



Cotton/Soybean Insect Newsletter

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Pest Patrol Alerts

The information contained herein each week is available via text alerts that direct users to online recordings. I will update the short message weekly 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 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.



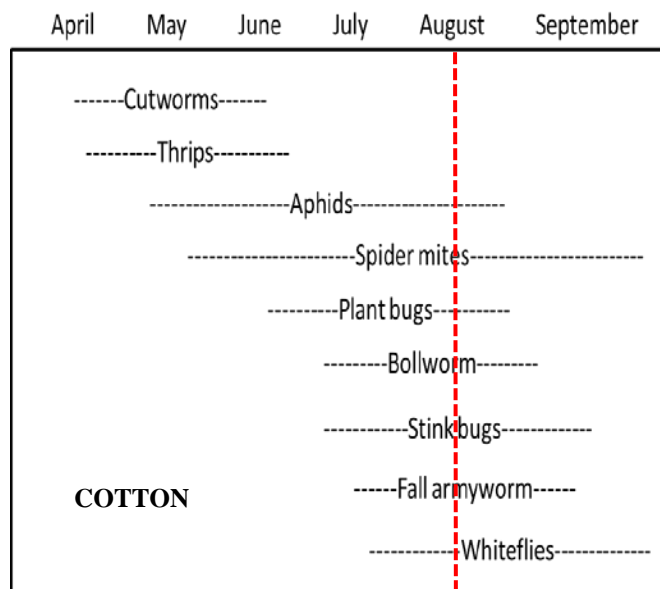
News from Around the State

Jay Crouch, county agent covering Newberry, Saluda, and Edgefield Counties, reported that he has been scouting soybeans recently and noted that the insect complex included “mainly green cloverworm and low levels of kudzu bug adults towards the Piedmont counties. The Ridge has a mixture of green cloverworm, velvetbean caterpillar, podworm, and soybean looper, with an occasional stink bug. Levels of soybean looper are approaching threshold and green cloverworm are abundant. I suspect producers will start spraying soon. Soybeans are not quite at R3, but levels have them concerned.” **Fleming**

McMaster, a local crop consultant, reported that he has “hit threshold levels for stink bugs in MG 4 soybeans. Have both brown and green. Also seeing increase levels of green cloverworms and soybean loopers but not at threshold levels. And podworm (corn earworm) is making an appearance.”

Cotton Situation

As of 12 August 2018, the USDA NASS South Carolina Statistical Office estimated that about 95% of the crop is squaring, compared with 90% the previous week, 95% at this time last year, and 97% for the 5-year average. About 75% of the crop is setting bolls, compared with 59% the previous week, 75% at this time last year, and 80% for the 5-year average. About



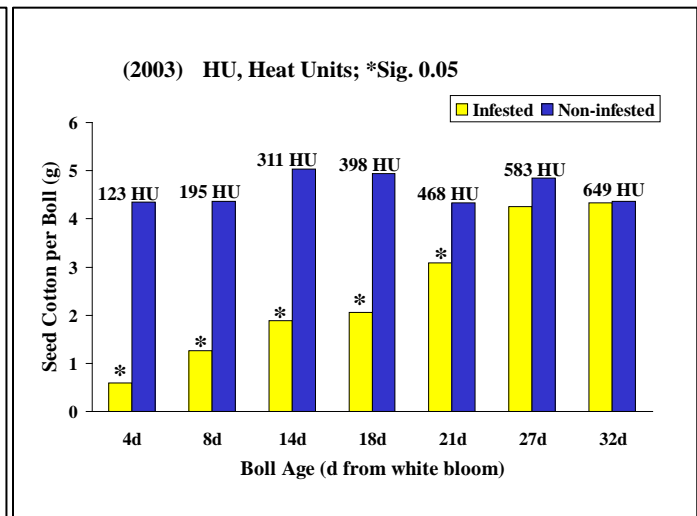
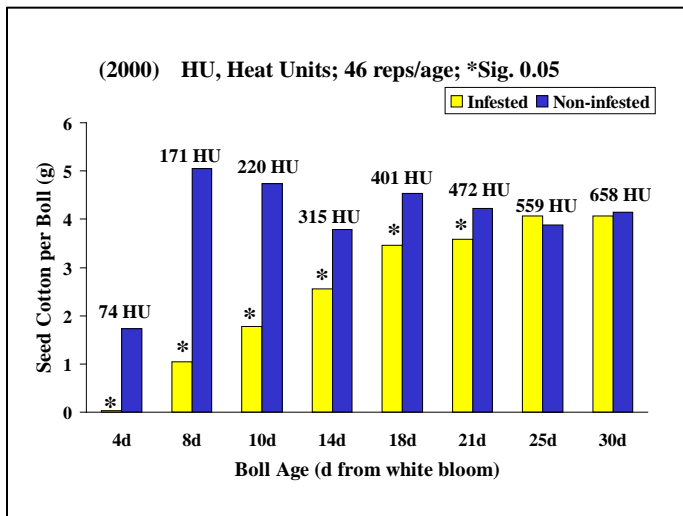
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1% of the crop has bolls opening, compared with 0% the previous week, 2% at this time last year, and 0% for the 5-year average. The condition of the crop was described as 20% excellent, 53% good, 24% fair, 3% poor, and 0% very poor. These are observed/perceived state-wide averages.

Cotton Insects

We are right smack dab in the middle of Stink Bug Month, and there are plenty of stink bugs in the system. If you have cotton that has been blooming for several weeks, and you have not made an application for stink bugs, you should check your fields. If you have treated for stink bugs within the last few days, take a breath, but go back about 7-10 days after the last spray, and check for stink bugs and assess boll injury again. As long as the crop is getting water and doing well, repeat scouting trips and treatments, as needed, through the 7th week of bloom, and then start looking for reasons to shut it down. Determining when to terminate sprays for stink bugs is not an exact science, but there are some data. The charts below show data I collected years ago (2000 and 2003) using caged stink bugs on bolls to investigate when bolls became “safe” from stink bug injury. Roughly, bolls can be considered safe at about 21 to 25 days after white flower or about 500 to 550 heat units for the boll. Heat units are calculated in cotton by taking the average daily temperature (Fahrenheit) and subtracting 60. For example, if the high temperature for a day is 95, and the low is 75, heat units calculate to 25 for that day $[(95+75)/2 - 60 = 25]$. If that same pattern happened each day for 21 days, it would calculate to 525 heat units. So, figure out which flowers you plan to protect until the end, and use all of this information (and other information like yield potential, etc.) to make that termination decision. How long the fall will keep providing good accumulation of heat units determines when our season winds down and how long we should protect cotton from insects, so pay attention to the long-term forecast. The white flowers in the field now are some of the last ones we need to protect (as bolls) from stink bugs.



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Bollworm is escaping control from some of our 2-gene cotton technology, but no crazy breakthroughs are being reported. Our most recent pheromone trap data indicate a trend up on capture of bollworm moths, so our next flight has started. We observed fresh, white eggs in the field today, and easy-to-spot moths were “flushed” as we walked the field. Continue to check for bollworm escaping control from the Bt toxins. Here is a mating pair of bollworm moths and a boll from 2-gene cotton damaged by bollworm from scouting done this week (I opened the boll to find the bollworm inside).

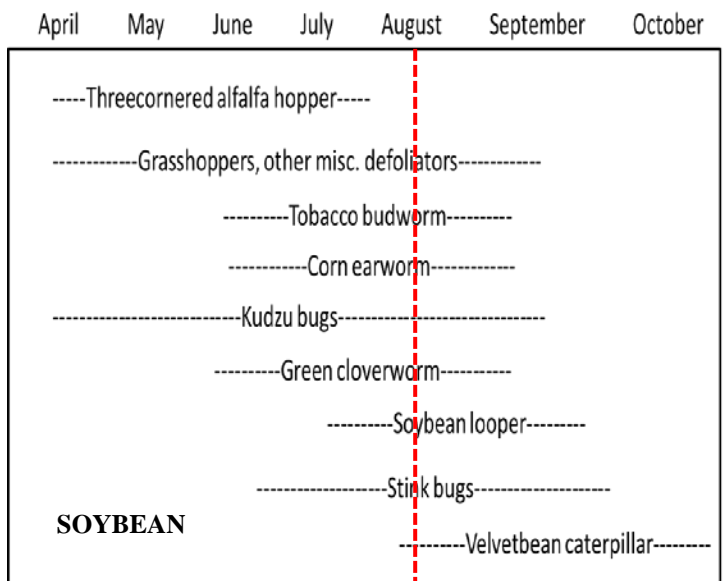


Soybean Situation

As of 12 August 2018, the USDA NASS South Carolina Statistical Office estimated that about 58% of the crop is blooming, compared with 28% the previous week, 80% at this time last year, and 69% for the 5-year average. About 27% of the crop is setting pods, compared with 4% the previous week, 38% at this time last year, and 23% for the 5-year average. The condition of the crop was described as 5% excellent, 66% good, 28% fair, 1% poor, and 0% very poor. These are observed/perceived state-wide averages.

Soybean Insects

We have much species diversity and pressure from insects in soybeans this week. For caterpillar species, we have soybean looper, green cloverworm, velvetbean caterpillar, podworm, and a few armyworms in the mix. Be able to identify the moths and larvae in soybeans, as good control with insecticides depends on accurate identifications. Also, in some soybeans today at the R4/R5 stage of




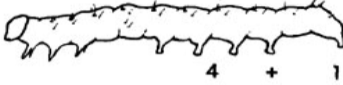


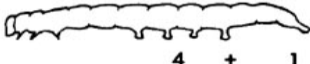



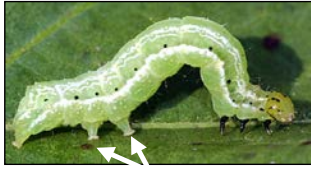




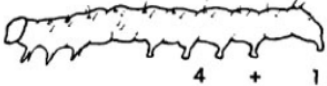

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growth, we observed significant numbers of stink bugs, particularly freshly hatched eggs of southern green stink bug.

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 (2017) Prepared by Jeremy Greene, Professor of Entomology

FIELD KEY TO COMMON SOYBEAN CATERpillARS

	 $4 + 1$	CORN EARWORM 4 + 1 pair prolegs Curls up in hand Black "warts" on body	
	 $4 + 1$	VELVETBEAN CATERPILLAR 4 + 1 pair prolegs Very active when handled	
	 $2 + 1$	SOYBEAN LOOPER 2 + 1 pair prolegs Fatter at tail end Looping movement	
	 $3 + 1$	GREEN CLOVERWORM 3 + 1 pair prolegs Not fatter at tail end Looping movement	
	 $4 + 1$	TOBACCO BUDWORM 4 + 1 pair prolegs Curls up in hand Black "warts" on body	

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Bioassay Results for Pyrethroid Efficacy on *H. zea* (Updated)

We have been testing the susceptibility of *Helicoverpa zea* (bollworm, corn earworm, podworm, etc.) to a pyrethroid insecticide in a laboratory bioassay using a coated glass vial technique since 2007. This test has allowed us to monitor any change in susceptibility over time, so it is labeled a 'resistance monitoring' method. The test is only designed to measure change in susceptibility over time for the population of moths sampled. However, the results from this testing method were used to document resistance developing in tobacco budworm that also appeared in field failures. We have observed problems in the field in selected populations of bollworm over the years, but failures with pyrethroids have not been

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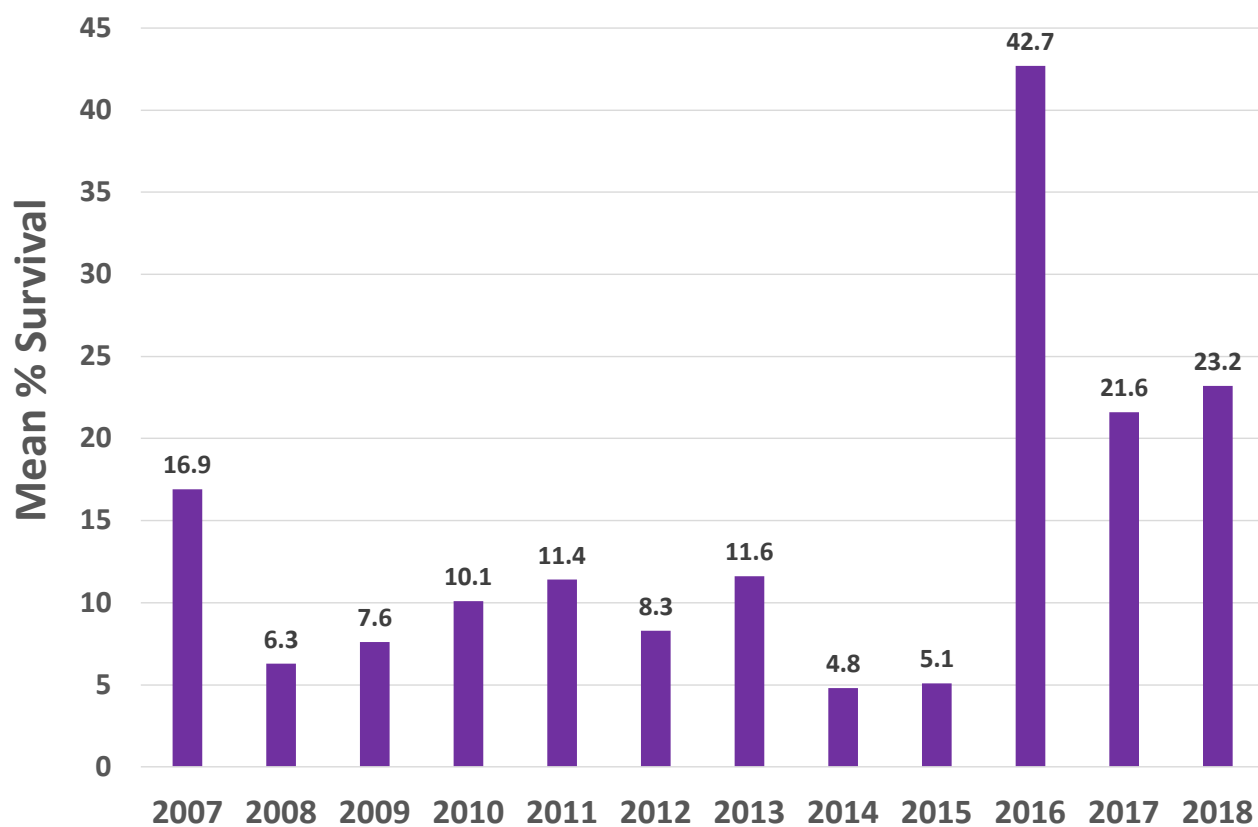
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widespread. The charted data below illustrate that we are observing decreased susceptibility of bollworm to a pyrethroid insecticide over time. We will have to see what happens in the field. Although we saw high average survival in 2016, that declined in 2017, and the trend so far this year is also down. For now, I think we are generally okay with pyrethroids providing fair-to-acceptable control of bollworm (podworm in soybeans), but we need to spray the smallest caterpillars we can. We need to tread cautiously, though, and watch those treatments carefully. We could be seeing the beginning of the end for pyrethroids controlling bollworm, if this trend continues. They have already lost control of bollworm with pyrethroids in the midsouthern states, where insect control programs have been historically aggressive. Other materials (Prevathon, Intrepid Edge, Blackhawk, Steward, etc.) are alternatives.

***Helicoverpa zea* Pyrethroid Susceptibility in SC – 2007-2018 (5 ug cypermethrin per vial)**



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Bollworm & Tobacco Budworm



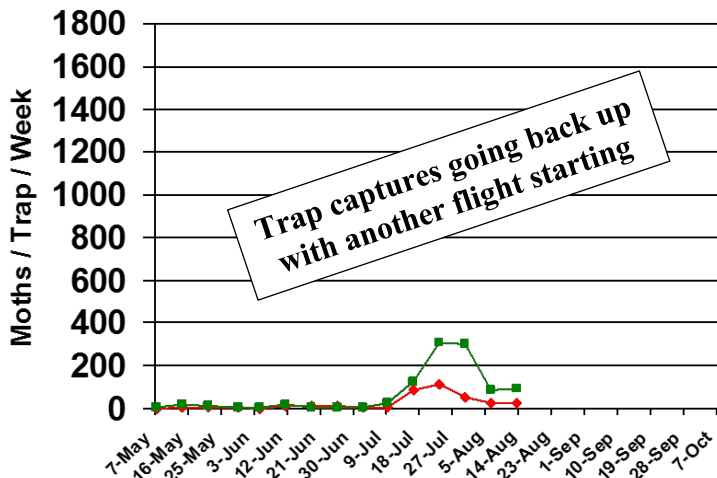
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2017 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these

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.

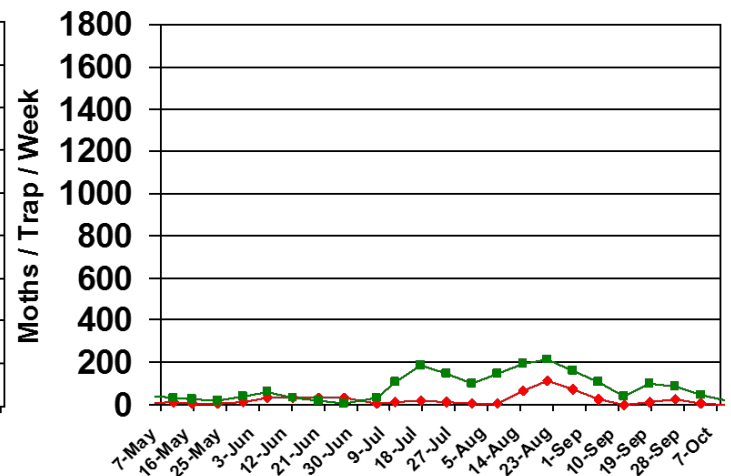
TBW
BW



Pheromone Trap Capture SC - 2018

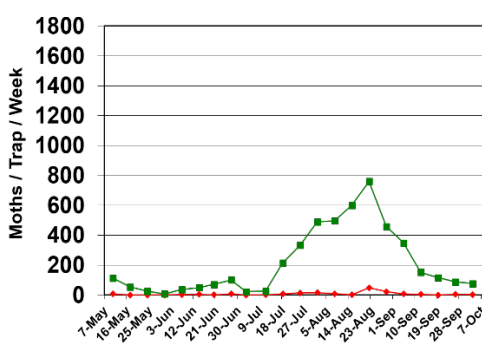


Pheromone Trap Capture SC - 2017

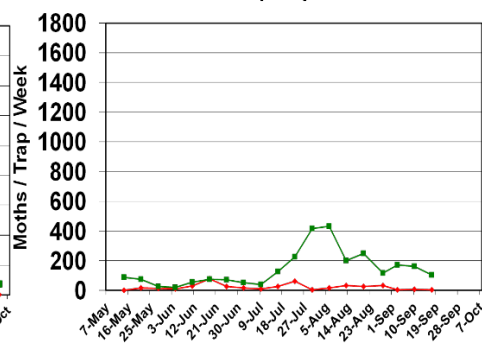


Trap data from 2007-2016 are shown below for reference to other years of trapping data from EREC:

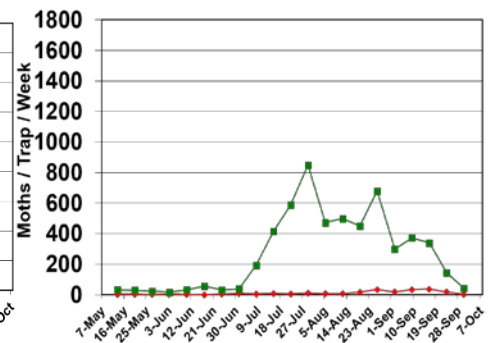
Pheromone Trap Capture SC - 2007



Pheromone Trap Capture SC - 2008



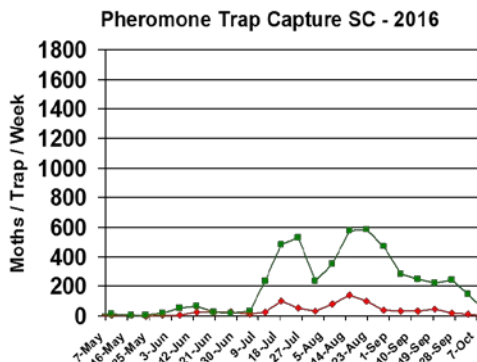
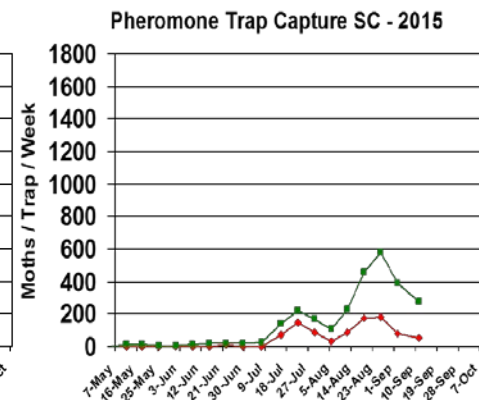
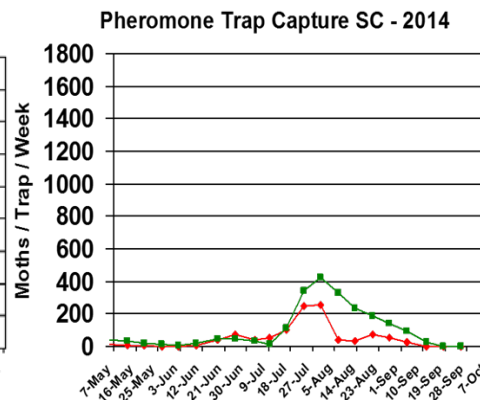
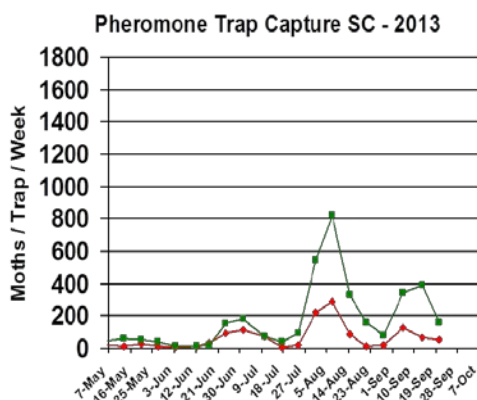
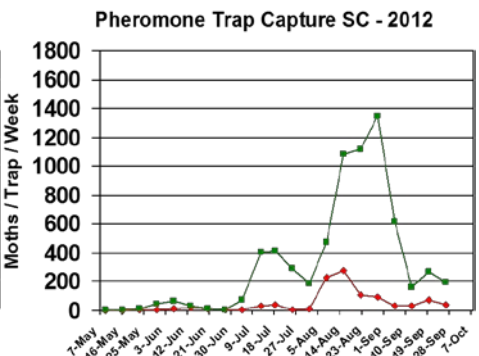
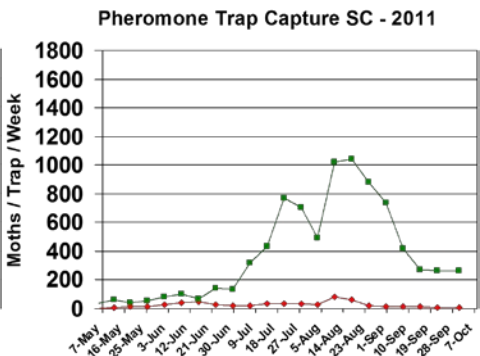
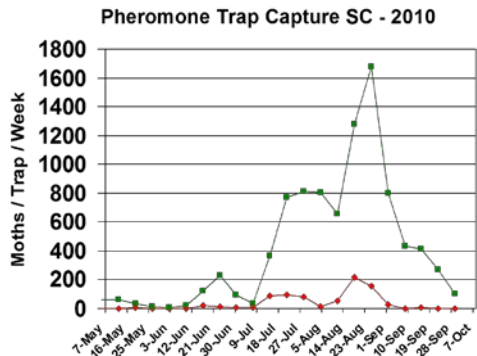
Pheromone Trap Capture SC - 2009



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Pest Management Handbook – 2018

Insect control recommendations are available online in the 2018 South Carolina Pest Management Handbook at: <http://www.clemson.edu/extension/agronomy/pest%20management%20handbook.html>

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For historical cotton/soybean insect newsletters:

<http://www.clemson.edu/extension/agronomy/cotton1/newsletters.html>

Sincerely,

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



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