



Cotton/Soybean Insect Newsletter

Volume 12, Issue #8

Edisto Research and Education Center in Blackville, SC

22 June 2017

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.



Training Opportunity

We will offer an in-field scouting school on 19 July and spend a couple of hours in cotton and soybean fields demonstrating techniques for estimating populations of insects, discussing management options for important insects, and answering questions. Jonathan Croft, Charles Davis, and Jeremy Greene will be the speakers at this scouting school. This hands-on, in-field training will begin at 9 AM at the Cameron Cotton and Seed Company location (301 Boyce Lawton Drive, Cameron, SC 29030) and conclude at 12 PM with lunch and final discussion. Recertification credits for pesticide licenses and CCA will be available. Please contact Jonathan at 803-534-6280 or croft@clemson.edu by 17 July if you plan to attend. We need a good estimate for attendance to plan for the meal and handouts. Additional training opportunities in other areas of the state will be announced soon.

News from Around the State

Drake Perrow, producer and consultant near Cameron, SC, reported that he is observing spider mites in cotton already. This is very early. Some of the populations were in cotton treated with aldicarb that should have been still providing suppression at about 35 days after planting. We will gather more data on this. Drake also reported spotty aphids and multiple fields exceeding threshold for tarnished plant bugs (TPB) in squaring cotton. He reported square loss in those fields also most likely due to TPB. Those fields were going to get treated for TPB with a neonicotinoid insecticide.

Cotton Situation

As of 18 June 2017, the USDA NASS South Carolina Statistical Office estimated that about 97% of the crop has been planted, compared with 95% the previous week, 96% at this time last year, and 96% for the 5-

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Public Service Activities

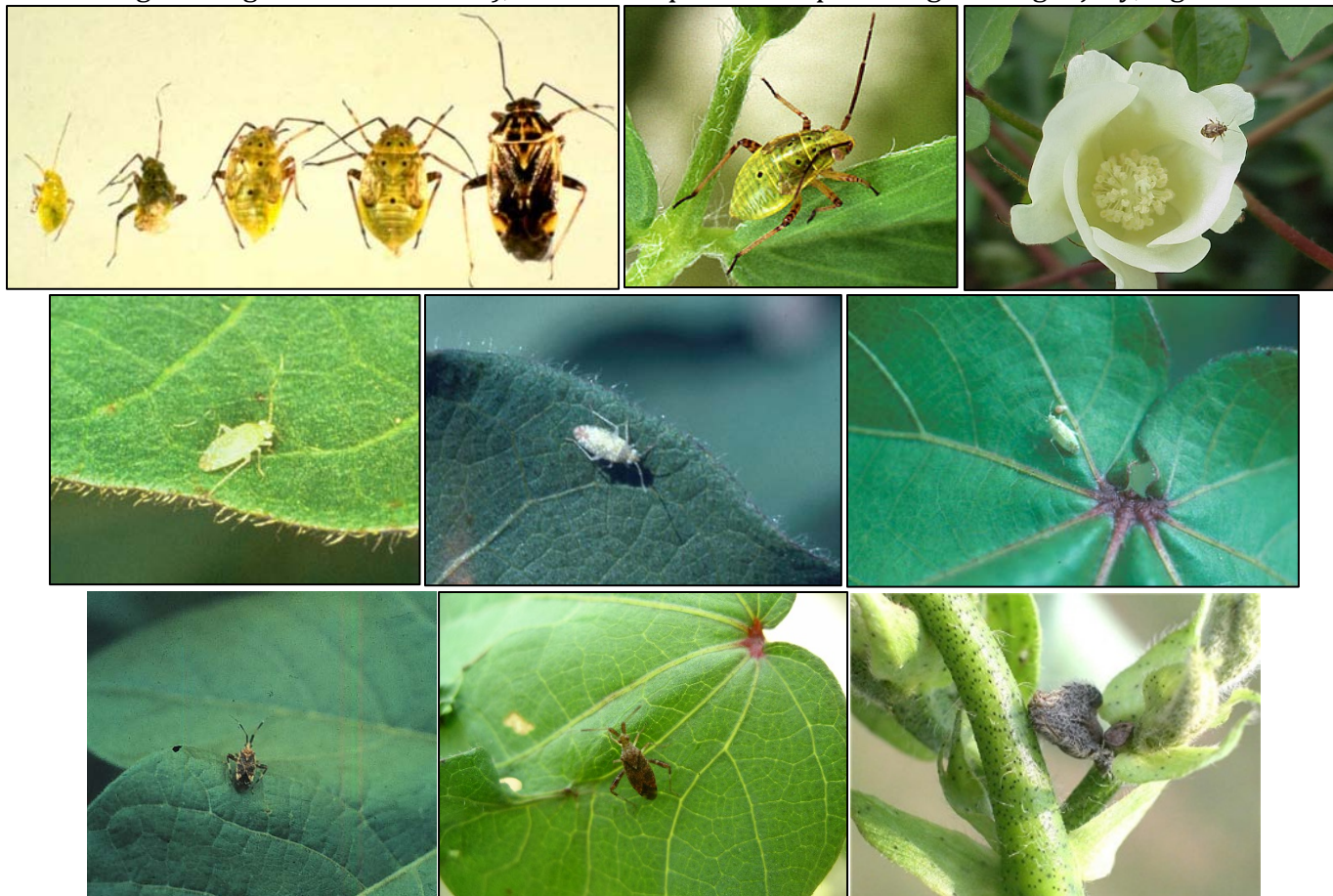
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year average. About 23% of the crop is squaring, compared with 11% the previous week, 10% at this time last year, and 14% for the 5-year average. The condition of the crop was described as 32% excellent, 57% good, 11% fair, 0% poor, and 0% very poor.

Cotton Insects

As stated in the newsletter for the last couple of weeks, we need to scout for plant bugs. Not all fields will develop treatable populations of plant bugs, so you have to go scout. Any cotton near corn should be checked, for sure, as the adults will readily move out of corn into cotton. Check larger fields also. I suspect that field size has something to do with infestation levels. Because of the numerous reports of fields needing treatment for tarnished plant bug (TPB), you should be scouting. Check square retention (you want it above 75-80%), and use a sweep net to check for adults and nymphs of TPB and other plant bugs, such as cotton fleahoppers and clouded plant bug. Here are some photos of these species. Top row of photos: TPB immatures and adult, left; 5th instar TPB, center; TPB adult in bloom, right. Middle row of photos: Cotton fleahopper adults. Bottom row of photos: Adults of clouded plant bug, left and center (note the large 1st segment of antennae); "blasted" square from plant bug feeding injury, right.



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We will recommend the threshold they use in the Mid-South of 8 TPB per 100 sweeps (so about 2 or so per 20-25 sweeps would be close to threshold) or about 3 TPB per 6 rowft using a drop cloth. Checking cotton before bloom with a sweep net is what should be done right now. Here are our recommendations for insecticides from the 2017 Pest Management Handbook.

PLANT BUGS (COTTON FLEAHOPPER AND TARNISHED PLANT BUG)

Product	Product/acre	Lb ai/acre	Acre/gal	REI	PHI	Comments
acephate		0.25-0.75		24 hr	21 d	
Orthene/Acephate 97	4.1-12.3 oz		-			
Orthene/Acephate 90	4.4-13.3 oz		-			
imidacloprid		0.031-0.0625		12 hr	14 d	
Couraze 4 F	1.5-2.0 oz		64-83			
Couraze 2 F	3.0-4.0 oz		32-42.6			
Admire Pro 4.6	0.9-1.7 oz		75-142			
thiamethoxam		0.05-0.0625		12 hr	21 d	5 oz limit for season
Centric 40 WG	2.0-2.5 oz		-			
flonicamid		0.088		12 hr	30 d	
Carbine 50 WG	2.8 oz		-			
dicotophos (R)		0.25-0.5		6 d	30 d	16 oz limit post bloom
Bidrin 8 E	4.0-8.0 oz		16-32			
oxamyl (R)		0.25-0.5		48 hr	14 d	
Vydate 3.77 CLV	8.5-17.0 oz		7.5-15			
clothianidin		0.05-0.1		12 hr	21 d	12 oz limit for season
Belay 2.13	3.0-6.0 oz		21.3-42.6			
novaluron		0.058-0.078		12 hr	30 d	Effective on nymphs only
Diamond 0.83 EC	9.0-12.0 oz		14.2-21.3			
sulfoxaflor				24 hr	14 d	End user stocks only
Transform 50 WG	0.75-2.25 oz	0.23-0.071	-			

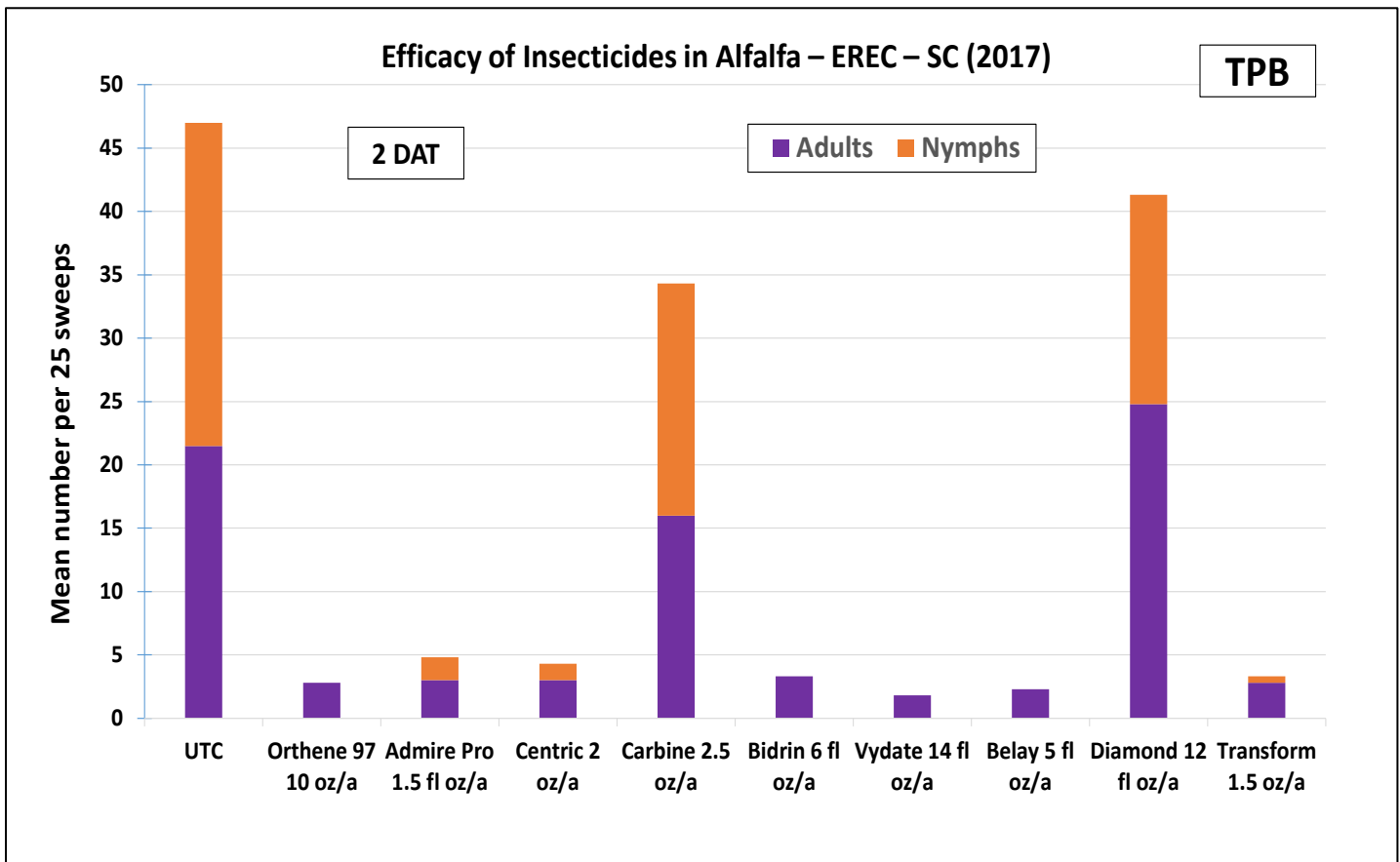
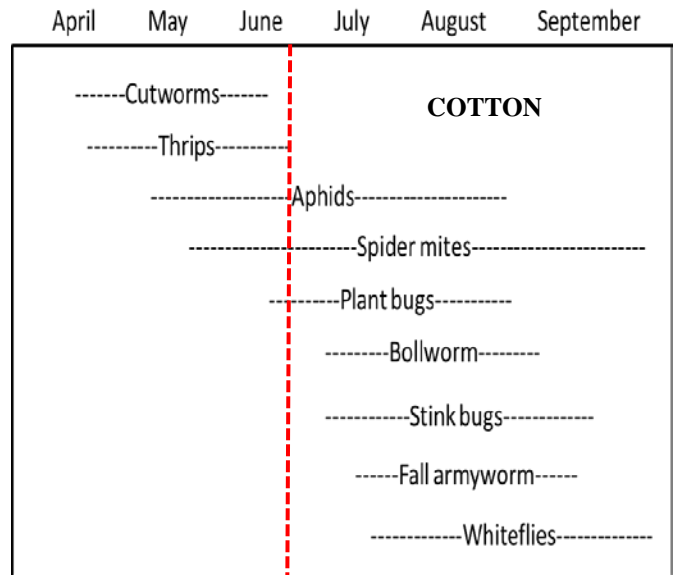
Plant-bug injury to squares rarely causes economic problems in South Carolina. An economic problem could develop if an early-maturing variety was planted late, an average of **three plant bugs per 6 rowft** of row are detected using a beat cloth, **eight or more plant bugs are found per 100 sweeps** with a sweep net, or 25% or more of squares have been lost. Pyrethroid insecticides generally provide control of plant bugs when applied at stink bug/bollworm control rates. Avoid treating Bt cotton for plant bugs unless absolutely necessary in June and July as subsequent reductions in beneficial populations often trigger problems with bollworm or fall armyworm. Plant bugs can also injure small bolls like stink bugs. For combinations of plant bugs and stink bugs feeding on small bolls, use boll-injury treatment thresholds for stink bugs.

I put out a trial in alfalfa to check the efficacy of our recommended products for plant bugs, and the results are on the next page. Keep in mind that alfalfa has a very different canopy structure, with fewer places for TPB to hide. In cotton, they can get into square bracts and avoid the direct spray, meaning that residual control is important, as they move around. These results might not directly relate to what would happen in cotton, but I think they are a good indication of general efficacy. Numbers of TPB were reduced statistically in all treatments at 2 days after treatment, except for Diamond, an IGR that is slow

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acting and only active on immature insects, and Carbine, a material that is also slow acting and likely not the best option for TPB in terms of efficacy (according to comments from my midsouthern colleagues with more experience on controlling TPB). I failed to put a pyrethroid insecticide in this trial (moving too fast and not thinking clearly), but I think we would see control with pyrethroids. However, we do not want to use a pyrethroid, an OP, or carbamate for TPB in the pre-bloom window, as this would decimate the building population of natural enemies and likely lead to problems with bollworm. So, we are better off using one of the “softer” materials (i.e. neonicotinoids) here showing good efficacy on TPB.



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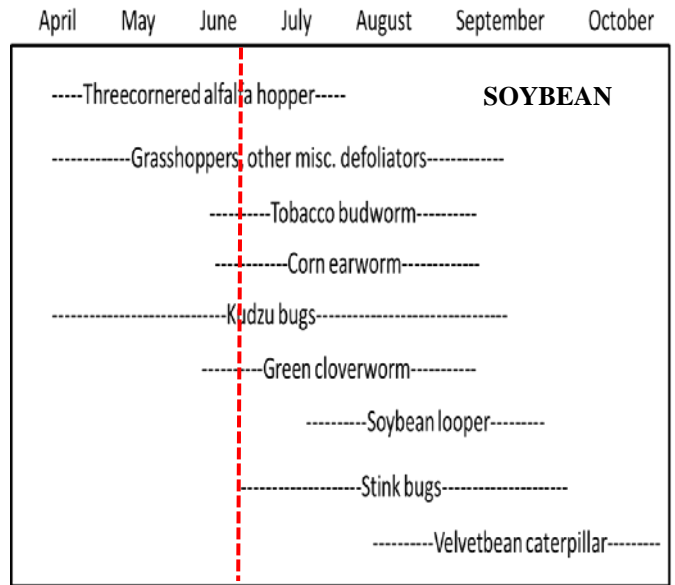


Soybean Situation


As of 18 June 2017, the USDA NASS South Carolina Statistical Office estimated that about 81% of our soybean crop has been planted, compared with 69% the previous week, 84% at this time last year, and 80% for the 5-year average. About 65% of the crop has emerged, compared with 48% the previous week, 70% at this time last year, and 64% for the 5-year average. About 2% of the crop is blooming. These are observed/perceived state-wide averages.


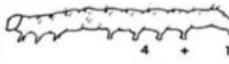





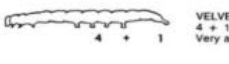

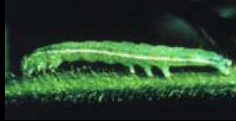


Soybean Insects

Still not much activity on young soybeans, but we need to scout for the stem feeders right now. Those include kudzu bugs and threecornered alfalfa hoppers (TCAH). Kudzu bugs are seemingly making a comeback in soybeans in numerous locations, as reports from GA and parts of SC are coming in about a "resurgence" of sorts, despite the hard hit the species has taken from the entomopathogenic fungus *Beauveria bassiana*, an egg parasitoid also from Asia, and other natural enemies that have recognized the pest. Go check for kudzu bugs...you know what to do and when, as our work on this species was extensive during the time it was a significant pest for us. Spray when you have reproducing populations (1 nymph per sweep). Continue to check also for TCAH and treat only if numbers of TCAH reach several per rowft or sweep and feeding (girdling of stems) is observed. Pyrethroid insecticides typically do a fine job in controlling TCAH. Also, on older soybeans, start looking at defoliation, and pay attention to the moths taking short flights from row to row while you are walking fields.



Tobacco budworm moth. Caterpillars look identical to corn earworm larvae.



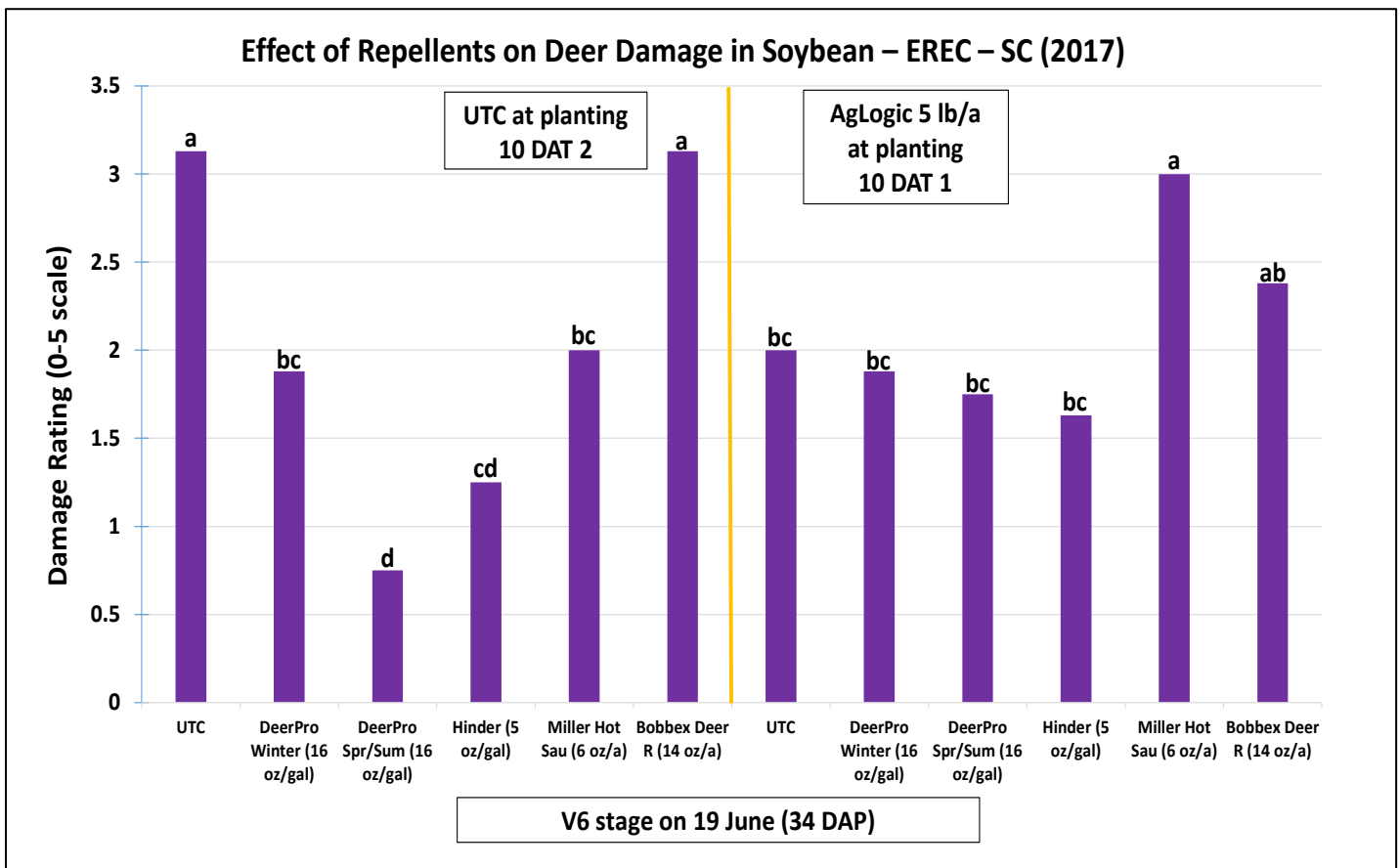
	 <p>CORN EARWORM 4 + 1 pair prolegs Curls up in hand Black "warts" on body</p>	
	 <p>SOYBEAN LOOPER 2 + 1 pair prolegs Fatter at tail end Looping movement</p>	
	 <p>VELVETBEAN CATERPILLAR 4 + 1 pair prolegs Very active when handled</p>	
	 <p>GREEN CLOVERWORM 3 + 1 pair prolegs Not fatter at tail end Looping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

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Deer continue to be an issue on soybeans, and it is a very tough problem to address. Here are some data I collected from a trial to evaluate the effects of repellents for deer feeding injury in soybeans. By the last rating, there were a few foliar materials that reduced feeding injury after the second application (left side of chart). At about a month after planting, there was less of an effect with only one foliar application of the foliar repellents where we used aldicarb at planting for control of insects (right side of chart). We plan to provide some costs for these materials, and we are not recommending anything at this point from 2017 research. Research conducted last year indicated that when aldicarb was applied on a 5-inch band at planting for insect control, it resulted in good repellency for deer. This was an observation...we are not recommending aldicarb for reducing deer injury. We also observed repellency with the soap-based products Hinder (5 fl oz/gal water) and insecticidal soap concentrate (2.5 fl oz/ gal water) in 2016. Additional trialwork in SC this year will yield more data on this project.



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Bollworm & Tobacco Budworm

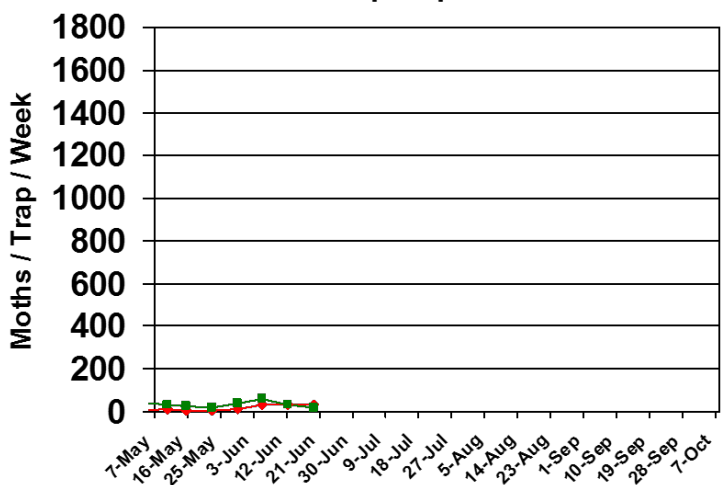


Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2016 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these

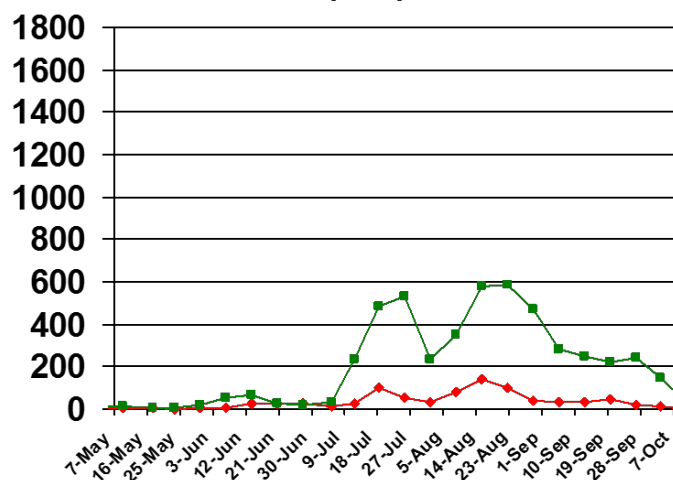
data as a measure of moth presence and activity in our local area near my research plots. The numbers are not necessarily representative of the species throughout the state.



Pheromone Trap Capture SC - 2017

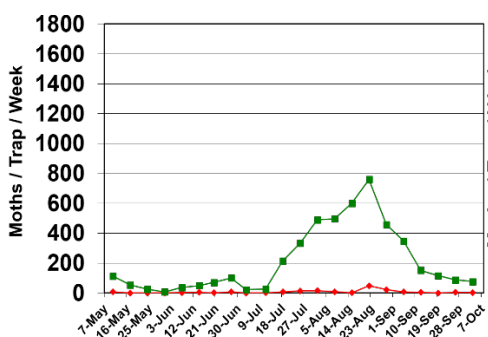


Pheromone Trap Capture SC - 2016

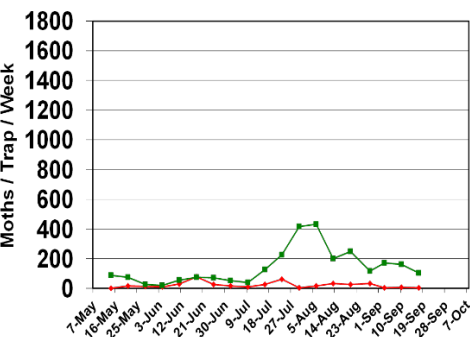


Trap data from 2007-2015 are shown below for reference to other years of trapping data from EREC:

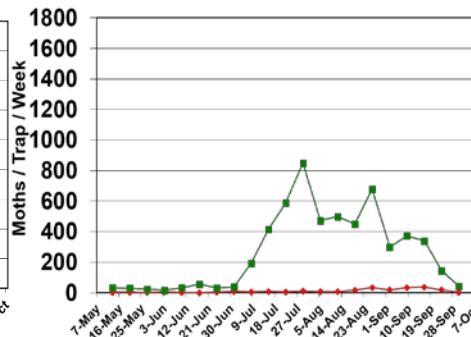
Pheromone Trap Capture SC - 2007



Pheromone Trap Capture SC - 2008



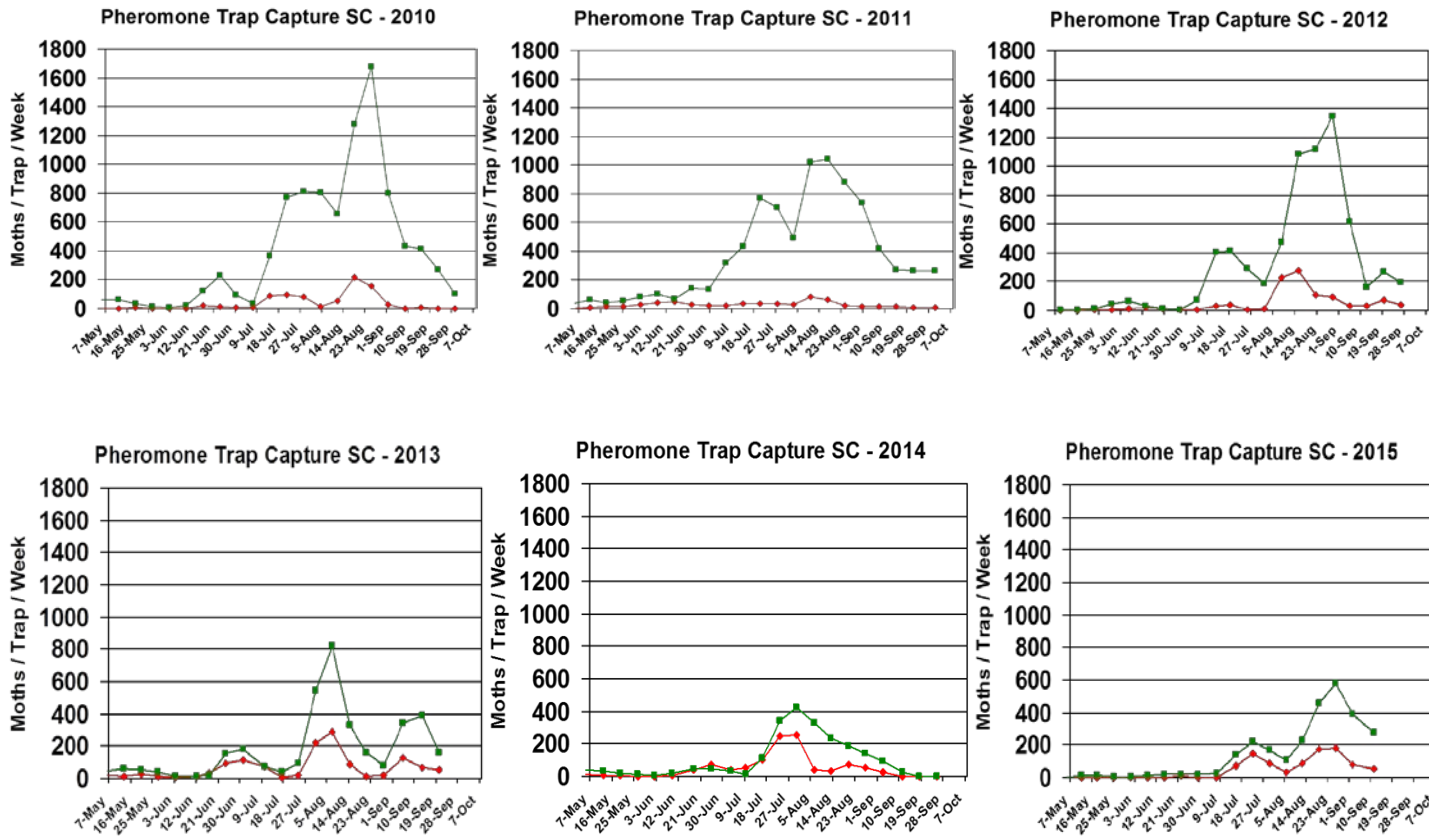
Pheromone Trap Capture SC - 2009



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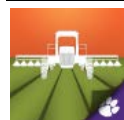
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Pest Management Handbook – 2017

Insect control recommendations are available online in the 2017 South Carolina Pest Management Handbook at: <http://www.clemson.edu/extension/agronomy/pest%20management%20handbook.html>

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:

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

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Sincerely,

A handwritten signature in black ink that reads "Jeremy K. Greene".

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



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