Cotton/Soybean Insect Newsletter

Volume 17, Issue #14 Edisto Research & Education Center in Blackville, SC 11 August 2022

Pest Patrol Alerts

Some of the information contained herein each issue is available via text alerts that direct users to online recordings. I will update the short message often for at least as long as the newsletter runs. After a new message is posted, a text message is sent to alert users that I have recorded a new update. Users can subscribe for text message alerts for my updates in two easy steps. Step one: register by texting **pestpat7** to 97063. Step two: reply to the confirmation text you receive by texting the letter "y" to complete your registration. Pest Patrol Alerts are sponsored by Syngenta.

Updates on Twitter

When noteworthy events happen the in the field, I will be sending them out quickly via Twitter. If you want to follow those quick updates, follow me at **@bugdocisin** on Twitter.

News from Around the State

Joe Varn, county agent covering Bamberg and Barnwell Counties, sent the photo here of soybean loopers (SBL) on his drop cloth sample. The insect of the week in soybeans is definitely SBL, as defoliation has certainly increased with this species predominant in sampling to determine the culprit(s). **Charles Davis**, county agent covering Calhoun and Richland Counties, reported "nothing out of the ordinary this week. Still a few aphids hanging around [in cotton], stink bug damage pretty easy to find, a wormhole here and there in a boll, but nothing I saw was worth calling out the troops. [Also in cotton], some late-season insect sprays went out with growth regulator. I saw a lot of evidence of cavitated squares hanging on plants from the last heat events and a lot of aborted squares on the ground in some fields."

Upcoming Field Days

Here are some dates for upcoming field days. I will provide more detailed information as it is available.

- Fall Field Day at the Pee Dee REC – 1 September 2022
- Peanut Field Day at the Edisto REC – 8 September 2022
- Fall Field Day at the Simpson REC – 15 September 2022
- Agronomic Crop Field Day at the Edisto REC – 22 September 2022

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Cotton Situation

As of 7 August 2022, the USDA NASS South Carolina Statistical Office estimated that about 97% of the crop is squaring, compared with 94% the previous week, 98% at this time last year, and 93% for the 5-year average. About 81% of the crop is setting bolls, compared with 70% the previous week, 77% at this time last year, and 68% for the 5-year average. The conditions of the crop were 10% excellent, 60% good, 27% fair, 3% poor, and 0% very poor. These are reported statewide averages.

Cotton Insects

Aphids – Cotton aphids can rebound, but they are pretty much out of the picture for the remainder of the season. They are just food for predators now.

Plant bugs – As I stated last week, we are in stink bug month (August) now, so plant bugs just become part of the boll-feeding complex now and are treated when sprays go out for stink bugs. The tarnished plant bug is present in every field feeding on squares, blooms, and small bolls, but they are not an economic issue by themselves now.

Spider mites – The best material you can get on spider mites in cotton is heavy rain, and, thankfully, we have been getting that in spotty showers. So, if you have fields that have been lucky enough to get rains regularly, you probably do not have issues with spider mites. If you have fields that have been missing showers, those are the fields I would take a hard look at for spider mites. Even irrigation cannot do what Mother Nature can with rain, so do not neglect looking at irrigated fields that have missed rains also.

Bollworm – Captures of bollworm moths in our pheromone traps increased again this past week, and there are more moths in the field each day. Oviposition by females is increasing, and we should see pressure peak in the next couple of weeks. Late-planted cotton is more at risk for injury from bollworm escaping Bt toxins, especially in 2-gene Bt cotton. However, my colleague at NCSU, Dr. Dominic Reisig, recently ran a VIP bioassay on a population of bollworms we collected out of non-Bt corn as corn earworms, and that Blackville population was showing signs of tolerance to VIP, the 3rd Bt protein in 3-gene Bt cotton. So, make sure you are checking for bollworm escapes in all fields. I saw some damage to the top of some bolls this week under where the bloom tag held on for a while. This one didn't get through, but it was close.

Stink bugs – Stink bugs are the #1 insect pest group of cotton in South Carolina, and it is "stink bug month," so, it's no secret that they are numerous and important right now. All life stages (hatching eggs, nymphs, and adults) are all present, and I have observed primarily brown and southern green stink bugs in the crop. Use bifenthrin or other pyrethroid plus dicrotophos (Bidrin) for brown stink bugs, and use the dynamic boll-injury threshold as detailed on the images I left below in the newsletter again this week.

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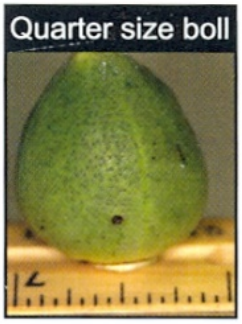
CLEMSON UNIVERSITY

Decision aid for stink bug thresholds in Southeast cotton

Boll diameter should be between 0.9" and 1.1"



CLEMSON COOPERATIVE EXTENSION

Decision aid for stink bug thresholds in Southeast cotton

1. Pull random sample of quarter size diameter bolls, avoid field edges. (boll sizes between 0.9" and 1.1")
2. 1 boll / acre, no less than 25 / field.
3. Sort bolls into two piles: those with and those without, obvious external lesions.
4. Crack and inspect bolls with external lesions for internal damage (boll wall warts, stained seed or lint).
5. If threshold is not met for that week, (see chart) check the remaining bolls for internal damage.
6. Treat field only if the threshold is met for that week.

0.9"

Bolls should fit through the large hole but not the small one.

1.1"

Week of bloom	Threshold (% internal boll damage)
1	50%
2	30%
3	10%
4	10%*
5	10%*
6	20%
7	30%
8	50%

*Consult state guidelines for scouting intervals.

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Photo by D. Mott, NC State

SCOUTING FOR STINK BUG DAMAGE IN SOUTHEAST COTTON:

Description and Use of a Pocket Scouting Decision Aid

Cotton growers in the Southeast can use a pocket-size scouting decision aid to assess and manage stink bug damage based on thresholds for different cotton growth stages.

STINK BUG SCOUTING DECISION AID

A pocket-size scouting decision aid was developed for use in the Southeast to encourage (1) enhanced adoption of stink bug scouting in cotton, (2) better field identification of stink bug-induced boll damage symptoms, and (3) use of recommended scouting procedures. This publication describes the decision aid and how to use it. The aid relies on the latest dynamic threshold for stink bugs in cotton based on week of bloom. It provides the following scouting aids:

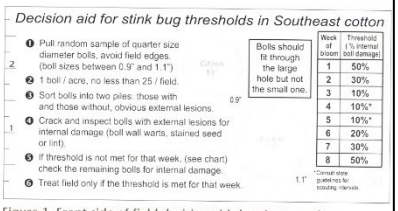
- A "dynamic threshold by week of bloom" table,
- Recommended scouting procedures,
- Measuring holes to help select the correct boll size range for damage assessments, and
- Images of internal and external stink bug-induced boll damage.

The aid should greatly improve stink bug management because the dynamic threshold is based on the cotton growth stages when the crop is most susceptible to stink bug damage. It relies on lower thresholds during weeks of maximum susceptibility (weeks 3 through 5 of the bloom period) and higher thresholds during stages of lower vulnerability (weeks 1 to 2 and weeks 6 to 9 of the bloom period).

DESCRIPTION AND USE

The front (Figure 1) side of the 3×6-inch decision aid provides recommended scouting procedures:

1. Select a random sample of the correct size bolls.
2. Assess an adequate number of bolls.
3. Sort the bolls into two piles, those with and those without obvious external damage lesions.
4. Crack bolls between the thumb and forefinger or cut them open with a knife and inspect all internal boll wall surfaces for internal warts (**not just areas visible from the initial crushing or from the initial knife cut**), and examine all locks for stained lint. (**Helpful hint**: crack and inspect bolls with obvious external lesions first to determine if the internal damage threshold is met, as bolls with external lesions are more likely to be damaged internally; assessing these bolls first can save time.)
5. If the threshold is not met, check the remaining bolls for internal damage.
6. Treat *only* if the threshold has been met for that week.



Decision aid for stink bug thresholds in Southeast cotton

1. Pull random sample of quarter size diameter bolls, avoid field edges. (boll sizes between 0.9" and 1.1")
2. 1 boll / acre, no less than 25 / field.
3. Sort bolls into two piles: those with and those without, obvious external lesions.
4. Crack and inspect bolls with external lesions for internal damage (boll wall warts, stained seed or lint).
5. If threshold is not met for that week, (see chart) check the remaining bolls for internal damage.
6. Treat field only if the threshold is met for that week.

Bolls should fit through the large hole but not the small one.

Week of bloom	Threshold (% internal boll damage)
1	50%
2	30%
3	10%
4	10%*
5	10%*
6	20%
7	30%
8	50%

*Consult state guidelines for scouting intervals.

Figure 1. Front side of field decision aid showing scouting procedures, boll size selection range, and internal boll damage thresholds by week of bloom.

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Information Leaflet 89

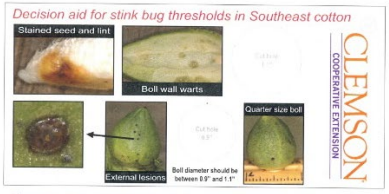

Figure 2. Reverse side of aid showing external and internal stink bug damage symptoms.

The measuring holes provide an efficient way to select correctly sized bolls. Cotton scouts should target bolls with an outside diameter between 0.9 to 1.1 inches. **Bolls of this size correlate best with recent stink bug damage.**

The front side also lists the recommended dynamic threshold by week of bloom. The asterisks for weeks 4 and 5 of the bloom period permit nuances in scouting frequency recommendations by the various southeastern states.

The reverse side of the aid provides images to help properly identify stink bug damage: internal warts, and stained lint; and external damage lesions (Figure 2). As explained in recommendation 3, above, external damage symptoms may be used to sort the pulled bolls into two groups.

Each decision aid is fitted with a lanyard that can be worn around the scout's neck. The lanyard has a quick disconnect adjacent to the aid (Figure 3) for removing the aid to size bolls.

RESOURCES

For stink bug scouting details and additional cotton insect management information, see these Web sites:

- North Carolina State University: http://ipm.ncsu.edu/cotton/insectcorner/
- Virginia Tech: http://web.ento.vt.edu/ento/project.jsp?projectID=22
- Clemson University: http://www.clemson.edu/extension/rowcrops/cotton/
- University of Georgia: http://ugacotton.com

Figure 3. Lanyard with a quick disconnect for removing the aid to measure boll diameter.

ACKNOWLEDGEMENT

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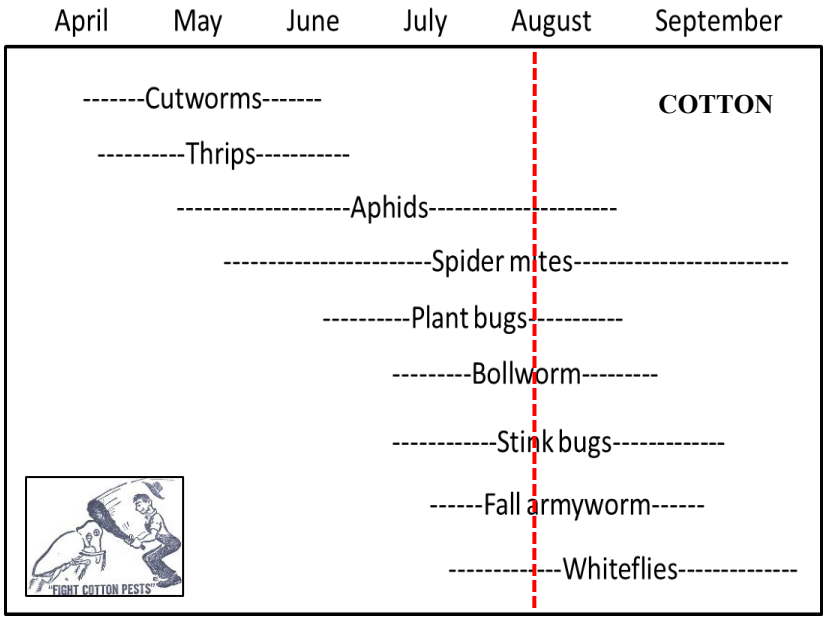

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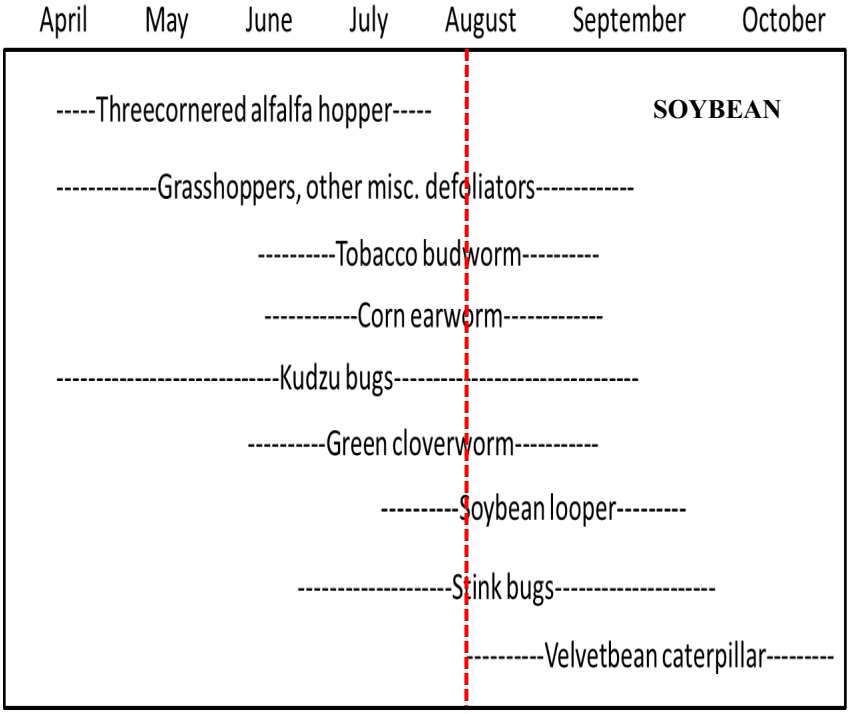
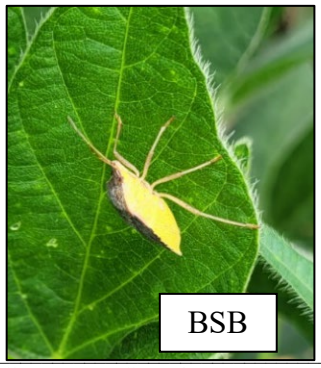
Soybean Situation

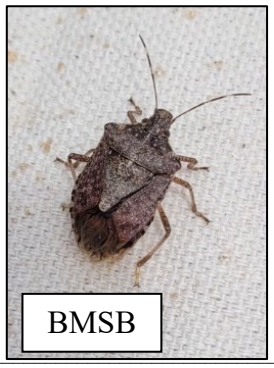
As of 7 August 2022, the USDA NASS South Carolina Statistical Office estimated that about 59% of the crop is blooming, compared with 53% the previous week, 64% at this time last year, and 55% for the 5-year average. About 27% of the crop is setting pods, compared with 23% the previous week, 19% at this time last year, and 20% for the 5-year average. The conditions of the crop were 11% excellent, 51% good, 36% fair, 2% poor, and 0% very poor. These are reported statewide averages.

Soybean Insects



Insect pests love soybeans, and, as an entomologist, I enjoy working in the crop because of the diversity of arthropods present in fields. We have several important species of caterpillar and bug pests in soybeans at treatable levels. The most important right now seems to be soybean looper (SBL). This migratory species keeps flying into our state and laying eggs, with larvae quickly hatching out and defoliating soybeans. We have several very good insecticide options for SBL, but make sure that is the species you have before you spend the extra money. Green cloverworm can look just like SBL, and it is easy to control with insecticides. If you have not sprayed a pyrethroid yet on your fields, you need to check the status of kudzu bugs and stink bugs. When you spot numerous kudzu bug (KB) nymphs on most observations, you likely have enough to justify spraying. They will cover the stems, and you will know when too many is too many. You can also use a sweep net and treat at 1 KB nymph per sweep. Today, I saw numerous species of stink bugs, including the redbanded stink bug (RBSB), southern green stink bug (SGSB), brown stink bug (BSB), and the brown marmorated stink bug (BMSB).





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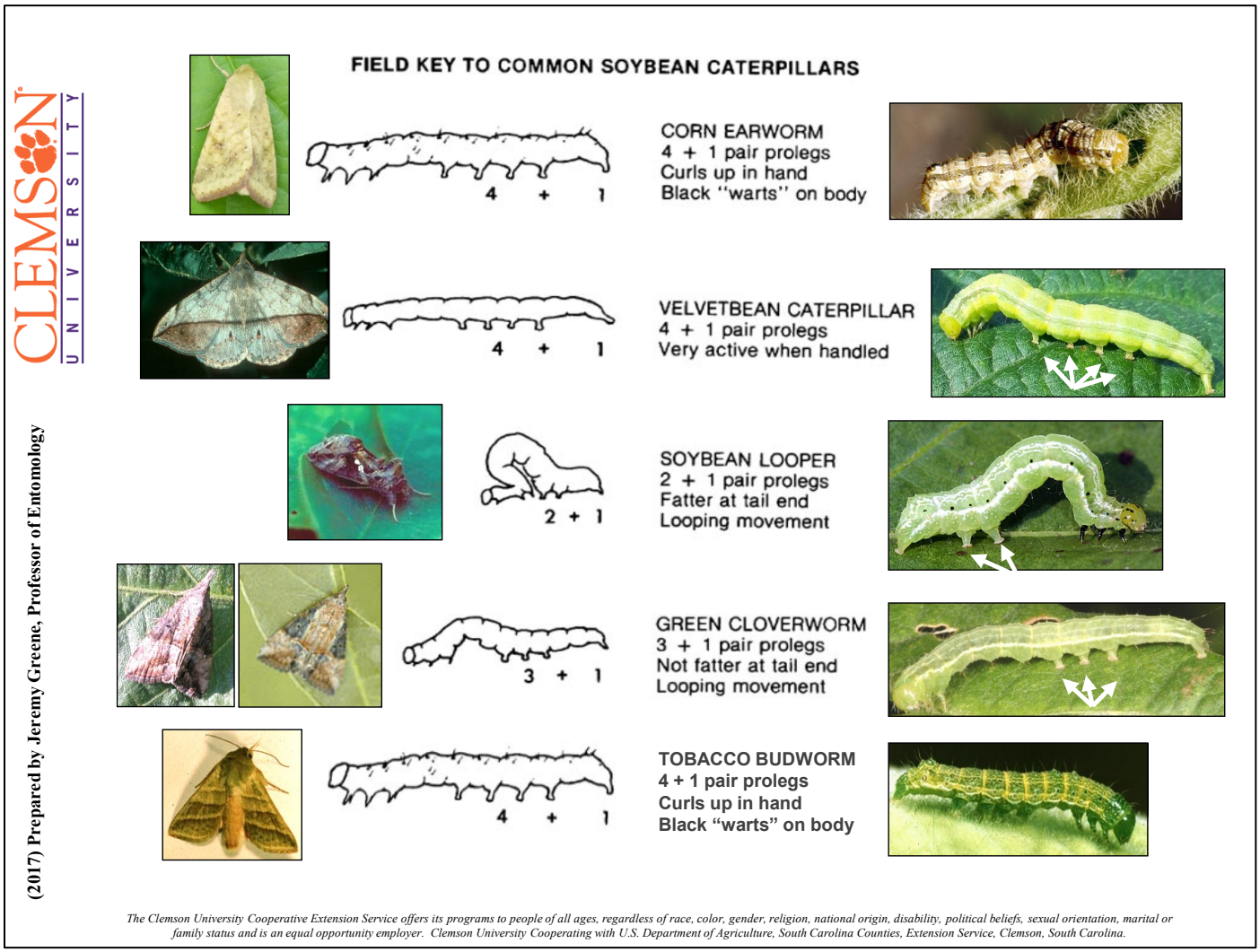
As moth activity increases, deposited eggs will yield caterpillar pests on soybeans. It is good skill to be able to identify adult moths flying around in fields. Use this chart to study moth and caterpillar identification.



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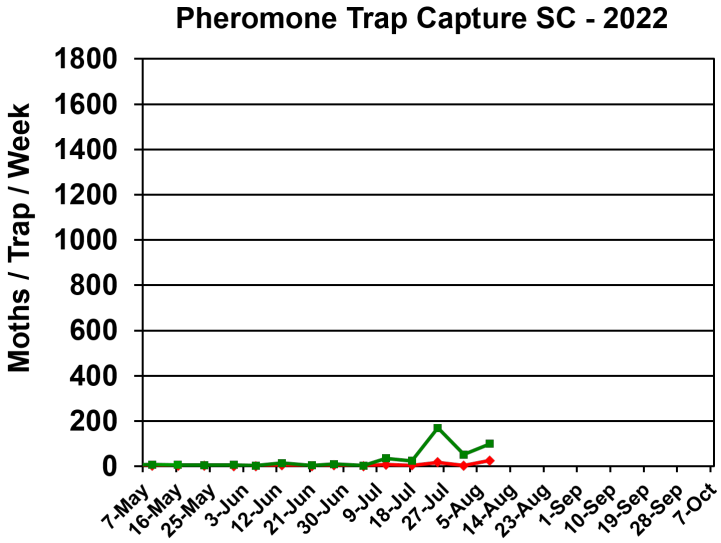
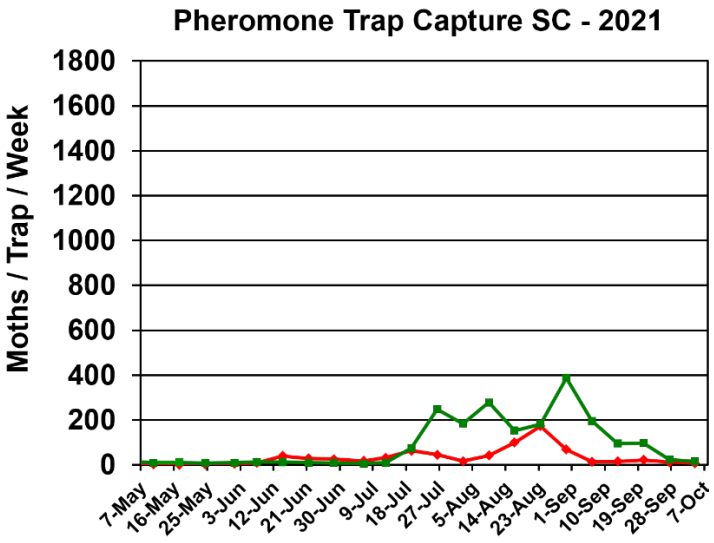
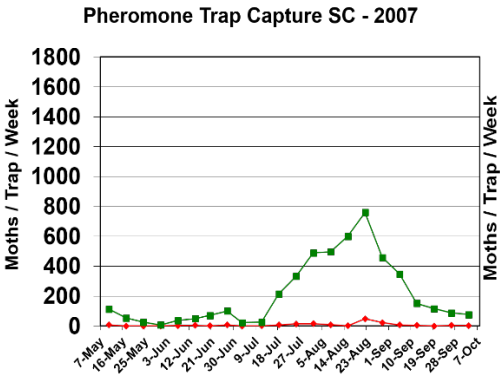
Bollworm & Tobacco Budworm

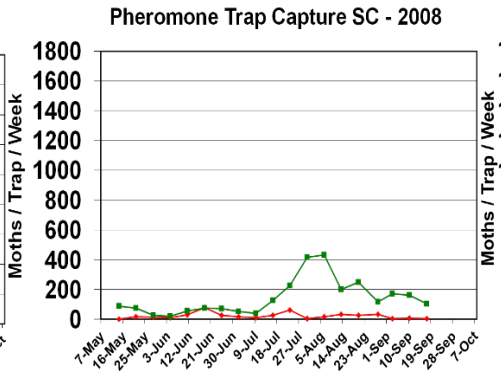
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2007-2021 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these data as a measure of moth presence and activity in our local area near my research plots. The numbers are not necessarily representative of the species throughout the state but are useful for general trends.

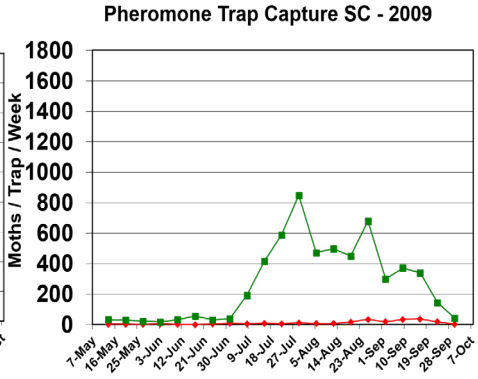




Trap data from 2007-2020 are shown below for reference to other years of trapping data from EREC:







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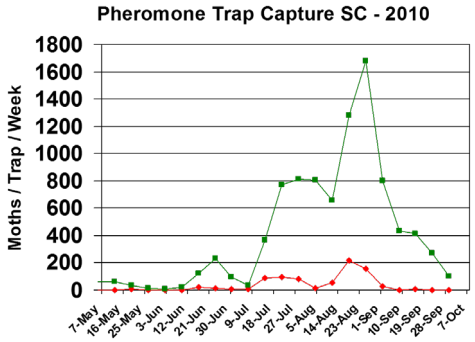

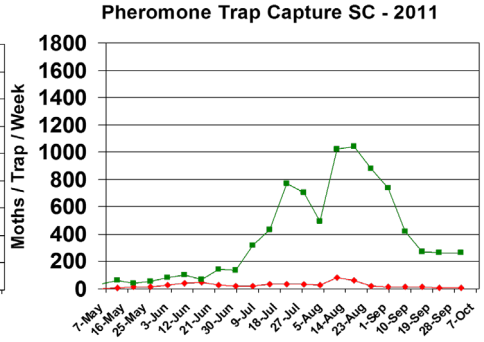

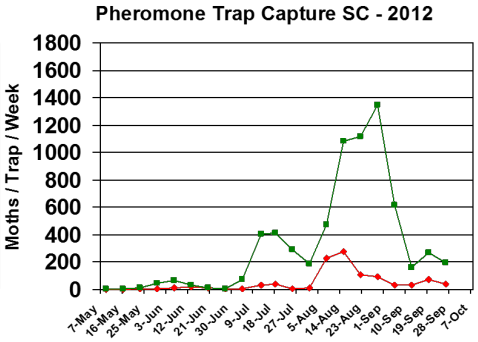

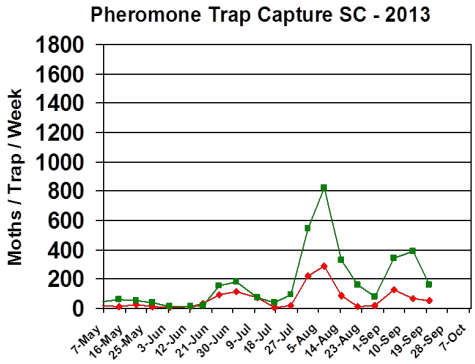

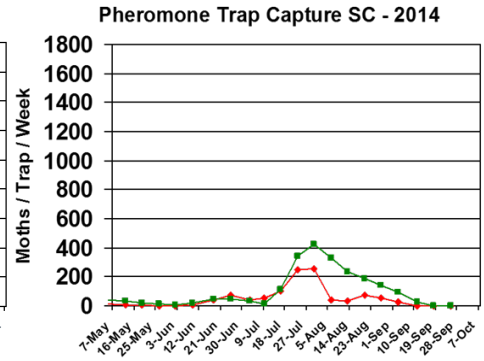

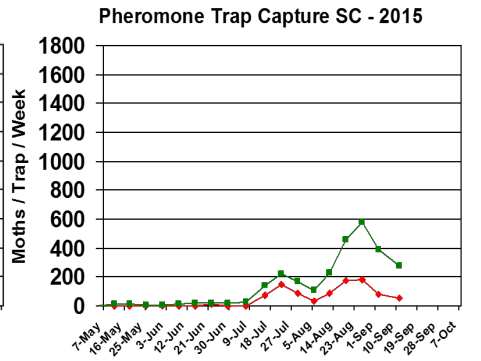

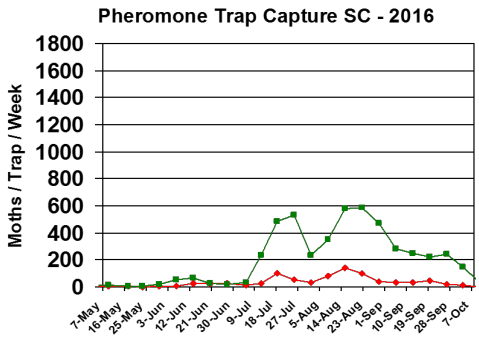

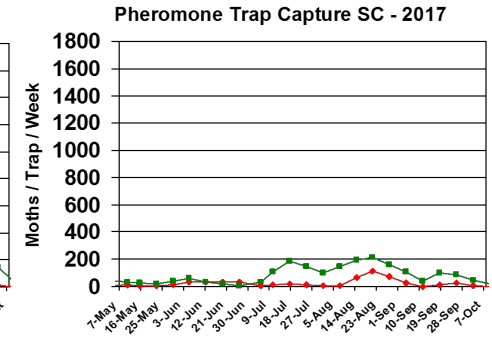

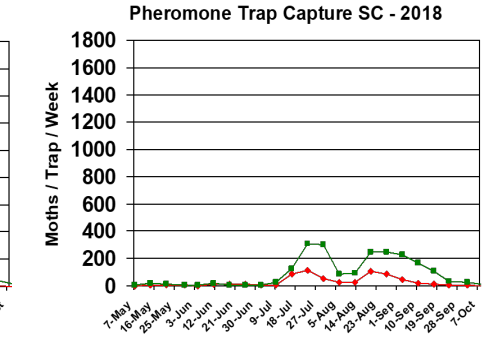

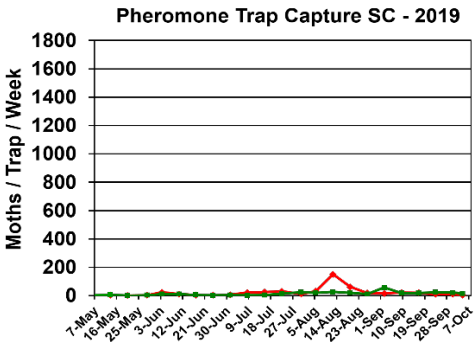

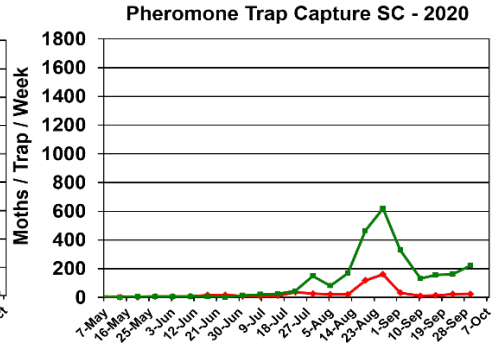

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Pest Management Handbook – 2022

Insect control recommendations are available online in the 2022 South Carolina Pest Management Handbook at:
https://www.clemson.edu/extension/agronomy/pestmanagment2022/2022pmhmaster.pdf

South Carolina Crops Blog

The SC Crops Blog contains content about production of major row crops at the following link, if you want more information: https://blogs.clemson.edu/sccrops/
Archived issues of the Cotton/Soybean Insect Newsletter can be viewed at a convenient link on the SCCrops page. Contact **Dr. Michael Plumblee**, if you have any questions about the blog.

Free Mobile Apps: "Calibrate My Sprayer" and "Mix My Sprayer"

Download our free mobile apps called "Calibrate My Sprayer" and "Mix My Sprayer" that help check for proper calibration of spraying equipment and help you with mixing user-defined pesticides, respectively, in custom units (available in both iOS and Android formats):
http://www.clemson.edu/extension/mobile-apps/

Need More Information?

For more Clemson University Extension information: http://www.clemson.edu/extension/

For historical cotton/soybean insect newsletters:
https://www.clemson.edu//extension/agronomy/cotton1/newsletters.html

Sincerely,

Jeremy K. Greene, Ph.D.
Professor of Entomology

Visit our website at:
http://www.clemson.edu

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