

## **IPM NEWSLETTER**

### **Update for Field Crops and Their Pests**

No. 10

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**Reminder:** **Cotton Scout School**, Friday, May 25<sup>th</sup>, 8:30 AM - 12:00 Noon, West Tennessee Research and Education Center. No registration fee is required, and a box lunch will be provided. An after lunch, go-to-the-field session is offered for those interested. The program will include basic information on plant growth and development, identification of insects and other common pests, symptomology, sampling techniques, etc.

#### **Cotton Progress Report (Chris Main, Extension Cotton and Small Grains Specialist)**

The Tennessee agricultural statistics agency reports that 61% of the cotton crop was planted as of May 13. Compared to 27% last year, and is 21% ahead of the five-year average of 40%. Continued warm temperatures and some more beneficial rainfall Tuesday have the cotton crop progressing along quite well. The current weather forecast has night time lows in the mid 40's to low 50's for the next three nights. Don't expect recently planted cotton to emerge quickly. I do not expect any chilling injury since soil temperatures were in the mid to upper 70's prior to the rain.

A few fields I have looked at this week appear to have some thrips damage. Thrips are likely moving from wheat cut for hay and wheat which is drying to for harvest. See Dr. Stewart's comment below for more in depth thrips information.

Herbicide drift concerns have surfaced over the last few weeks. Now that cotton is up in most counties dicamba and 2,4-D should be put back into storage. While most complaints have been minor, they illustrate the need for caution when using these products. Most times cotton will grow out of the drift rate symptomology and produce normally. Please see the pictures below of the difference between 2,4-D and dicamba injury. 2,4-D will typically cause a drawstring, or strapping effect on affected cotton leaves (Figure 1). Dicamba will usually cause cotton leaves to cup upward (Figure 2).



Figure 1. 2,4-D injury.



Figure 2. Dicamba injury.

### DD60 Accumulation (TASS and NWS data)

Location	4/20 – 5/17	4/27 - 5/17	5/4 – 5/17	5/11 – 5/17
Brownsville	273	225	173	72
Dyersburg	285	236	180	75
Fayetteville	277	230	167	78
Memphis	347	287	211	90
Milan	271	224	172	70

### Weed Control (Larry Steckel, Extension Weed Specialist)

Judging by phone calls and fields I have walked it appears that many of the over-the-top applications on corn and cotton applied last week have resulted in at least some leaf burn. This is not real surprising with the very warm temperatures coupled with herbicides that are oil based or applications that contained a good surfactant. Several corn fields that had Steadfast plus crop oil applied have shown some leaf burn. Likewise, a few corn fields that had Dual Magnum applied over-the-top last week also showed leaf burn. Cotton fields that had tank mixes of Roundup Original Max plus either Dual Magnum or Orthene also showed leaf burn (enclosed picture). In all cases, the leaf burn was not serious enough to reduce yield or delay maturity. With the cooler temperatures this week, I expect less leaf burn from these over-the-top applications.



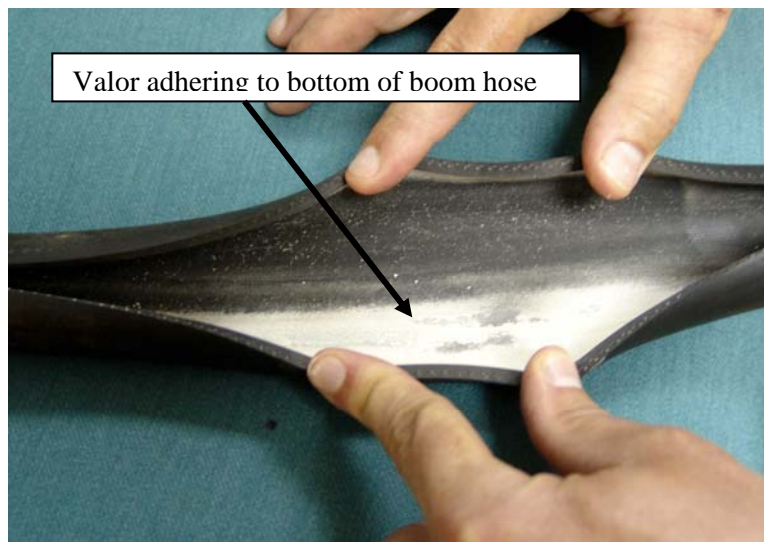
As Chris mentioned we have run more drift injury calls in cotton. A little common sense goes a long way in avoiding these problems. In other words, do not spray 2,4-D or dicamba containing herbicides once cotton has emerged. There is no reason for anyone to open a jug of 2,4-D in West Tennessee once cotton is up. I know some folks would like to use it during the summer, particularly in pastures. I always recommend to forgo 2,4-D during the cotton growing season and use either Aim or Redeem in pastures. Those two herbicides are much better at staying put after being sprayed and are effective on many pasture broadleaf weeds.

Over the next couple of weeks many folks will be spraying over-the-top of cotton for the first time. Every year some of these applications cause injury to the cotton from sprayers that have not been thoroughly cleaned. The typical burndown herbicides like dicamba, 2,4-D and Valor have been the most common tank contaminants in recent years. With all the new corn acres this year coupled with many just finishing their last post corn applications, tank contamination may be more of a problem this year. Typical corn herbicides like atrazine, Callisto and Steadfast will also need to be thoroughly rinsed before a sprayer is pulled into a cotton or soybean field. Most all these herbicides can not be cleaned out of sprayers by simply rinsing with water. Cleansing requires an ammonia water soak and flush followed by a rinse with just water. Dicamba and 2,4-D need to be thoroughly purged from the sprayer as just 1/10,000 of the field use rate can injure cotton or soybeans. Herbicides like atrazine or Valor can adhere to the inside of the larger plastic hoses when only rinsed with water. Because

glyphosate can act as a good tank cleaner, glyphosate applications can remove some of this buildup inside the hoses causing significant burn to cotton or soybeans.

There were two significant label changes that came through last week. The first was with Sequence, a premix of Dual Magnum and Touchdown, which can now be sprayed over-the-top of Roundup Ready corn. The other change is that Touchdown Total can now be sprayed over-the-top of Roundup Ready Flex cotton past the 5<sup>th</sup> true leaf and at higher rates.

There were quite a few acres of Valor utilized in burndowns in both cotton and soybeans this spring. Many growers were trying it for the first time. It has performed very well this year providing residual control of horseweed as well as pigweed. One thing we did find out though is that it can not be cleaned out of sprayers by simply rinsing with water. It requires an ammonia water soak and flush followed by a rinse with just water. I was in several fields where Valor adhered to the inside of the larger plastic hoses when it was only rinsed with water. The first glyphosate applications on cotton then removed some of the buildup inside the hoses causing significant burn to the cotton.



### **Corn and Soybean Updates (Angela Thompson, Extension Corn and Soybean Specialist)**

**Corn.** We are finally able to put this corn crop behind us as far as planting and replanting goes. According to the state statistics service, TN planted over 750,000 acres for grain but that number may shift a bit when a more recent acreage assessment is made. Most areas are receiving enough rain to keep crops going, but all fields could use some additional water. Depending on the location, counties are in a 5 to over 10 inch rain deficit for the year and timely rains will become critical as we move into June and July. Insect problems in corn are scattered cutworm finds, and isolated damage from what may be billbug and stalk borer.

**Flattened Corn:** This week's rain storms brought more than a little water to some northwest TN areas. High winds blew corn over and in a few cases demonstrated what 'green snap' means. Leaning corn will usually right itself as long as the root system is adequate. Small corn has an easier recovery than knee high and taller corn. In a few cases where 2,4-D was used in-crop, stalks broke off near the soil line and this corn will not be able to recover.



**Patchy Yellow Cornfields:** About this time each year we start noticing yellow areas across corn fields where nitrogen is deficient-- usually due to wet areas where nitrogen leached from heavy spring rains. This year the culprit is dry weather--dry conditions in

fields especially late planted or replanted corn that did not get adequate root growth before moisture became limiting. Some areas are in a serious water deficit and getting just enough rainfall to keep the crop going. Root growth occurs slowly when soil moisture is limited and without a good root system corn cannot reach nutrients. Severe yellowing occurs where corn is growing slowest –droughty or compacted soils or where weeds were removed late. The cure for this is a good rain and time to allow plant roots to take up needed nitrogen.

Growth Stages in Corn - a reminder of what is ahead: Understanding corn plant development can help us manage the crop for better yields. Beginning with the seed leaf, each V stage is defined as the number of leaves showing an exposed leaf collar (band of tissue at base of leaf where leaf hugs the stalk). Plants older than V6 lose lower leaves as the stalk expands and it will become necessary to split the lower stalk to count nodes.

<b>Growth Stage</b>	<b>Comments:</b>
V5	Microscopic tassel initiated at growing point. Approaching cutoff for ALS herbicides.
V6	Growing point at or above soil line. Sidedress N should be applied V4-V6 to allow plant uptake before heavy demand. V8 is cutoff for glyphosate.
V9-V12	Rapid vegetative growth and increasing nutrient demand. Kernel row number is being determined. Nutrient/water stress can reduce kernel row number.
V12-V17	Kernels per row (ear length) are being determined. Nutrient/water stress can reduce ear length.
V14	About 2 weeks before silking.
V17	Ear shoot tip and tassel tip visible.
V18	Brace root formation is completed.
VT(Tassel)	Last branch of tassel seen before silks emerge.

**Soybean.** Planting is progressing pretty well where showers provide enough moisture for a stand. A few areas have stopped planting due to lack of adequate moisture and no predicted rain in the near future. When planting in dry weather with no available soil moisture, it may be best to delay planting until rain has occurred. A second option is to plant shallow (about 1 inch) right before an anticipated rain. There is always the possibility of surface crusting and hypocotyl damage which can reduce stands if you end up getting a heavy rain, particularly where row cleaners are used or when planting into tilled ground. In dry weather where some soil moisture is available, I have planted soybeans to moisture up to 2 inches deep in warm soil and gotten a stand. There was no rain in the near forecast and beans emerged before any rain fell. In a situation like this, be careful to never plant soybeans deeper than 2 inches and never plant deep right before a rain.

Asian Soybean Rust News. ASR was reported on kudzu in Louisiana this week. This is an early find (53 days earlier than last year for Louisiana). UT is in the process of installing spore traps at sentinel plots to monitor for spores this growing season. Seventeen sentinel plots have been established across the state, monitored by extension agents and specialists, and USDA personnel. As in previous years, leaf samples from sentinel plots will be tested with PCR technology as an early disease detection tool and these results will be reported weekly beginning the last week of May.

### Insect Issues (Scott Stewart and Russ Patrick, IPM Specialists)

It has remained a relatively quiet week in terms of insect problems, but there are a few things worth mentioning.

**Thrips.** Up until now, our weather has been ideal in most areas for rapid seedling growth. Thus, thrips problems have been minor. If cotton has already reached the third leaf stage and thrips have not been a significant issue, you are basically out of the woods. However, with this cooler snap, emerging plants are at higher risk to thrips injury. There are a few do and don't of thrips control.

- Do not automatically spray thrips just because glyphosate is being sprayed. This is especially unlikely to have benefit once cotton is past the third true-leaf stage. If nothing was used at planting for thrips control, or if only acephate was used as the treatment, ignore this rule. In this case, I suggest at least one automatic spray beginning at the emergence of first true leaf.
- Do not use a pyrethroid insecticide for thrips control. The exception to this rule is if cutworms are present. Ammo and its generic cousins are tantalizingly cheap, but in the long run, the risk of flaring aphids and mites can make them considerably more expensive.
- Do consider spraying thrips at the 1-2 leaf stage if cotton has emerged poorly and is growing slowly. As a rule of thumb, if cotton was planted over 18-20 days ago and it is still not past the second leaf stage, a spray may be needed. The presence of immature thrips is a tip-off that treatment is necessary.

**False chinch bugs** have been reported in parts of Middle Tennessee, north Alabama and northeast Mississippi. This pest can occur on cotton, corn and soybean. Immatures can "migrate" across fields in large numbers and essentially suck plants dry. There may be dozens to hundreds on individual plants. They can kill plants quickly, so reaction time is important. In cotton, the recommended treatment is 16 oz/acre of ULV Malathion. A second choice in cotton is Bidrin at 8 oz/acre, but this application can only be made if you have Bidrin under the old label. In soybean, acephate at 0.75-1.0 lb/acre is recommended. Capture 2E, Discipline 2E or other formulations of bifenthrin at 4-5 oz/acre is recommended in corn. Other pyrethroids usually do not provide satisfactory control.



**True Armyworms** in wheat may be a potential problem for the few remaining fields that tolerated the Easter freeze. Among many of these fields, yield potential has been significantly reduced. Thus, you will have to adjust the threshold based on the yield potential of the field. UT recommends treatment when 4<sup>+</sup> larvae are present per square foot. If anything, recent data from the University of Arkansas suggests this threshold may be too aggressive. Their data, from multiple tests, showed no yield loss when armyworms caused complete defoliation. Arkansas essentially recommends treatment only when wheat heads are being clipped. If treatment is necessary, the pyrethroid insecticides are commonly used. There are some typos in UT control recommendations. Correct use rates are: Baythroid XL (1.8-2.4 oz/a), Karate Z (1.28-1.92 oz/a), Mustang Max (3.2-4.0 oz/a) and Prolex (1.02-1.54 oz/a).

**Moth trapping (see appended table).** Southwestern corn borer catches remained low this past week. Trap catches for all moths dropped, although some tobacco budworms are being caught in the southwestern and central counties of West Tennessee. These are the counties that had some problems with tobacco budworm last year.

### **Farm Management Update (Chuck Danehower, Area Specialist – Farm Management)**

Before the recent rain, talk among producers with irrigation was when should I cut my center pivot on? Corn leaves in some areas were starting to turn and twist, a sign of moisture stress. Irrigation scheduling and timing is critical to the success of an irrigation program. Producers want to make sure that enough water is applied, while at the same time not put too much. This is especially true as the cost of fuel and electricity has risen in recent years.

There are several tools available for producers to assist in scheduling irrigation. One tool which is available as a downloadable Excel Spreadsheet from the UT Biosystems Engineering and Soil Science is MOIST (Management of Irrigation Systems in Tennessee). MOIST was designed by our UT Irrigation Specialist – Dr. Brian Leib. It is a spreadsheet that is easy to set up and input data throughout the growing year. The spreadsheet works similar to keeping up with a checkbook. Information such as rainfall and irrigation are entered like you would a deposit. The spreadsheet calculates the amount of moisture the crop is using on a weekly basis, similar to a withdrawal. The result then is the amount of moisture deficit for the particular crop. Producers can then look at this moisture deficit and decide at what level they want to irrigate. Temperature conditions can be easily updated based on the Haywood County weather station. This spreadsheet is available from <http://bioengr.ag.utk.edu/weather/>. The spreadsheet is located on the bottom of the screen. Click on it and save it to your computer. If you need help in setting it up, please contact your UT Extension office.

Another tool that West Tennessee producers have been using is Watermark sensors. These are sensors that are placed at various depths to measure the amount of moisture in the soil. They can be read with a handheld device or connected with wire to a data logger which can read up to 6 sensors. One irrigation company is installing sensors that can be read with a wireless reader. Using sensors allow producers to get a more accurate gauge as to the moisture in the soil. For more information on using sensors as an irrigation tool, contact Dr. Brian Leib at 865- 974-8846 or email [bleib@tennessee.edu](mailto:bleib@tennessee.edu) .

For an irrigation system to be economically feasible, a plan for irrigation scheduling must be developed. Both MOIST and Watermark sensors have assisted Tennessee producers in scheduling irrigation. They have tracked each other very well so we feel confident in recommending them as tools. Whichever method you use including just a visual inspection, develop your plan now before irrigation is needed. Then, as your trigger point is reached, irrigate accordingly.

**Tennessee Pheromone Moth Trapping Summary** - Trapping efforts are funded in large part by the Tennessee Cotton Incorporated State Support Program.

**Numbers of Moths per Week (Week 2, ending 5-17-07)**

Trap Location	Tobacco Budworm	Corn Earworm (Bollworm)	Beet Armyworm	Southwestern Corn Borer
Hardeman (Bolivar)	0	0	0	---
Fayette (Whiteville)	0	0	0	---
Fayette (Somerville)	0	0	---	0
Shelby (Millington)	16	*	0	---
Tipton (Covington)	24	0	0	---
Tipton (West)	0	3	---	0
Haywood (West)	*	*	0	---
Haywood (Brownsville)	0	0	---	---
Madison (Exp. Stn.)	14	0	0	1
Madison (North)	1	20	---	---
Crockett (Alamo)	3	0	0	---
Crockett (Maury City)	12	0	---	---
Dyer (Bogota)	0	1	0	---
Dyer (Newbern)	0	5	---	0
Lake (Ridgley)	0	7	0	---
Gibson (Kenton)	4	0	---	---
Gibson (Milan Exp Stn.)	3	0	1	1
Carroll (West)	6	0	0	---
Lauderdale (Goldust)	8	4	0	---

An asterisk (\*) indicates trap was missing, knocked down or not run.

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