



Cotton Insect Newsletter

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Edisto Research & Education Center in Blackville, SC

10 May 2007

Crop Situation

What a difference a year makes! We planted nearly 300,000 acres of cotton in SC last season, but projections are close to a 30% loss of cotton acres in 2007. The estimate stands at 200,000 acres of intended acres. The current situation continues to be very dry. In some areas, there should be adequate moisture with the recent scattered showers, but overall it is DRY. After the freeze we had a few weeks back, temperatures have been very warm until the last week or so, but I would expect that the cotton crop should grow very well this month, provided we get some desperately needed rain. The NASS had us at about 0, 0, 0, and 4% planted for each week, respectively, of April. That was short of the 5-yr averages of 1, 3, 7, and 13% planted for the same weeks in April. After the first week in May, we are 12% planted, well below the 5-yr average of 27%.

News from Above the Lakes

No news to report this week. This is your turn for input – send your comments and observations to me.

News from Below the Lakes

James Bookhart reported that he has recently “visited a few fields that had high populations of grasshoppers [where] cotton will be emerging in a few days.” He asked if we should “treat the seedling cotton right away, wait to see damage, or don’t treat [for grasshoppers]?” If we should treat, “what materials and rates would be best and will they also control thrips?” See “Grasshoppers in Seedling Cotton” below.

Thrips

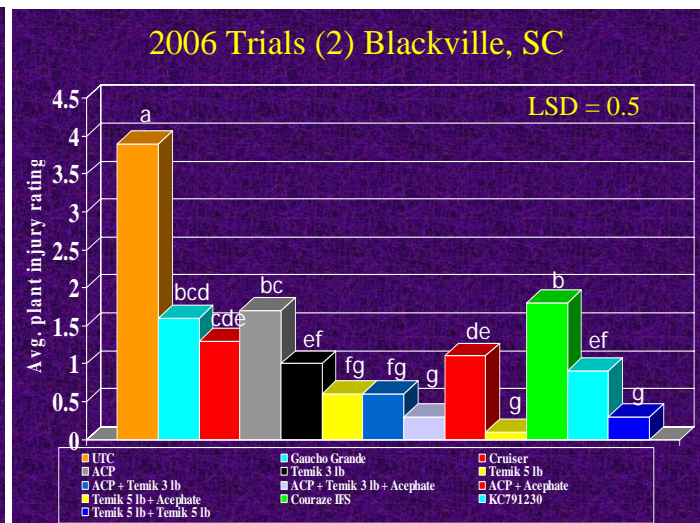
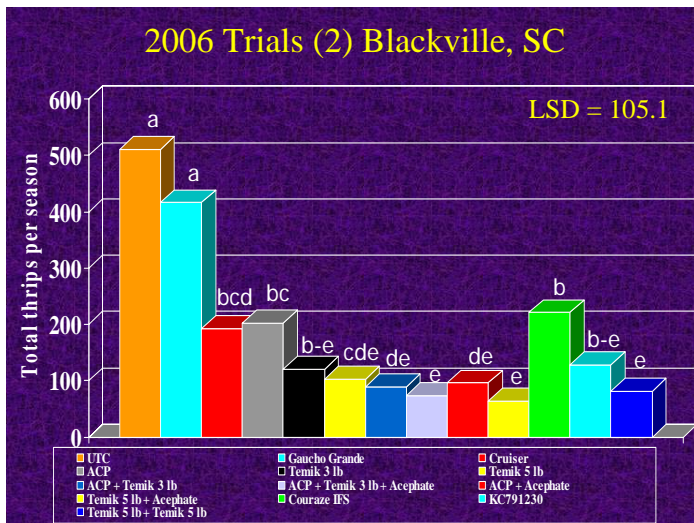
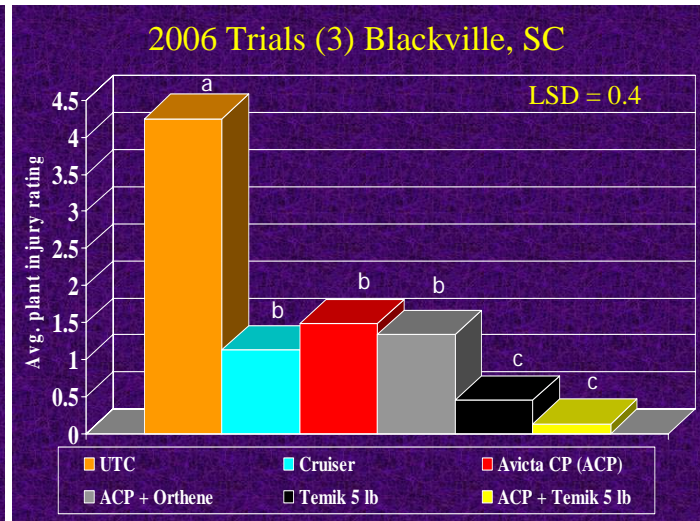
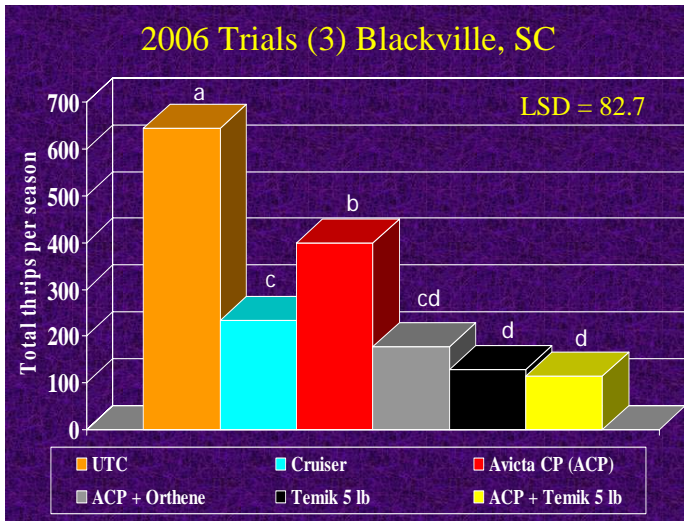
I have stopped trying to predict what populations of insects might be like in a given year based on weather patterns leading up to the current situation. So, I would not expect the dry conditions we have had to have an impact one way or another on populations of thrips. I would prepare for another moderate to heavy early season with thrips. Tobacco thrips, *Frankliniella fusca*, continues to be our predominant early-season species, and there are numerous options for controlling thrips in cotton. In addition to Temik, the long-time standard in-furrow insecticide/nematicide, there are seed treatments for thrips control, such as Gaucho Grande, Cruiser, Avicta Complete Pak (ACP), and Aeris. ACP and Aeris are choices for an insecticide/nematicide combination. To complete the options available, there are in-furrow sprays and foliar sprays for controlling thrips. You have probably seen data supporting (or not supporting) the various options for control of these pests in cotton. Your selections for seed and at-planting preventative pesticides for thrips and nematodes have likely already been made. Again, I am anxious to see how 2007 turns out. Below are summary data from trials I conducted last year in SC. On the left are seasonal thrips totals across trials. On the right are average injury ratings for the season, with “10” being dead plants and “0” being no visible injury. In the first set of charts, ACP plus 5 lb of Temik at planting resulted in the lowest seasonal total of thrips, but Temik alone at 5 lb and ACP plus foliar

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applications of acephate (Orthene) as needed were included in the lowest statistical grouping. In the second set of charts, the lowest grouping of thrips for the season all had aldicarb (Temik) in common, except for ACP plus applications of Orthene as needed. Symptoms of feeding injury were lowest where 5 lb of Temik was used at planting or when ACP plus Temik at planting and/or foliar Orthene were used in combination.



Grasshoppers in Seedling Cotton

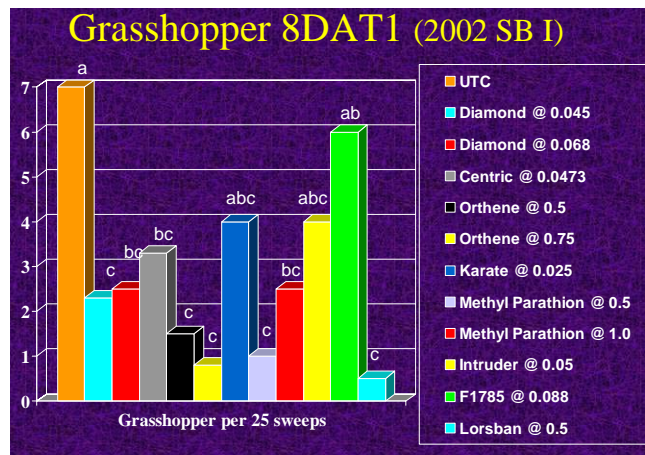
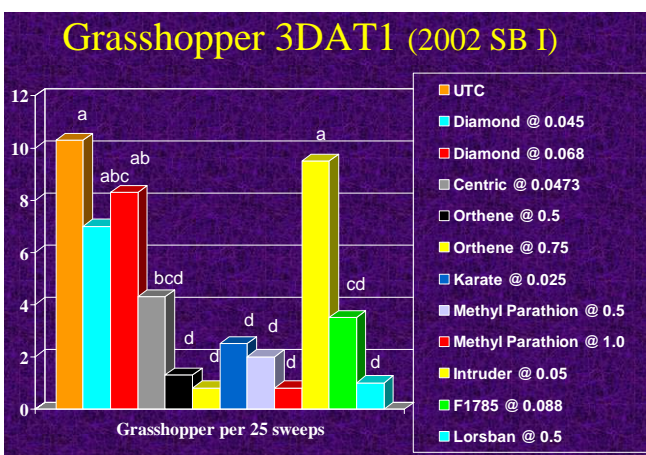
In the section “News from Below the Lakes”, James raised some very good questions about controlling grasshoppers in seedling cotton. There are a few options in addressing this problem. In my opinion, the first response should be to assess the situation and make a decision based on the severity of infestation and potential damage. That is the tricky stage. After you have a stand of cotton and can note damage that often results in stand reduction, it is easier to make a decision on what to do. But there is the possibility of seeing no visible

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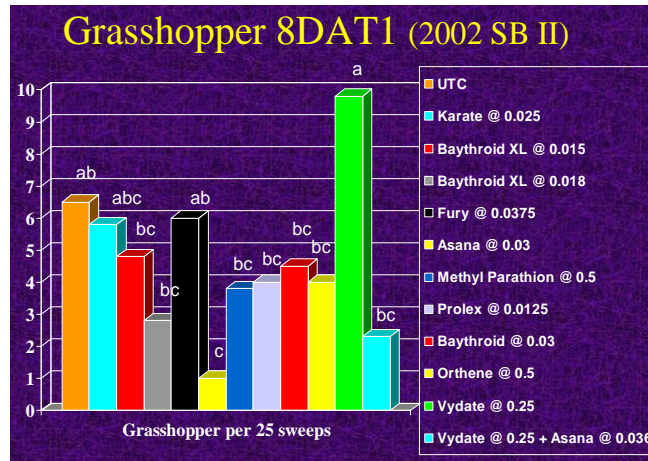
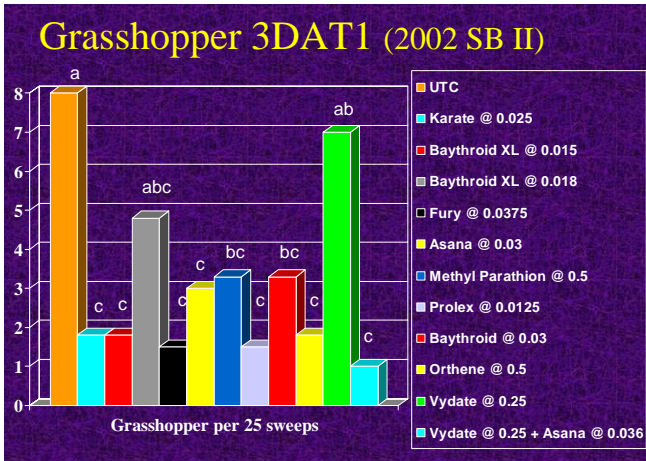


signs of injury that threaten the stand, so predicting what might happen is difficult. Sometimes weeds are preferred and little damage is realized. Problems with grasshoppers can be worse in minimum tillage operations where soil disturbance is minimized. Because grasshopper egg pods are placed into the soil, their fate is controlled by the state of the soil. If the soil remains undisturbed, they can better survive winter temperatures and be “ready to go” in the spring – usually hatching out in late April and May. Particular attention should be given to young cotton in reduced tillage systems, as conditions are optimized for grasshoppers under this scenario. Although grasshoppers have a high reproductive capacity, weather is the main factor affecting grasshopper populations. Because it is so dry, seedling cotton is more susceptible to injury from grasshoppers. We often see high infestations of grasshoppers under droughty conditions. In fact, outbreaks of grasshoppers usually follow several years with hot, dry summers and warm autumns. Low relative humidity and dry weather in general increases survival of nymphs and adults. Long summers and warm autumns provide female grasshoppers with more time to feed and lay eggs. Dry conditions also reduce the incidence of diseases in grasshoppers, releasing them from biological control. Below are data from insecticide efficacy trials on soybeans I conducted with Dr. Gus Lorenz during my time in the Mid-South. We counted grasshoppers in most of the trials we conducted. Although the data are a few years old, many of the insecticides are labeled and commonly used in cotton today. A quick look at the data reveals that acephate (Orthene) was one of the better materials for controlling grasshoppers. As you know, acephate is one of the most popular foliar materials for thrips, so overlap there is beneficial for controlling both grasshoppers and thrips on seedling cotton. But notice that the rates in these trials were about twice what you would use for thrips. Lorsban did a fine job on grasshoppers as did some of the pyrethroids, methyl parathion, etc. Border rows and ends of fields are particularly susceptible to initial infestations, so border sprays are often effective. On cotton and non-crop land (ditches, fallow areas, pastures, etc.), Dimilin at 2 oz per acre has done a good job in the past on immature grasshoppers (it will not work on adults – knockdown material required) and provides some residual control for a couple of weeks. Overall, treatment decisions for grasshoppers in seedling cotton are difficult when trying to be proactive and reactive decisions can sometimes be too late. It is probably best to be reactive and start with border treatments when stands are threatened. This problem is a field-by-field call and requires regular observation to get it correct.



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Non-Bt Cotton

Resistance management guidelines for *Bt* cotton (Bollgard, Bollgard II, WideStrike) have not changed for 2007. The EPA requires this of companies with registered *Bt* cotton technology. Monsanto is still obligated to promote, monitor and enforce compliance with the current guidelines for both Bollgard and Bollgard II products. The same goes for Dow AgroSciences and WideStrike cotton. We should all strive to legally plant this technology and help preserve it by following the guidelines on non-*Bt* refuge. Guidelines are available at:

http://www.monsanto.com/monsanto/us_ag/content/stewardship/irm/2007/bollgard.pdf and
<http://www.dowagro.com/widestrike/steward/refuge.htm>

Overview of Available Transgenic *Bt* Cotton Technology - 2007

- Single protein - “First-generation *Bt* cotton”
 - **Bollgard** with Cry1Ac toxic protein (endotoxin)
- Dual protein – “Second-generation *Bt* cotton”
 - **Bollgard II** with Cry1Ac and Cry2Ab2 proteins
 - **WideStrike** with Cry1Ac and Cry1F proteins

Free Aphid Fungus Sampling Service

Despite the lingering problems we had with aphids last year, it remains my opinion that populations of aphids seldom need treatment with insecticides in cotton, but occasionally outbreaks do occur, and treatment is justified. Very often we get help from a naturally-occurring fungus that attacks high populations of aphids. The aphid fungus was delayed last year, and problems persisted. Last year would have been an excellent year to have monitored the incidence of fungus in aphids. Please contact the Cotton Aphid Fungus Sampling Service in Arkansas if you are interested in sending in field samples to determine how fungal epizootics are proceeding this year. Growers and other consultants in your area can participate in this FREE service. I encourage you to participate. Their email address is: aphid@uark.edu Just let them know that you are interested in the free service, and provide your mailing address and fax number. If you are not familiar with it, it basically involves

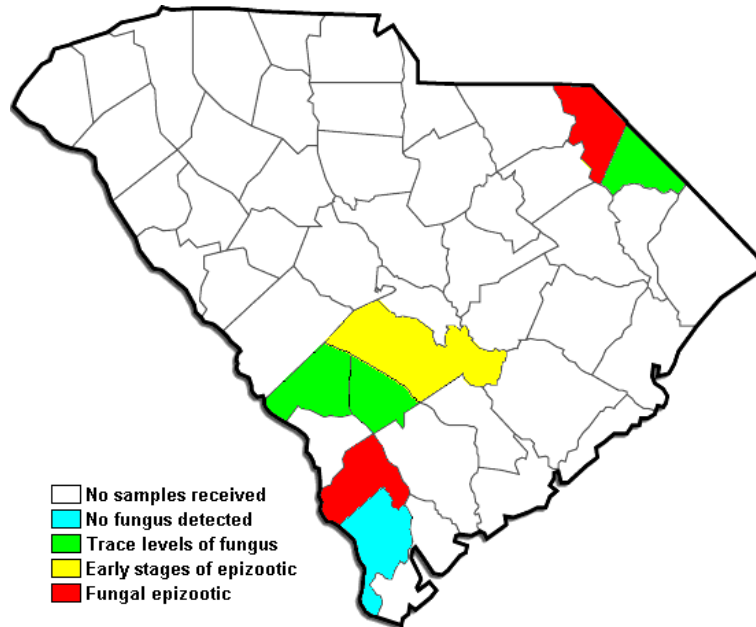
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pulling leaves with aphids from fields you would like to know the level of aphid fungus, putting them in the provided vials of alcohol, and putting the provided postage-paid envelope in the mail. You get your results within a couple of days. That is basically it, but check out their website, if you would like more details. Get your kits now and be ready - www.uark.edu/misc/aphid

Our situation with the aphid fungus looked like this last year.



Need More Information?

Log on to the following webpage to view important cotton management recommendations, data, and historical cotton insect newsletters: <http://www.clemson.edu/scg/ipm/cotton.html>

Sincerely,

Jeremy K. Greene, Ph.D.
Cotton Entomologist