



## Cotton Insect Newsletter

Volume 2, Issue #14

Edisto Research & Education Center in Blackville, SC

9 August 2007

### Fall Field Day

This is a reminder that you are invited to our Fall Field Day at the Edisto Research and Education Center near Blackville, SC, on 6 September 2007. Registration will begin at 9:00AM. Tours and programs will begin at 9:30AM. Lunch will be from 12:00 to 1:00PM. The cotton/soybean program will be immediately after lunch. An early copy of the program will be available and distributed soon.

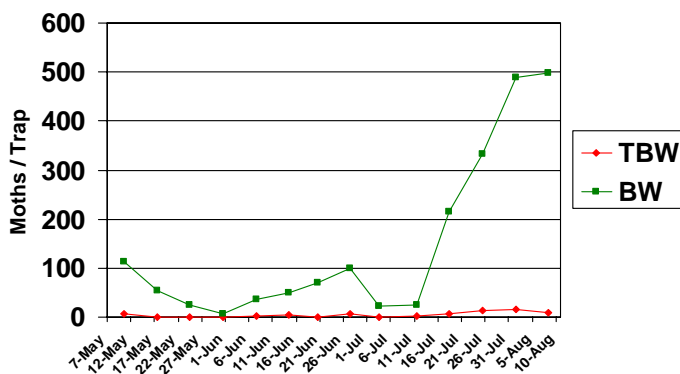
### Crop Situation

The USDA NASS South Carolina Statistical Office had our progress at 96% squaring for 5 August 2007, just behind the 5-yr average of 97%. As of the same date, 41% of the crop is setting bolls, behind the 5-yr average of 63%. About 2% of the state's cotton crop was reported to be in excellent condition. The remainder was reported as 35% good, 49% fair, 11% poor, and 3% very poor. These are observed/perceived state-wide averages.

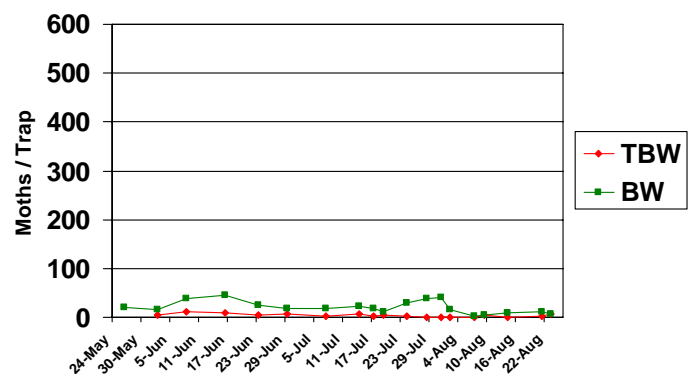
### Tobacco Budworm & Bollworm

Captures of adult tobacco budworm and bollworm in pheromone traps at EREC for this season and last season are pictured below. We detected reduced numbers of tobacco budworm moths this past week. Captures of bollworm moths continued to increase but started to possibly show the peak in the flight. The scales on the 2007 and 2006 charts are the same and demonstrate how much larger our bollworm numbers continue to be this year compared with last year. The numbers from this past week are again about ten times higher than our highest weekly capture all of last year.

Pheromone Trap Capture (EREC - 2007)



Pheromone Trap Capture (EREC - 2006)



It is still easy to see bollworm moths flying everywhere in cotton this week, and egg pressure is still high in many places. Some of our untreated non-Bt plots at EREC have 95-100% boll injury from bollworm. I could not find any fruiting structures in some plots of unprotected non-Bt cotton. The caterpillars have started to feed

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on the foliage, causing large holes in leaves, because of the lack of squares, blooms, and bolls on which to feed. We have had heavy bollworm pressure on cotton near Blackville.

**News from Above the Lakes**

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

**News from Below the Lakes**

James Bookhart reported that he “walked a lot of Bollgard II cotton fields [last week]. Bollworm pressure is very high. Recently hatched worms are easy to find in pink blooms. However, there is a very low rate of survival. I am finding less than 3% bollworm that are surviving longer than one day. There is also only about 1% damage. I also observed some beet armyworm “hits” on escaped pigweed. These don’t seem to be transferring to outbreaks in the cotton.”

My observations are very similar to those reported by James and others concerning high pressure from bollworm but good control from Bt technology.

**“At-a-Glance” Threshold Guidelines**

Below are the insects that will give us trouble from here until harvest. Right now, bollworms and fall armyworms seem to be the troublesome insects in many fields. There are some spider mites building in a few spots. Stink bugs will likely become the major pests to be managed in the coming weeks.

<i><b>Insect</b></i>	<i><b>Number per unit</b></i>
Stink bug	1 SB per 6 row feet or 20% injury to medium-sized bolls
Bollworm <i>1<sup>st</sup> generation Bt cotton</i>	>1 <sup>st</sup> bloom: 75 eggs, 30 small (<0.25 inch) or 3 larger (>0.25 inch) larvae per 100 plants, or 5% damaged bolls
Bollworm <i>2<sup>nd</sup> generation Bt cotton</i>	No threshold using eggs or small larvae; >1 <sup>st</sup> bloom: 3 or more larger (>0.25 inch) larvae per 100 plants or 5% damaged bolls
Bollworm <i>Non-Bt cotton</i>	>1 <sup>st</sup> bloom: 20 or more eggs or 3 small (<0.25 inch) larvae per 100 plants or 5% damaged squares
Fall armyworm	10 or more per 100 plants, checking blooms and bolls
Spider mites	50% of plants infested with actively growing colonies present

**Fall Armyworms**

What can we do about fall armyworms in cotton? This is a tough one. Below are the recommended insecticides for control of fall armyworms. Although these materials will provide control of fall armyworms, they rarely will go out alone in the tank. Usually, there is a tank-mix application to control bollworm and/or stink bugs (pyrethroid) and fall armyworm (alternative material below). “Rescue” applications for large fall armyworms are difficult at best because they tolerate insecticides (especially the large worms) and because of their behavior. As you know, fall armyworms are boll feeders and typically enter the boll on the bottom under the bracts. They feed inside of bolls near the bottom of the plant. All of these feeding behaviors hinder the

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effectiveness of insecticide applications. The pesticide simply does not reach the target in many cases. Higher water volumes are better than lower volumes. Considering the high pressure from bollworm that continues this season, the best application for fall armyworms right now will likely be a pyrethroid plus one of the materials below. A colleague of mine in Georgia has a good philosophy on controlling fall armyworms in cotton. I agree with him on the following. High rates of pyrethroids applied for bollworms will offer good control of very small armyworms. If fall armyworms escape pyrethroids and exceed threshold (see threshold below, but at least twice our threshold for bollworms), try to control them one more time. Diamond 0.83 EC at 9 oz per acre was one of his suggestions. When tank-mixed with a pyrethroid, you end up with a good treatment for caterpillars. However, 100% control should not be the target with any of the insecticides below, including those tank-mixed with a pyrethroid. Somewhere around 80% should be considered good.

**ARMYWORMS (BEET AND FALL ARMYWORM)**

Product	Product/acre	Lb ai/acre	Acre/gal	REI	PHI	Comments
emamectin benzoate (R) Denim 0.16 EC (BAW) Denim 0.16 EC (FAW)	6-8 oz 8-12 oz	0.0075-0.015	16-21.3 10.7-16	48 hr	21 d	Suppression of spider mites
indoxacarb Steward 1.25 EC or SC	9.2-11.3 oz	0.09-0.11	11.5-14	12 hr	14 d	
methoxyfenozide Intrepid 2 F	4-10 oz	0.06-0.16	12.8-32	4 hr	14 d	Higher rates for FAW
novaluron Diamond 0.83 EC	6-12 oz	0.039-0.078	10.7-21.3	12 hr	30 d	
spinosad Tracer 4 SC	2.14-2.9 oz	0.067-0.085	45-60	4 hr	28 d	
thiodicarb (R) Larvin 3.2 F (FAW)	1.5-2.25 pt	0.6-0.9	3.6-5.3	48 hr	28 d	Acts as ovicide also
methomyl (R) Lannate 2.4 LV (FAW)	1.5-2.25 pt	0.45-0.675	3.6-5.3	3 d	15 d	May redden leaves

Control of fall armyworms (FAW) may be justified when 10 or more larvae are found per 100 plants. Check blooms for the presence of FAW and look for feeding symptoms on boll bracts in the lower canopy. For beet armyworms (BAW) consider applying an insecticide when there are five or more "hits" per 100 feet of row, with larvae present. A hit is defined as a plant with one or more leaves damaged from the feeding of beet armyworms emerging from one or more egg masses. The first visible sign will be a brown spot about the size of a quarter on the upper surface of a leaf, produced by an aggregate of small worms (hatchlings from a single egg mass) feeding on the underside. As worms increase in size, the upper leaf surface will become net-veined, and larger worms will eventually feed completely through the leaf. Begin scouting for beet armyworms upon observing the first hit in a field. Randomly select five locations in a field and examine all plants on 100 feet of row at each location – determine the average number of hits per 100 feet of row. Cotton with a single *Bt* toxin (i.e. Bollgard) will only provide minimal control of the two armyworm species, but varieties containing two endotoxins will provide good control. Pyrethroids and other ovicides applied for bollworm control will also provide some degree of control of eggs and newly hatched armyworms; however, after the worms have fed on cotton plants, these materials will be less effective. Best control is achieved when applications of insecticide are timed to coincide with egg hatch and emerging larvae.

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### **Printed Cotton Insect Recommendations**

Copies of “Cotton Insect Management” (IC 97) recommendations are available at your local county office. You can visit the following website for an electronic version of the recommendations:

<http://www.clemson.edu/psapublishing/pages/ENTOM/IC97.PDF>

### **Need More Information?**

Log on to the following webpages to view important cotton management recommendations, data, and historical cotton insect newsletters:

<http://www.clemson.edu/edisto/cotton/cotton.htm>

<http://www.clemson.edu/scg/ipm/cotton.html>

Sincerely,

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