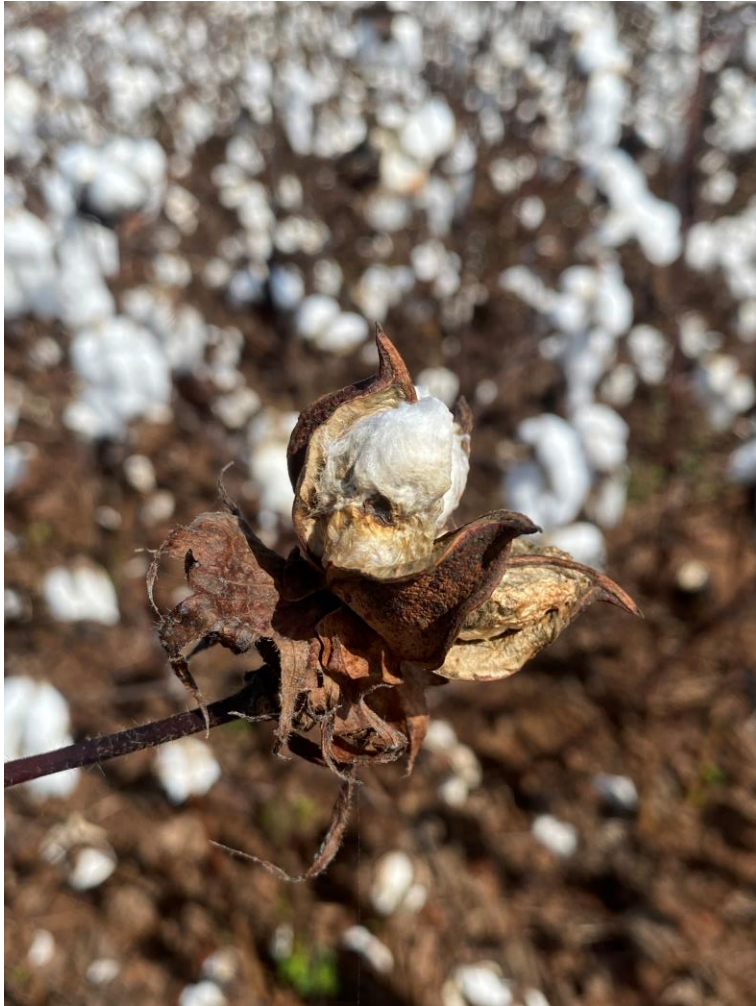
# Stink Bug Damage



# Stink Bug Damage



# Stink Bug Damage



# Stink Bug Damage

Treated for STB



Not Treated for STB

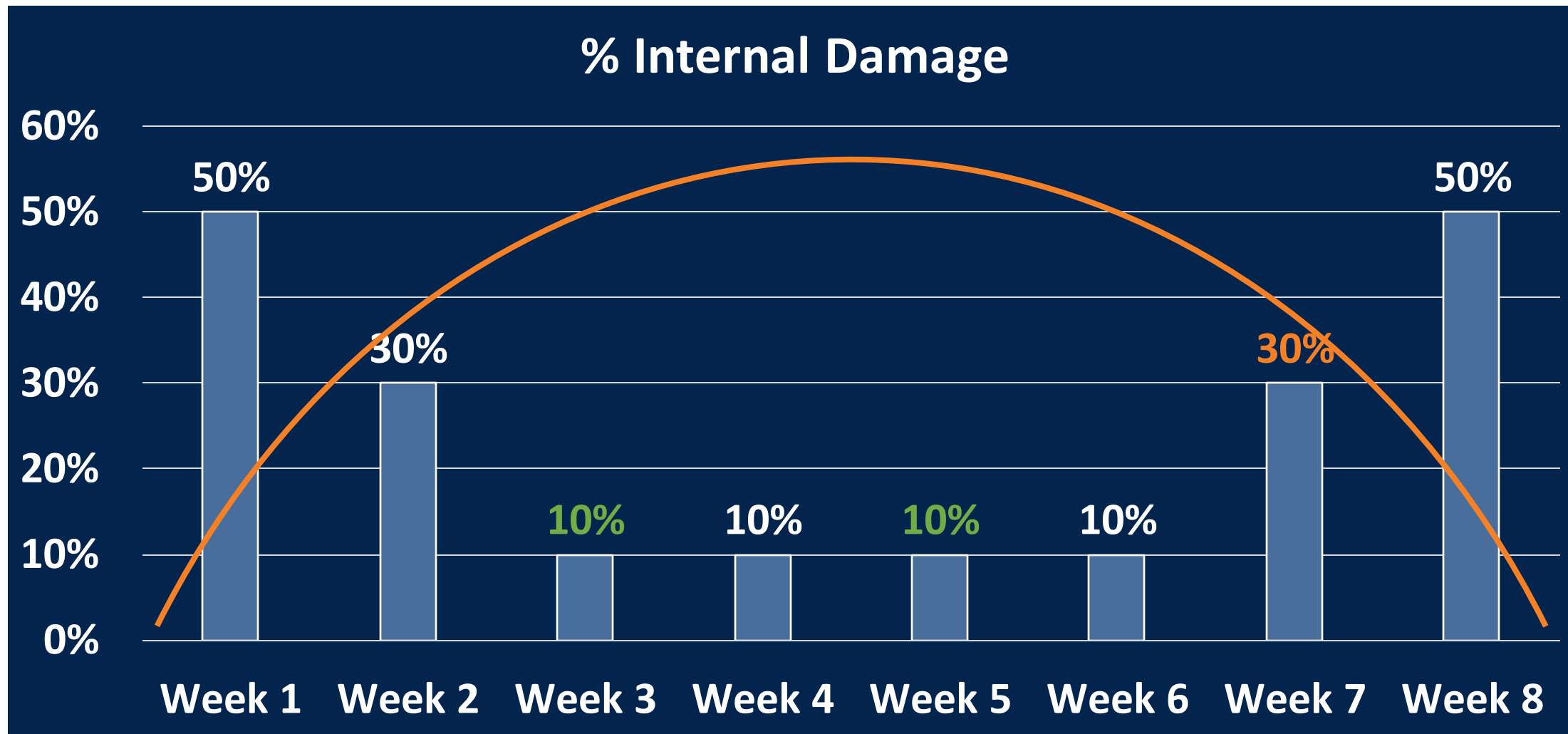


# Decision Aid for Stink Bugs

- Pull a random sample of quarter size bolls
  - Not all from field borders
  - At least 2 areas of the field
- Pull at least one boll per acre
  - Minimum of 15-20 bolls per field
- Begin sampling bolls with external lesions
  - Look for internal damage
- Smaller fields at higher risk
  - Stink bugs are weak flyers and initially infest borders ( $\approx 50$  ft). Smaller fields at higher risk than larger fields (100+ acres)



# Stink Bug Threshold



# Stink Bug Controls

- The good news is stink bugs are not difficult to control
- Organophosphates: Bidrin, acephate
  - Recommended if population is primarily made up of brown stink bug or leaf-footed bug
- Pyrethroids
  - Bifenthrin
  - Many others
- The BMSB can be controlled by most labeled insecticides



# Other Relevant Points

1. Corn is a stink bug trap crop – treat corn and minimize numbers in cotton.
2. Stink bugs will damage thumb-sized bolls post-bloom in cotton if more mature bolls are not present.
3. Stink bugs will remain and damage cotton as long as bolls less than 25 days old are present
4. Stink bugs will move to green (swag) areas of fields late season or to late maturing fields.
5. A stink bug application may hold numbers approximately 14 days unless there is a migration source nearby.





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