COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences

Cotton/Soybean Insect Newsletter

Volume 18, Issue #1 Edisto Research & Education Center in Blackville, SC 27 April 2023

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

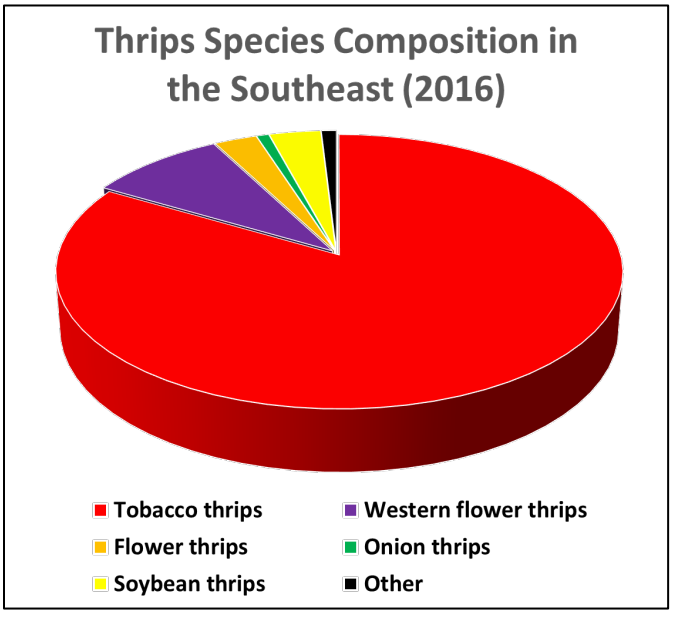
When noteworthy events happen the in the field, I will be sending them out quickly via Twitter. If you want to follow those quick updates, follow me at **@BugDocIsIn** on Twitter.

News from Around the State

Charles Davis, county agent in Calhoun County, reported that he does not "have any cotton up that I am aware of and that most of my guys are planting peanuts and waiting on warmer weather for cotton. This cool snap will make cotton planting a mad rush though." **Jay Crouch**, county agent in Newberry County, reported that a "few folks planting some group IV beans maybe going in this week, pending weather."

Cotton Situation

As of 23 April 2023, the USDA NASS South Carolina Statistical Office estimated that about 1% of the crop has been planted, compared with 0% the previous week, 1% at this time last year, and 2% for the 5-year average. The conditions of the crop were not yet reported (-% excellent, -% good, -% fair, -% poor, and -% very poor). These are reported statewide averages.

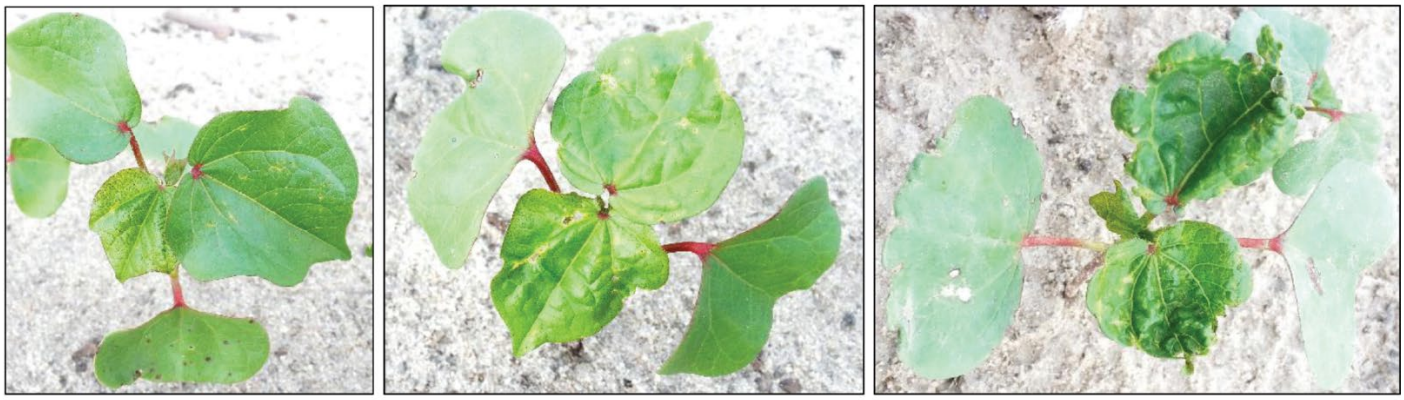


Cotton Insects

Many insect species will be important in cotton throughout the season, but, during the early season, we should only deal with a few of them. Thrips, cutworms, grasshoppers, and one or two more insect pests might be important during the seedling stage of cotton growth. Let's talk about those here.

Thrips – The species of thrips that reproduces readily and is most abundant on seedling cotton is tobacco thrips, *Frankliniella fusca*, but there are a handful of additional species, including western flower thrips,

flower thrips, soybean thrips, onion thrips, etc., that can be found on young cotton plants. Feeding by thrips can cause a range of symptoms, from minor crinkling of leaves to total destruction of leaves and plant death, and that range of injury can result in no losses or significant loss of yield. We rate injury to seedlings using the scale shown here, where '0' = no damage, and '5' = plant death or severe injury to new, true leaves. In this figure, at the '5' rating, you can see tremendous injury to terminal growth due to feeding by thrips. We use the '3' rating as enough damage to start thinking about spraying a foliar insecticide to control thrips. So, somewhere between a '3' and '4' would be a threshold based on visible injury. The key to deciding when to spray for thrips is examining the newest leaf on the plant. If it unfurls normally and shows minimal crinkling (like the '1' and '2' ratings), that is a sign that thrips feeding is not causing enough damage to hurt the plant; however, if the newest leaves show signs of continued feeding injury (like ratings '3' through '5'), you likely need to intervene with an insecticide spray to prevent a delay in maturity or loss of yield.

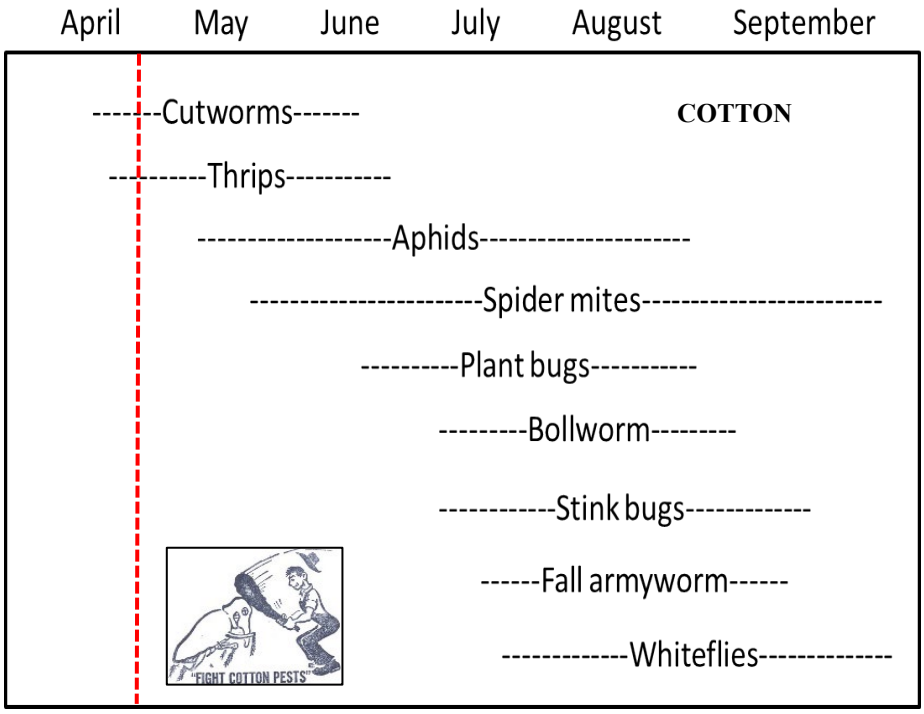


0 1 2

3 4 5

That leads into the important topic of control strategies for thrips, including chemical control (insecticides), cultural control (using cover crops, minimum tillage, modifying planting date, etc.), and biological control (conserving natural enemies of thrips, etc.). Ideally, we should try using all non-chemical

strategies before relying on chemical control in a reactive fashion, as that is the best approach to integrated pest management (IPM). We will talk about proactive insecticide use below. However, with thrips in cotton, we get very little help from Mother Nature on the biological control strategy because predaceous thrips and spider mites just don't eat enough thrips to really assist when control is needed. They do eat some of the plant-feeding species of thrips, but it is not enough, and it is cost prohibitive to release enough lab-grown predators to help out with biological control. As for cultural control, we can do a number of things to reduce the risk of injury from thrips. Those include using reduced tillage practices, planting into heavy residue from cover crops or dead weeds, irrigating heavily when needed, using starter fertilizer under irrigation, using cotton varieties resistant to thrips, using vigorous and fast-growing varieties, planting when temperatures are warm to promote fast growth of seedlings, or other modifications of planting date. Purportedly, the heavy residue interferes with visibility of thrips in recognizing cotton seedlings, irrigation can wash thrips from plants, starter fertilizer and vigorous varieties can promote fast growth, allowing seedlings to "out run" some damage from thrips, resistant varieties deter thrips feeding and/or colonization, and varying planting date can minimize exposure of susceptible seedlings to peak populations of thrips. These are all great strategies that should be tried before deciding to spray foliar insecticides for thrips. I encourage all producers and farm managers to consult the Thrips Infestation Predictor for Cotton at https://products.climate.ncsu.edu/ag/cottontip/ to see when their fields are at the highest level of risk for injury from thrips. You simply select your field location on the map and choose a desired planting date. The online tool will show periods of low and high risk for thrips injury based on forecasted weather and many other data.



Because thrips are the most consistent insect pests of cotton, we almost always use a proactive approach in the form of a preventative insecticide at planting. This prophylactic tactic is needed because, under many circumstances, thrips can cause enough injury to delay the crop or significantly impact yields. At-plant insecticide options include seed treatments, in-furrow liquid or granular products, a new Bt trait, or a combination of these delivery methods. Consult the 2023 South Carolina Pest Management Handbook at https://www.clemson.edu/extension/agronomy/_files/pest-management-handbook-clemson-extension.pdf for all insecticide options, other than the new Bt trait called ThryvOn. Registration of this technology in cotton came after sections for the 2023 handbook were submitted. For more information about Thryvon, see the publication reference below.

Graham, S. H., D. Reisig, A. Huseth, J. Greene, and P. Roberts. 2023. Maximizing insect control in ThryvOn cotton in the Southeast. Alabama Extension – Peer-Reviewed, Crop Production, ANR-2984. https://www.aces.edu/blog/topics/crop-production/maximizing-insect-control-in-thryvon-cotton-in-the-southeast/

Cutworms and Grasshoppers – Cutworms and grasshoppers can threaten the plant population by chewing stems and destroying seedlings. To minimize problems with these pests, ensure that at least a couple of weeks are between any burndown application of herbicide and planting. This helps minimize the number of insects remaining in the field that move from a green cover crop or weed residue onto emerging cotton seedlings. This "green bridge" should be avoided by having dead vegetation in the field for at least a couple of weeks before planting. As for grasshoppers, tillage destroys egg pods in the soil, so, if we are not doing that, they will emerge. Using Dimilin as an insect growth regulator (IGR) to prevent nymphs from becoming adults is a good and not too expensive option for battling grasshoppers on seedling cotton.

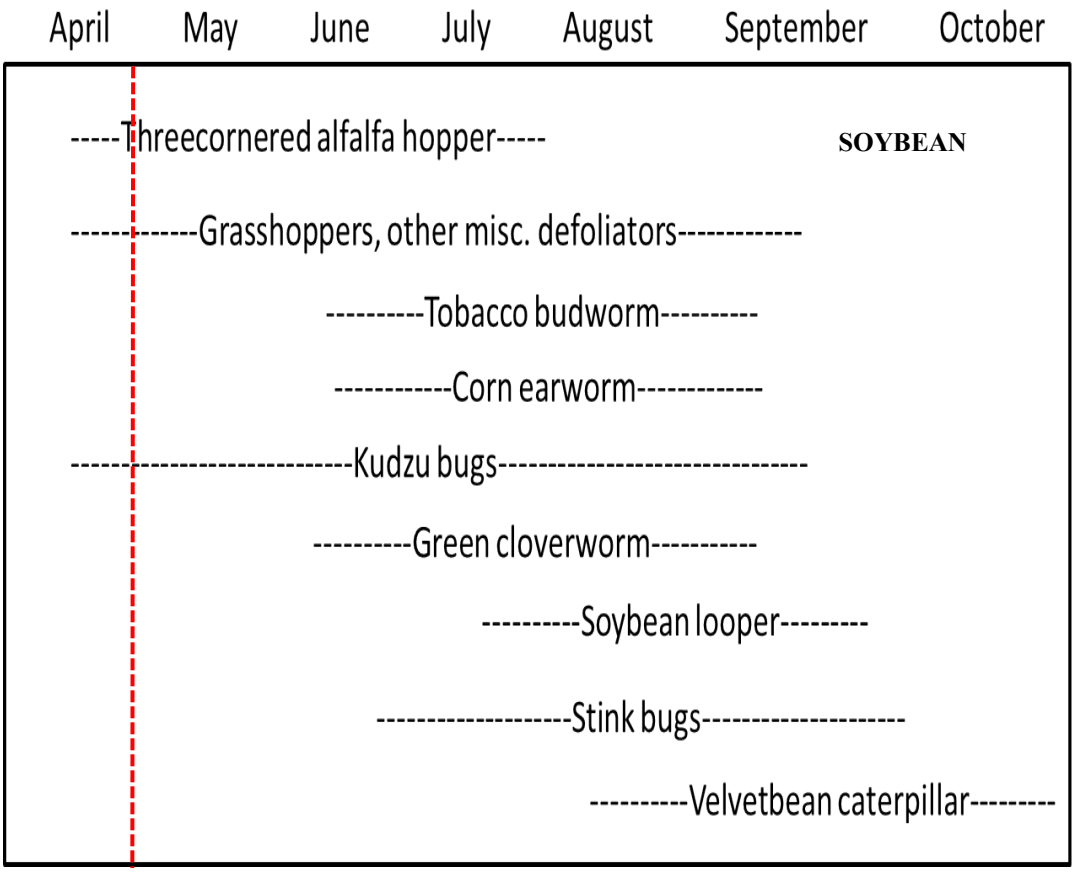
Soybean Situation

As of 23 April 2023, the USDA NASS South Carolina Statistical Office estimated that about 0% of the crop has been planted, compared with 0% the previous week, 0% at this time last year, and 0% for the 5-year average. The conditions of the crop were not yet reported (-% excellent, -% good, -% fair, -% poor, and -% very poor). These are reported statewide averages.

Soybean Insects

We are early on reporting on issue with insect in soybeans, but there will be some planted soon, and some of the early season problems we see in cotton (e.g. grasshoppers) will appear in soybeans. Make sure your burndown applications occur at least a couple of weeks before planting soybeans to minimize risk for insects like cutworms, threecornered alfalfa hopper (TCAH), etc. We have observed this recently

with TCAH, but it doesn't show up until harvest when you have lodged plants, and the combine cannot pick up plants laying on the ground. Also, I would buy some Dimilin for the chemical shed, for sure, if you have fought grasshoppers in the past. You will need some of that IGR (2 fl oz/acre) to control grasshopper nymphs that hatch out of undisturbed soil. While buying that insecticide, you might want to pick up a few other materials for the insects you know will be an issue later in the crop. You will need pyrethroids for stink bugs (and maybe kudzu bug, TCAH, etc.) and selective insecticides for soybean looper. Get ready now. I hope some of the supply-chain issues we have experienced in the last couple of seasons are getting better. Don't hoard pesticides, but get the ones you know you will need. Of course, any supply of pesticides you already have in the shed are good, provided they are not too old, have been kept out of the sun and extreme heat or cold, etc!



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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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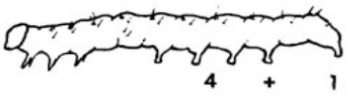
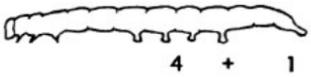
FIELD KEY TO COMMON SOYBEAN CATERPILLARS

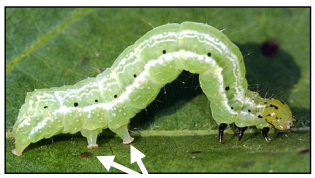


CORN EARWORM
4 + 1 pair prolegs
Curls up in hand
Black "warts" on body

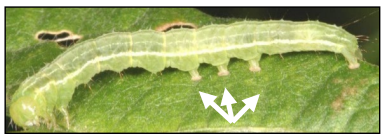


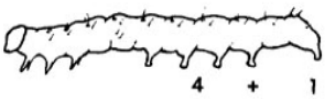
VELVETBEAN CATERPILLAR
4 + 1 pair prolegs
Very active when handled

SOYBEAN LOOPER
2 + 1 pair prolegs
Fatter at tail end
Looping movement



GREEN CLOVERWORM
3 + 1 pair prolegs
Not fatter at tail end
Looping movement





TOBACCO BUDWORM
4 + 1 pair prolegs
Curls up in hand
Black "warts" on body

(2017) Prepared by Jeremy Greene, Professor of Entomology

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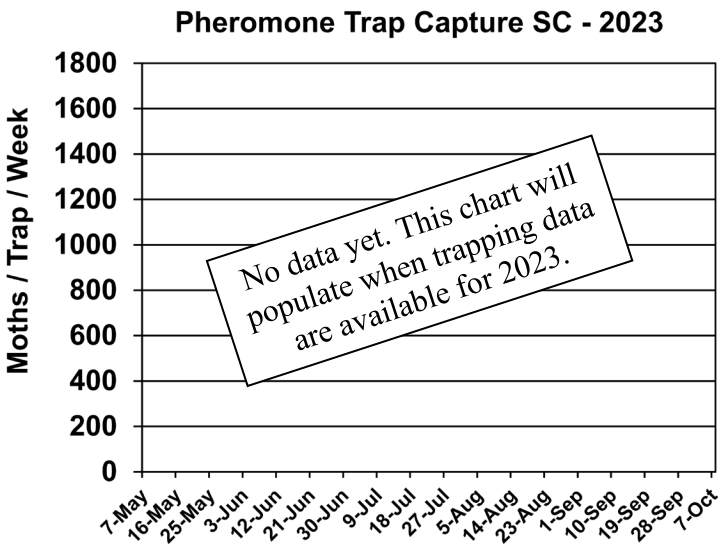
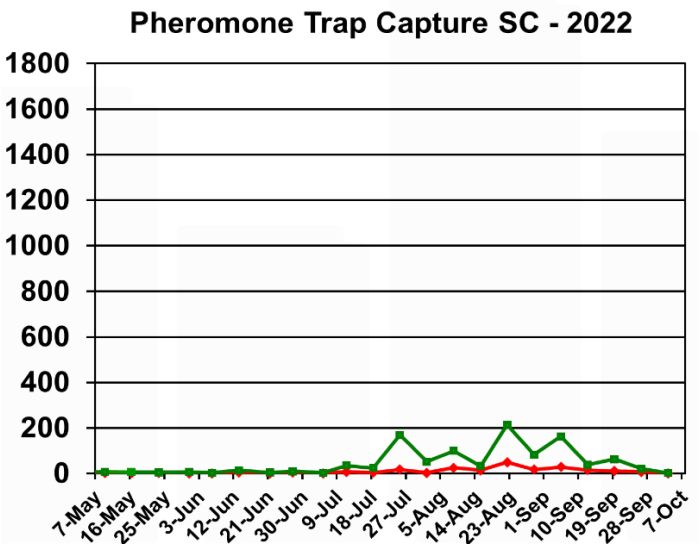
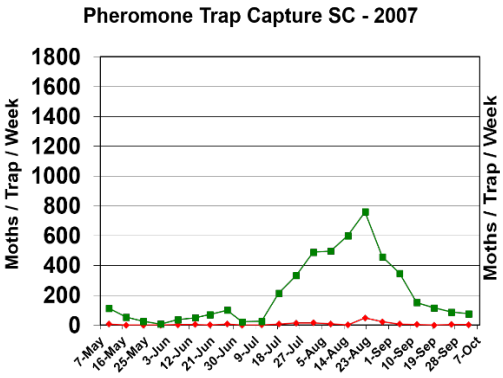
Bollworm & Tobacco Budworm

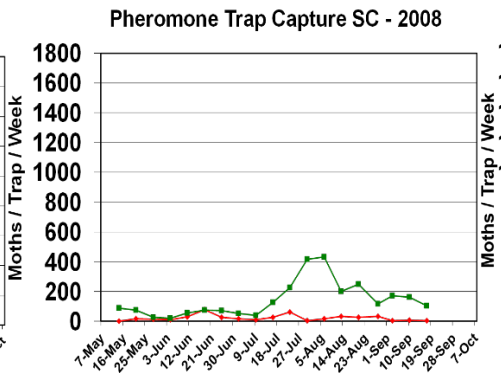
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2007-2022 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these data as a measure of 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.

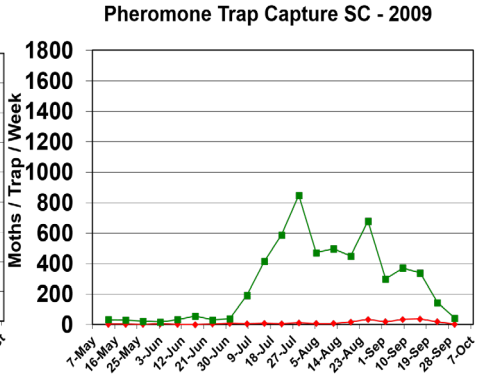




Trap data from 2007-2021 are shown below for reference to other years of trapping data from EREC:







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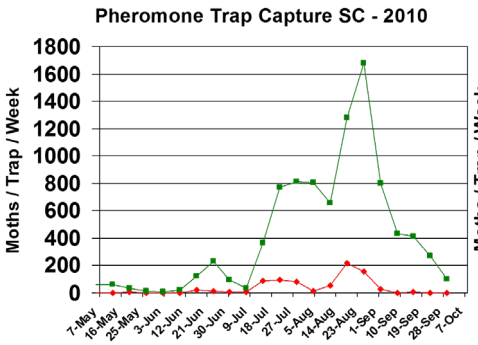

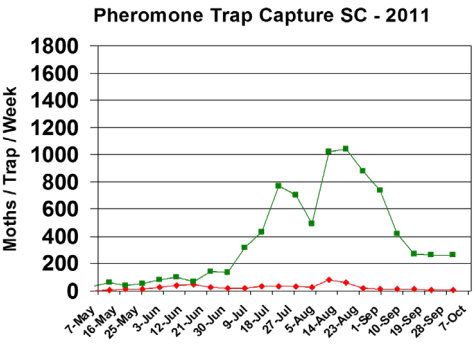

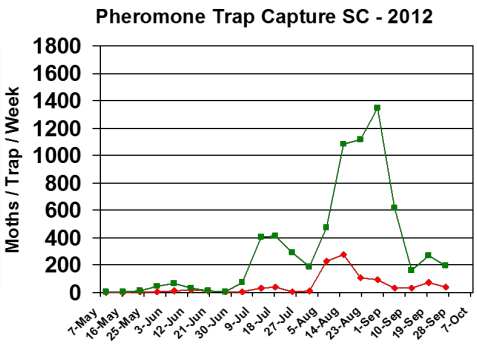

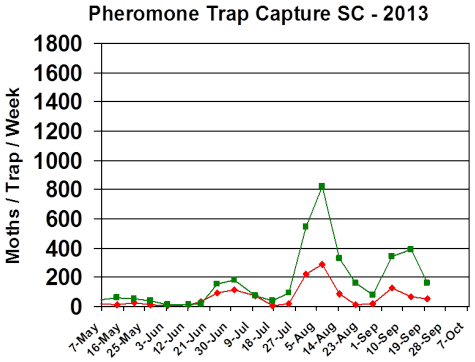

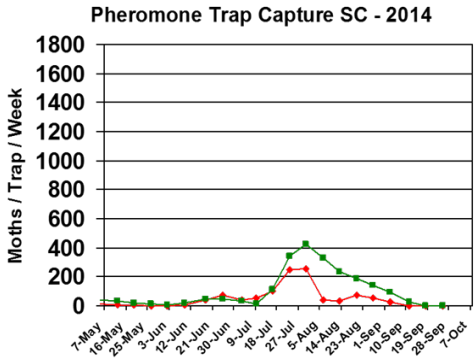

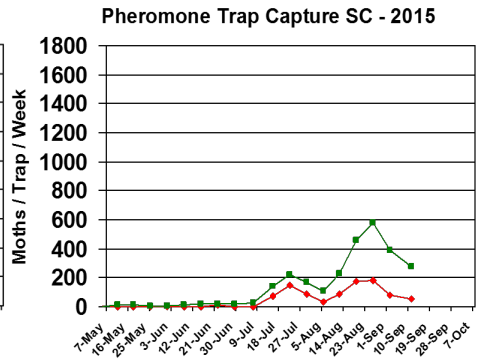

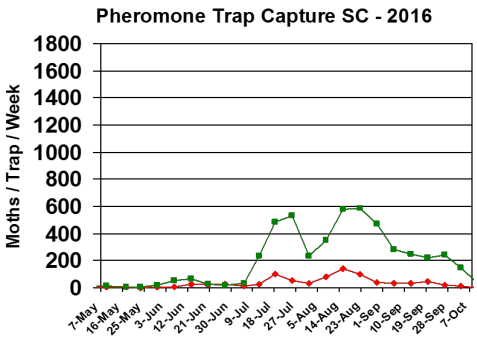

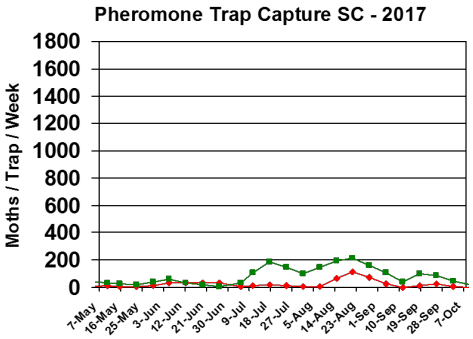

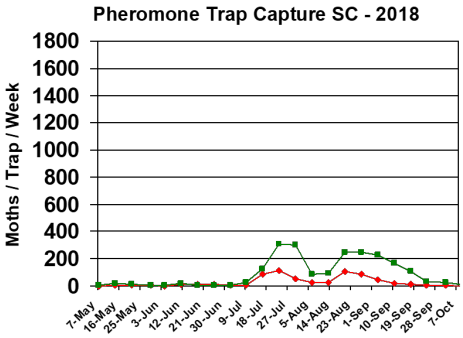

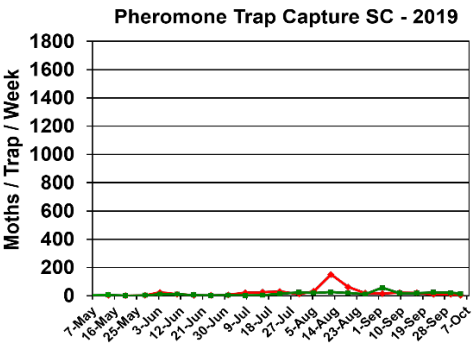

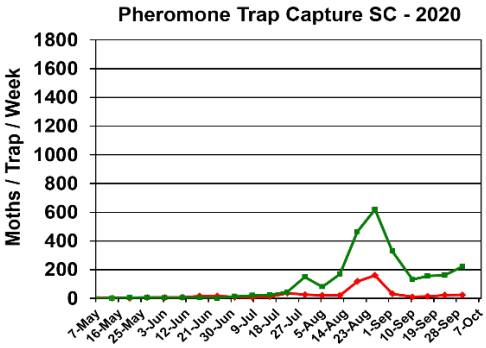

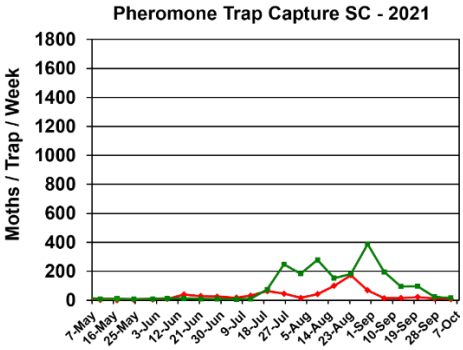

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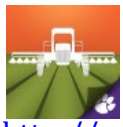
Pest Management Handbook – 2023

Insect control recommendations are available online in the 2023 South Carolina Pest Management Handbook at:
https://www.clemson.edu/extension/agronomy/_files/pest-management-handbook-clemson-extension.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

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