The University of Tennessee

UT Extension

West TN Research and Education Center
605 Airways Boulevard
Jackson, TN 38301

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 11 *June 17, 2010*

Past newsletters and other information can be found at UTcrops.com

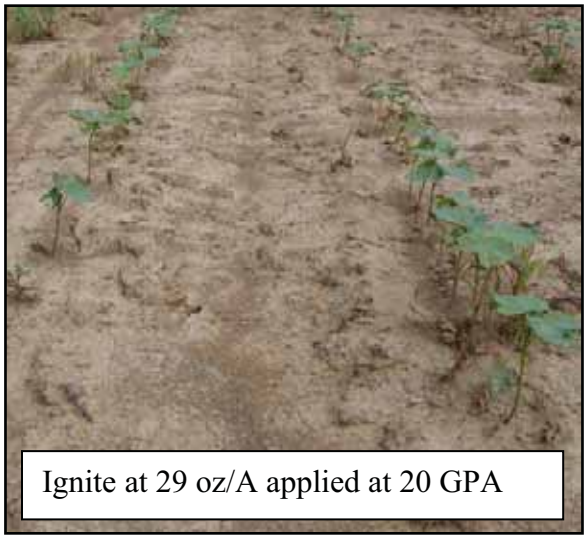
Soybean Scout Schools: These will be field-side programs lasting about two hours discussing and demonstrating various aspects of crop management (including insect, disease and weed control). Scouting notebooks and sweep nets will be provided as supplies last. Specific directions will be included in next week's newsletter.

- **Middle Tennessee Soybean Scout Schools, Tuesday, June 29.** Coffee/Franklin/Grundy location at 9:00 AM and Giles County at 1:30 PM.
- **West Tennessee Soybean Scout Schools, Thursday, July 1.** Southern Dyer County (Chic Area) at 9:00 AM and Weakley County (Martin) at 1:30 PM.

Weed Control Issues

Importance of GPA with Ignite Applications (Kelly Barnett, Graduate Research Assistant). This week we are seeing some very interesting results from one of our studies that is examining the importance of GPA (gallons per acre) when applying Ignite to glyphosate-resistant (GR) Palmer amaranth in cotton. All Ignite treatments were applied at 29 oz/A to Palmer amaranth that ranged in size from 4 - 6 inches. The reason we chose this Palmer height to apply is that once Palmer reaches a height of 4" control can be inconsistent. These treatments were applied at 10, 15 and 20 GPA. Ignite applications at 15 or 20 GPA provided approximately 95% control of Palmer amaranth (Table 1). However Ignite applied at 10 GPA provided less than 80% control. These data strongly suggest that as we are moving more to contact type herbicides such as Ignite, Prefix, Flexstar or Blazer to manage GR Palmer amaranth more application volume is critical to be successful. This is particularly true when the Palmer is 4 to 6" tall like in this study.

Ignite at 29 oz/A applied at 10 GPA

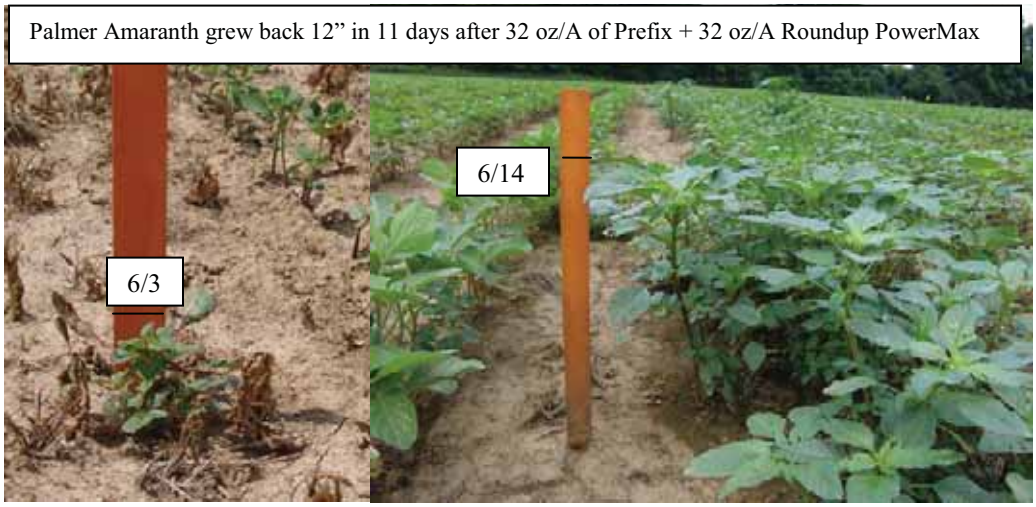


Ignite at 29 oz/A applied at 20 GPA

Table 1. Control of 4 to 6" Palmer Amaranth (PA) with Ignite applications at 10, 15, or 20 GPA

Herbicide	Rate	GPA	% Control of PA
Ignite	29 oz/A	10 GPA	79 %
Ignite	29 oz/A	15 GPA	94 %
Ignite	29 oz/A	20 GPA	99 %

GR Palmer Update (Larry Steckel, Weed Specialist). The call of the week has been on folks wanting something to control large Palmer amaranth. Even in fields where say a Prefix was put on fairly timely with most Palmer below 3" there are always some plants that are 5 to 6" tall. These can grow back very quickly. The picture below illustrates this. The Palmer was sprayed May 31st with overall good control (90%). However, some of the larger Palmer had grown back 2" by June 3 and by June 14 was 14" tall. So do not assume your post applications are working and be surprised 7 days after application that a fair percentage have grown back and are now way too large to control. Having someone scout these fields 2 to 3 days after application can make all the difference on managing GR Palmer.



Insect Control Considerations (Scott Stewart, IPM Specialist)

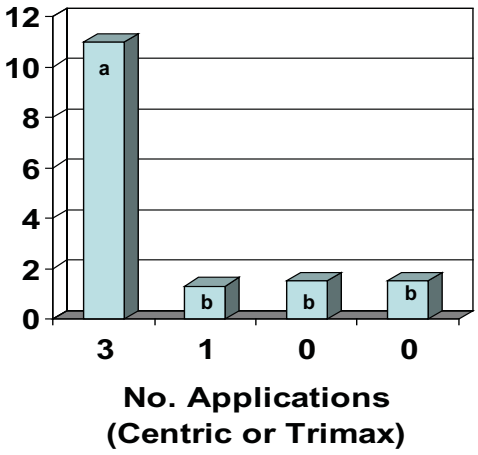
Cotton. Tarnished plant bug is now being reported at threshold levels in many fields, but as usual there are also many fields with few plant bugs. *Reminder* - The threshold during the first two weeks of squaring is 8 or more plant bugs per 100 sweeps and then increases to 15 plant bugs per 100 sweeps.

Comparable Rates of Name Brand and Selected Imidacloprid Products

Insecticides	Lbs AI / Gal	Recommended, Equivalent Rates
Trimax Pro	4.44	1.35 – 1.50 oz
Couraze Max, Wrangler 4F, Imida 4F, etc.	4.00	1.50 – 1.67 oz*
Couraze 2F, Imida 2F, Imidacloprid 2F	2.00	3.00 – 3.33 oz*
Couraze 1.6F, Imida 1.6F, Imidacloprid 1.6F	1.60	3.75 – 4.16 oz*
Alternative, Non-Imidacloprid Treatments		
Carbine 50WG	---	2.6 – 2.8 oz
Centric 40WG	---	1.5 – 2.0 oz
Intruder 70WSP	---	1.1 oz

* Although the rate ranges listed above are equivalent in terms of active ingredient, not all imidacloprid products allow these rates or uses. It is your responsibility to read and follow label instructions.

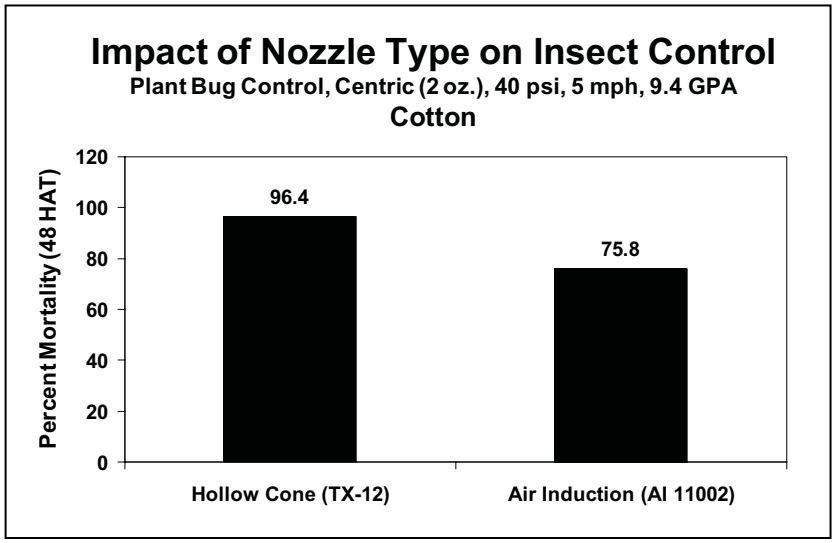
Resistance Management. There are several things we can do to delay the development of insecticide resistance including 1) spraying only when need, 2) using proper rates and making a good application, and 3) not overusing one class of chemistry. UT's standard recommendation is to only use neonicotinoid insecticides (e.g., Trimax Pro, Centric, Intruder) prior to bloom and reserve the use of synthetic pyrethroids and OP insecticides until after bloom; thus rotating classes of chemistry. There are many different imidacloprid products and formulations available (see table above); although I am hearing supplies are running out. These products are being sold at such low cost that it is tempting to spray without regard to insect pressure. However, insecticide applications often have unintended consequence. There are strong indications that aphids are developing resistance to neonicotinoid insecticides in the Midsouth. This includes Centric, Intruder and the imidacloprid products. We can rush this process along, as well as selecting for resistance in plant bugs, by spraying unnecessarily. I've also included a graph from a study in Tennessee showing how applications of Trimax Pro or Centric can flare spider mite infestations, and you will note that multiple applications created worse problems. I could have shown similar data for acephate, Bidrin or pyrethroid insecticides. The point is that insecticide applications can create secondary pest problems, and avoiding unnecessary applications can help prevent these problems.



Number of Spider Mite Hits in 600 Row Feet Following Application(s) of Trimax Pro or Centric. Lauderdale County, TN, 2007

Note that multiple applications targeting plant bugs significantly increased spider mite populations compared to plots that were not treated or treated only once. In this case, the plots sprayed three times required an application of miticide.

Using the right insecticide rate and making a quality application can improve insect control and help reduce the development of insecticide resistance. The graph below shows data from Dr. Jeff Gore (Mississippi State University). This is why you hear entomologist talk about using nozzles and pressures that produce uniform droplets sizes that are not too big.



Data from Dr. Jeff Gore, Mississippi State University.

Nozzle selection might be the difference between needing to retreat or not.

Corn. For non-Bt corn, southwestern corn borer (SWCB) traps are clearly showing that we are between moth flights. The next moth flight will not kick off in earnest for a couple of weeks. So treating for corn borers now will miss this generation. This does not change just because you plan on spraying a fungicide. For Bt corn, treating with insecticide at this time is even harder to justify. I often ask producers what they are treating for, and in many cases they don't have a good answer. If this is you, think twice before treating with insecticide.

So what are some factors that increase the potential benefit of spraying corn with insecticide?

- Non-Bt corn is far more likely to benefit because corn borers are the most important pest at this time of year, and Bt corns already provide excellent protection from corn borers.
- Late maturing non-Bt corn is at greater risk to insect attack. Spraying tasseling corn right now would be a swing and a miss because we are between SWCB moth flights. But corn beginning to tassel 10-14 weeks from now will be even more susceptible, and this is also when the next generation of moths is expected to show up.
- Do you actually have corn borers in your area? This is why running SWCB pheromone traps is important. Moth traps help determine the need and timing of insecticide applications.
- Besides timing, insecticide selection is also important. Refer to UT's Corn Insect Control Recommendations for insecticide choices and rate.

Soybeans. It has been a very quiet week insect wise in soybeans but pay attention to the earliest maturing fields. The first flowering fields will often be a magnet for stink bugs and some other pests.

Regional Report, Northwest Tennessee (Hayden E. "Gene" Miles, Area Extension Specialist)

Most of the area this week continues to have adequate growing conditions; however, a few dry areas have been noted (wilting cotton, twisted corn leaves). Growth stages of cotton fields being reported by U.T. trained county IPM scouts and private consultants this week ranges from 2nd to 11th node. Some more mature plants in the Delta are in the 12th node this week. Thrips counts this week range up to 10 per plant where cotton got off to a bad start because of wet conditions.

Plant bug numbers being reported for the most part seem to be below threshold. However, plant bug numbers reported by U.T. trained IPM scouts and private consultants in 2nd week squaring cotton range up to 1.4 per 6 row feet and/or 10 per 100 sweeps. Square retention being reported this week ranges from 90-95 percent. Square retention can be determined by counting the 1st position square only on the top 5 nodes of the plant. This should be done until 20 positions are checked in one location. Check five locations in the field which will give you 100 1st positions checked. Subtract the 1st square positions missing from 100 to obtain percent square retention. If square retention drops below 80 percent prior to first bloom a recommended insecticide application should be made to control plant bugs. Beneficial counts this week range up to 6.7 per 6 row feet.

Wheat yields reported by Dyersburg Elevator this week range from 40-80 bushels per acre, and test weights range from 56.5 to 60.

Tips for Using of Foliar Fungicides for Late Season Soybean Diseases (Dr. Melvin Newman, Extension Plant Pathologist)

Many soybean producers are considering spraying their soybeans with a foliar fungicide. The best time to spray for late season diseases is at the R3 stage of growth. Under heavy disease conditions, and when soybean prices are really good, a second application might be beneficial at the R5 growth

stage. The recent rains have made prospects look good for excellent yields, but that good moisture also creates the conditions for more late-season foliar diseases.

Moisture is the number one factor needed for disease development, but along with moisture, continuous soybeans, susceptible varieties, high cyst nematode counts and low soil fertility (especially low potassium and low pH) also increase the chances for yield loss from disease. Producers should consider spraying fields that are subject to these conditions. However, if there is little hope for a good yield (at least 30 + bushels per acre) spraying a fungicide might not be as economical as one that has a high yield potential.

Fungicide coverage of as many leaves and stems as possible is essential for good foliar disease control. If spraying with ground equipment, use at least 15 to 20 gallons of water per acre along with a fine droplet size (about 250 to 300 microns) and high pressure. If spraying with an airplane use at least 5 gallons water per acre and fly 6 to 12 feet above the soybean canopy for good coverage. Mixing a herbicide with the fungicide application is not recommended because application and timing is usually not compatible.

Soybean rust is not a threat in Tennessee at this time. Therefore, all that is needed for control of late season diseases is an EPA approved Strobilurin fungicide such as Headline or Quadris with a surfactant such as NIS or a COC. Evito (fluoxastrobin, a strobilurin similar to Quadris and Headline) and Topguard (flutriafol) have recently received an EPA label for soybeans. Topguard has performed well in soybean rust tests in Quincy, FL and controlled late season diseases in our tests at Milan.

A premix or tank mix of a Strobilurin plus a Triazole fungicide is also effective as long as there is an adequate amount of Strobilurin in the mix. If making a second application, it is wise to use a tank mix or a premix of Strobilurin plus a Triazole. This would help reduce the chances of a built-up of resistant fungi to the Strobilurin fungicides and help reduce the risk of soybean rust.

Using just a Triazole for late season diseases such as Brown Spot, Frogeye Leaf Spot and Anthracnose would not be the best choice for maximum control. Basically, the Triazoles are best used for soybean rust control. Triazoles are necessary when there is a high risk for soybean rust. The risk of rust is very low at this time. We are continuing to monitor the rust situation by scouting sentinel plots and checking spore traps.

For more information on soybean diseases, disease resistant varieties and fungicides check the **utcrops.com** web site under soybean diseases.

Cotton Progress Report (Dr. Chris Main, Extension Cotton Specialist)

Ignite Tolerance in Cotton. Several questions have been asked this year about cotton variety tolerance to Ignite herbicide. Specialists from Arkansas, Georgia, Mississippi, and Tennessee have implemented two trials to address these questions. The first trial investigates 3 Liberty Link and 5 WideStrike varieties tolerance to two postemergence applications of Ignite (29 oz/ac) to 3 and 8 leaf cotton. Non-treated plots are included for yield comparison. Table 1 below includes cotton injury 7 and 14 days after the 1st Ignite treatment, change in plant height (inches) and change in number of nodes from when the first application was made and the 14 day evaluation. All WideStrike varieties were injured (9-13%) by the Ignite application 1 week later. By 14 days after application, injury to WideStrike varieties ranged from 2-6% with the most injury observed on PHY 367 WRF and PHY 375 WRF. All varieties treated with Ignite displayed reduced growth but no statistical reduction in node

formation. Height was reduced from approximately 1-4 inches, and several varieties produced 1 less node. PHY 367 WRF and PHY 375 WRF showed the most reduction in growth, but did not display a reduction in node number.

Table 1. Cotton variety response to Ignite, WTREC, Jackson, TN 2010.

			Plant change after 1st application			
	INJURY (%)		UNTREATED		IGNITE 29 oz/a	
VARIETY	7 DAYS	14 DAYS	HEIGHT (in)	NODES (#)	HEIGHT (in)	NODES (#)
FM 1735 LLB2	0	0	9.1	4	7.2	3
FM 1773 LLB2	0	0	8.4	4	7.5	3
FM 1845 LLB2	0	0	7.9	4	7.1	4
PHY 367 WRF	13	6	8.6	3	4.7	3
PHY 375 WRF	11	5	8.4	2	4.7	2
PHY 440 W	9	3	9.7	3	6.0	2
PHY 499 WRF	11	2	9.1	4	6.9	3
PHY 565 WRF	13	2	10.3	4	6.2	3
LSD (0.05)	**2**	**2**	**2.7**	**ns**	**2.7**	**ns**

A second trial investigating cotton response to increasing Ignite rates on FM 1773 LLB2 and PHY 375 WRF is presented in Table 2. FM 1773 LLB2 displayed some injury from Ignite 7 days after treatment however, it was not statistically significantly. FM 1773 LLB2 did not have reduced plant height growth after application or reduced node formation. PHY 375 WRF was injured from 15% to 74% based in Ignite application rate 7 days after application. By 14 days after application PHY 375 WRF injury ranged from 6%-25%. Visual injury estimates are based on foliage conditions, not growth reduction since height and node measurements were recorded. This approximates what a grower would perceive when an entire field of cotton was treated at each rate. PHY 375 WRF grew 11 inches in 14 days when not treated with Ignite. When treated with Ignite PHY 375 WRF growth was reduced 3-6.5 inches. If PHY 375 WRF was treated with a 2X rate of Ignite (58 oz/ac) or more, node growth was reduced by one node.

These trails are located at Jackson and are scheduled for the second application tomorrow (6/18). The same trails are planted at Chic and received the first application yesterday (6/16) If you would like to get a first-hand look at these trials let me know. I will be happy to show them to anyone and they will be on our Cotton Tour in September.

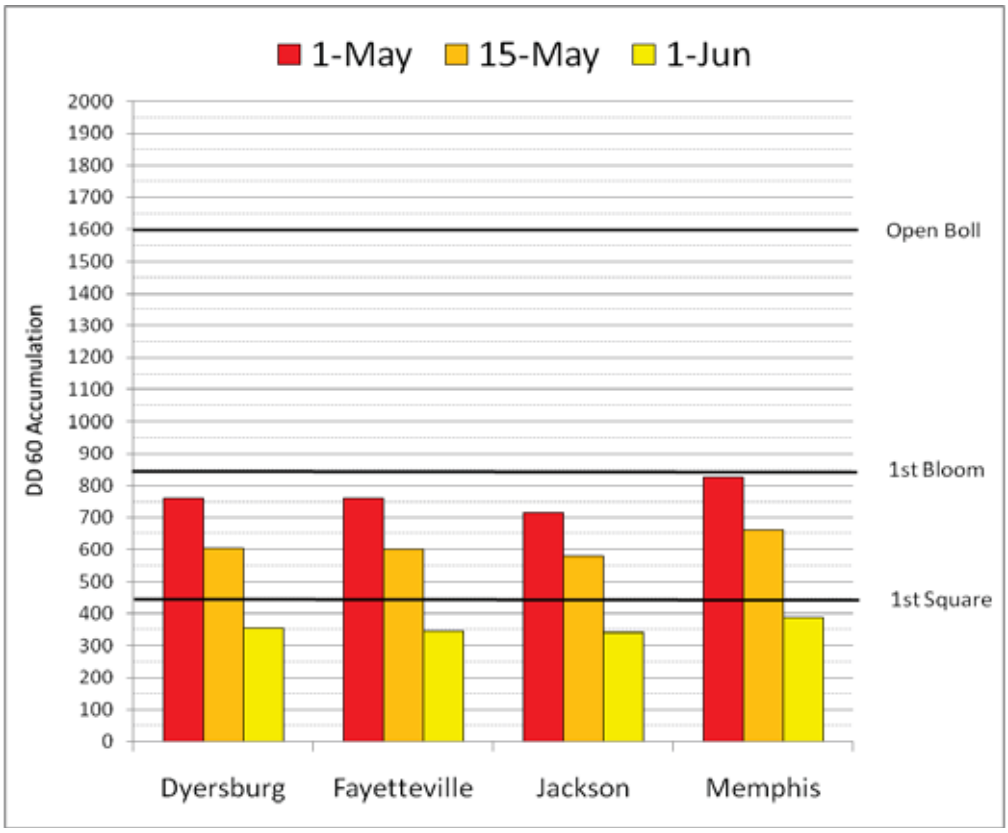
Table 2. Cotton response to high rates of Ignite, WTREC, Jackson, TN, 2010.

	IGNITE RATE	INJURY (%)		PLANT CHANGE	
VARIETY	oz/a	7 DAYS	14 DAYS	HEIGHT (in)	NODES (#)
FM 1773 LLB2	0	0	0	10.7	5
	29	0	0	11.0	5
	58	3	0	10.1	5
	87	7	2	10.0	5
	116	8	1	10.1	5
PHY 375 WRF	0	0	0	11.3	5
	29	15	6	8.4	5
	58	36	14	6.9	4
	87	47	20	4.9	4
	116	74	25	5.6	4
LSD (0.05)		**23**	**6**	**2**	**1**

The following pictures are of different Ignite application rates to FM 1773 WRF and PHY 375 WRF at seven days after application.

Cotton Development Snap Shot. The chart below provides a record of accumulated heat units for four locations in Tennessee based on planting dates of May 1st, May 15th, and June 1st. In season benchmarks are included to reference growth and development.

Figure 1. Growing degree day accumulation.



Farm Management (Chuck Danehower, Area Specialist – Farm Management)

A colleague in Virginia, Bill Whittle, is retiring at the end of this month and in Virginia's farm management newsletter he recently put out the top 11 pitfalls in farming he has witnessed. Last week, I shared the first 6 pitfalls, below are the last 5. Have any of these applied to your operation? If so, contact your Extension Agent or Area Specialist- Farm Management about ways to correct or avoid the pitfalls.

Top 11 Pitfalls in Farming (Bill Whittle, Extension Agent, Farm Business Management, VA)

The Last Five Pitfalls

7. Lack of financial reserves: Both businesses and families lack the financial reserves necessary to make weathering tough times less difficult. This current economic downturn has changed the landscape and businesses will need to depend on these reserves in conjunction with tools provided by their lender.
8. Not managing family living expenses: The family can be a black hole in sucking up money. The only way to manage that black hole is to know what it costs your family to live and then to manage your resources.

9. Following your neighbor: Farming operations are different and the factors that drive your neighbor's decisions are not the same factors you deal with. Why should you follow him? I bet he did not get to be successful following his neighbor.
10. Jumping on the latest/newest/hottest enterprise: The learning curve for new enterprises is steep and expensive. A lot of homework needs to be done before launching a new enterprise, and it is rare to see that homework done. Because an enterprise is successful somewhere does not mean you can make it work here, but the reverse is also true. The right idea, coupled with the right resources, markets, and management traits are essential in raising an idea from the kitchen table to a profitable enterprise.
11. Not training the next generation: Farmers are good at teaching the younger generation about production but less so about financial management. This has a lot to do with a lack of communication, murky long-term plans, and an unwillingness to share control. If the farm is going to survive for generations, that training must occur.

Crop Watch (as reported by National Agricultural Statistics Service)

Percent Planted					
		June 13, 2010	June 6, 2010	June 13, 2009	5 Year Average
Cotton	TN	99%	96%	99%	99%
	US	95%	91%	94%	94%
Soybeans	TN	81%	67%	57%	78%
	US	91%	84%	86%	90%

Percent Emerged					
		June 13, 2010	June 6, 2010	June 13, 2009	5 Year Average
Corn	TN	99%	97%	95%	99%
	US	98%	94%	94%	97%
Soybeans	TN	65%	47%	41%	65%
	US	80%	66%	70%	79%

Crop Progress %					
		June 13, 2010	June 6, 2010	June 13, 2009	5 Year Average
Cotton - squaring	TN	8%	1%	2%	14%
	US	17%	8%	10%	16%
Wheat- harvested	TN	11%	NA	14%	22%
	US	9%	3%	7%	12%

Crop Condition % (June 13, 2010)						
		Very Poor	Poor	Fair	Good	Excellent
Corn	TN	1%	4%	22%	55%	18%
	US	1%	4%	18%	58%	19%
Cotton	TN	0%	1%	21%	64%	14%
	US	0%	4%	34%	51%	11%
Soybeans	TN	0%	1%	17%	63%	19%
	US	1%	4%	22%	58%	15%

Tennessee Pheromone Moth Trapping Summary - Trapping efforts are funded in large part by the Tennessee Cotton Incorporated State Support Program. Thanks to the County Extension Agents who are also running southwestern corn borer traps.

Numbers of Moths per Week (Week 7, Ending 6-16-10)

Trap Location	Tobacco Budworm	Corn Earworm (Bollworm)	Beet Armyworm	Trap Location	Southwestern Corn Borer
Hardeman (Bolivar)	0	0	0	Fayette (Whiteville)	1
Fayette (Whiteville)	0	0	---	Tipton (Covington)	0
Fayette (Somerville)	2	0	0	Madison (WTREC)	21
Shelby (Millington)	1	26	0	Crockett (Maury City)	0
Tipton (Covington)	7	*	---	Crockett (Ashport 1)	*
Tipton (North)	0	4	0	Crockett (Ashport 2)	*
Lauderdale (Goldust)	0	18	2	Gibson (Milan REC)	2
Haywood (West)	4	12	0	Gibson (Hwy 187)	0
Haywood (Brownsville)	0	0	---	Obion (Midway)	0
Madison (WTREC)	0	4	0	Obion (Crockett)	1
Madison (North)	0	1	0	Obion (Troy)	0
Crockett (Alamo)	0	0	0	Obion (Obion)	0
Crockett (Maury City)	4	0	0	Weakley (Dukedom)	0
Dyer (Dyersburg)	12	9	1	Weakley (Gardner)	0
Dyer (Newbern)	2	6	0	Weakley (Kimery)	0
Lake (Ridgley)	5	BH	0	Weakley (Seminary)	3
Gibson (Kenton)	7	5	11	Weakley (Oar Spr.)	1
Gibson (Milan REC)	4	5	0	Lincoln (Bellview)	*
Carroll (Coleman Farm)	4	12	0	Lincoln (Camargo)	*
				Lincoln (Pearl City)	*
				Dyer (Newbern)	6
				Dyer (Viar Rd.)	0
				Dyer (Fuller Rd.)	3
				Dyer (Beasley Rd.)	0
				Giles (Prospect)	0
				Giles (Vales Mill)	0
				Giles (Bodenham)	3
				Lake (Stateline)	0
				Lake (Stateline)	0
				Lake (Stateline)	0
Average	**2.74**	**6.00**	**0.88**	**Average**	**1.64**

An asterisk (*) indicates the trap was missing, knocked down, or no report was received. BH = ButtHead stole my trap.

Scott D. Stewart (Editor), Extension IPM Specialist