

## IPM NEWSLETTER

### Update for Field Crops and Their Pests

No. 22

August 28, 2009

Past newsletters and other information can be found at [UTCrops.com](http://UTCrops.com)

Bookmarks: [Cotton situation](#) [Insect stuff](#) [Weed control](#) [Farm management](#)

#### Announcement --- 2009 Cotton Research Tour and Wheat Production Conference

**When:** September 2<sup>nd</sup>, 2009 registration from 8:00 to 8:30, Tour starts at 8:30, Wheat Production Conference starts at 1:00 pm

**Where:** West Tennessee Research and Education Center, Jackson

**Cotton Tour:** Variety Performance - Insect Management - Glyphosate Resistant Weed Management - Irrigation - Glytol + Liberty Link Cotton - Planting Date Effects on Cotton - Defoliation Programs

**Wheat Production Conference:** Wheat Variety Performance - Insect Control Issues - Weed Control Basics - Agronomic Considerations - Malting Barley Discussion

#### Announcement --- Look at Them Beans

UT Extension and The Research and Education Center at Milan will be hosting a really good soybean disease, insect and weed field at Milan, TN on **Wednesday, Sept. 9-09 starting at 8:00 AM till 12:00 noon. Registration begins at 7:30 AM (free).**

#### Cotton Situation (Dr. Chris Main, Extension Cotton Specialist)

The Tennessee Agricultural Statistics Service reports cotton condition as 24% excellent, 55% good, 20% fair, 1% poor, and 0% very poor. There was a conspicuous lack of a crop progress report indicates to me that we are setting bolls on the entire crop and have less than 5% of the crop with open bolls.

**Crop maturity and defoliation timing.** Several issues related to late season crop management have been topics of phone conversations this week. UT has two excellent guides for helping make defoliation decisions. Please visit the following links to access that information.

#### **Defoliation Timing:**

<http://www.utextension.utk.edu/fieldCrops/cotton/VarietyTestingData/W075.pdf>

#### **Cotton Harvest Aids:**

<http://www.utextension.utk.edu/fieldCrops/cotton/PDF%20files/W225.pdf>

Another topic that has come up is a program approach from FMC to use Aim herbicide/defoliant as a maturity management tool. With this approach you apply Aim at 3/8 oz per acre with 1% crop oil concentrate (COC) between 1<sup>st</sup> cracked boll and 15% open bolls. This application will remove juvenile growth, squares and small bolls on the plant that will not develop into

harvestable fruit, and open the canopy to increase sunlight penetration and air movement. This will change the look of the crop (Figure 1). An Aim application in this manner should **ONLY** be made to rank or late maturing cotton. In well cutout situations this application can completely defoliate the crop and lead to premature boll opening (Figure 2., background dryland, foreground irrigated). Other potential benefits from changing the look of the crop include terminating insecticide applications on time. I say on time because the 1<sup>st</sup> cracked boll -15% open bolls timing should fall around 450 heat units past cutout. If you have been reading Dr. Stewart's comments the past few weeks you already know that it is safe to terminate insecticide treatments at the 350-450 heat unit after cutout benchmark. However, like you, I am guilty of always thinking those last few bolls will be harvestable. Managing maturity with Aim removes the temptation to continue spraying.

**Figure 1.** Aim Managed Maturity



**Figure 2.** Dryland vs. Irrigated Managed Maturity



I have two years of experience using Aim in this manner. First, in my research it does not increase yield or impact fiber quality since it only removes the unproductive green tissues at the top of the plant and DOES NOT contain a boll opener. It can potentially help promote earliness and make defoliation decisions easier. If you are making an insecticide application from 1<sup>st</sup> cracked boll to 15% open bolls this is an excellent time to try the managed maturity approach.

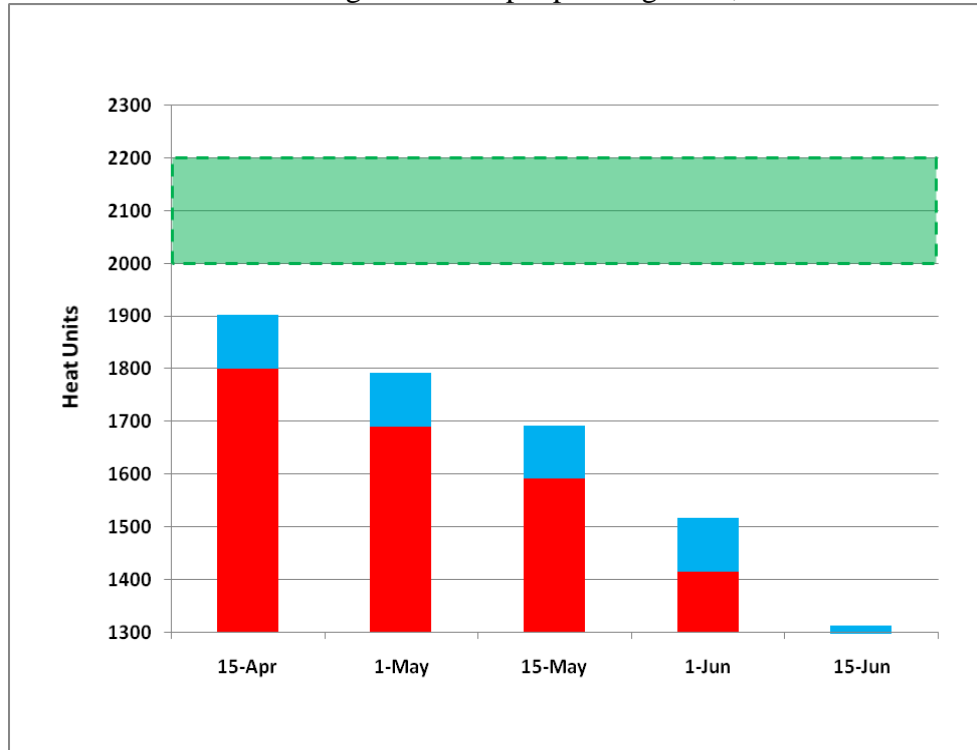
Things to remember about the Managed Maturity:

1. There is no going back, when you make the application you will remove small bolls, squares and juvenile leaves. Make sure you have you all the bolls you expect to harvest set before making the application.
2. This is NOT a first pass defoliation. It only removes the top of the canopy.
3. 1 quart of Aim will treat 85 acres at the 3/8 oz/ac rate.
4. Apply with 10-15 gallons of water carrier per acre and include 1% v/v of COC.

So what is the bottom line with the managed maturity approach in Tennessee? It does not fit all acres, only rank cotton that has potential for boll rot and late season insect pressure. From my perspective, it does not fit our April and early May planted cotton. It does fit our mid May to early June cotton that is taller than we typically expect. My recommendation is to take a look on some early planted acres to see if you like the results, then decide for yourself if it fits your later planted cotton. I will have a demonstration of this approach at the cotton field tour next week in Jackson.

Figure 1 tracks milestones in heat unit accumulation. The green box represents the target heat unit accumulation for this year's crop to mature. Light blue bar segment represents accumulation over the past week.

**Figure 3.** Heat unit accumulation target for multiple planting dates, 2009.



### Insect Considerations (Scott Stewart, IPM Specialist)

**Cotton.** A number of fields have recently been treated for bollworm infestations with generally good success. The big topic this week, and the appropriate one, has been cleaning up any insect problems before letting fields go. Many fields are already past NAWF5 + 350-400 DD60s and additional insecticide applications are already unnecessary. On later maturing fields, consider terminating insecticide applications on fields that are relatively “clean.” Some of the later/greener fields will need to be managed for stink bugs, fall armyworms and bollworms for about another 10 days. I’ve seen a lot of bollworm moths in some fields. I have also seen Bollgard fields requiring treatment for fall armyworm. *Remember:* the treatment threshold for fall armyworm is 4 or more larvae per 100 bolls and/or blooms; or 10-20 larvae per 100 plants. Don’t forget to look in and under pink blooms.

**Soybean.** It is still relatively quiet. We have seen a spike in bean leaf beetle numbers and stink bugs in some fields that are R6 or above (for example, here at the station). However, I’ve not had reports of either pest exceeding threshold. For bean leaf beetle, the recommend treatment threshold is if they are causing 20% or more defoliation anytime between R1-R7. An alternative

threshold is two bean leaf beetles per sweep. Most folks are still commenting about the general lack of stink bugs (but that will likely change in later maturing beans in a few weeks).

### **Regional Report (Hayden E. “Gene” Miles, Area Extension Specialist, Northwest Tennessee)**

**Cotton** - Some parts of the area are still dry this week and rain is forecast for later this week. Growth stages of cotton being reported this week from producers, consultants and IPM scouts range from boll set to boll maturing. More mature cotton plants in the Delta are averaging 15 1<sup>st</sup> positions and dropped from 73 percent last week to 68 percent 1<sup>st</sup> position fruit retention this week. Plant bug numbers being reported from private consultants and IPM scouts range up to 37/100 sweeps and/or 1.7 per 6 row feet. Spider mites and stink bug populations being reported are below threshold levels this week. Bollworm/budworm damage being reported from private consultants is 5% fruit damage (threshold - 2%) in Bollgard II cotton, 1% fruit damage in WideStrike fields and 3 worms/100 terminals in conventional cotton. When checking for bollworm/budworm damage, dried bloom tags should be removed from bolls that are being checked and observed for worm damage. Dried bloom tags are also favorable sites to observe bollworm/budworm eggs. The high beneficial count being reported this week from IPM scouts is 10.6 per 6 row feet.

**Soybeans** - Fall armyworm numbers being reported from private consultants and IPM scouts range up to 0.4 per 3 row feet and/or 8 per 100 sweeps which are below threshold. Also all corn earworm and stink bug numbers being reported this week were below treatment levels. Sudden Death Syndrome (SDS) has been noted in the area this week.

At this time, I would personally like to thank producers, U.T. Extension personnel, county IPM scouts, agricultural industry personnel and private consultants for their contributions to my portion of the IPM letter this season.

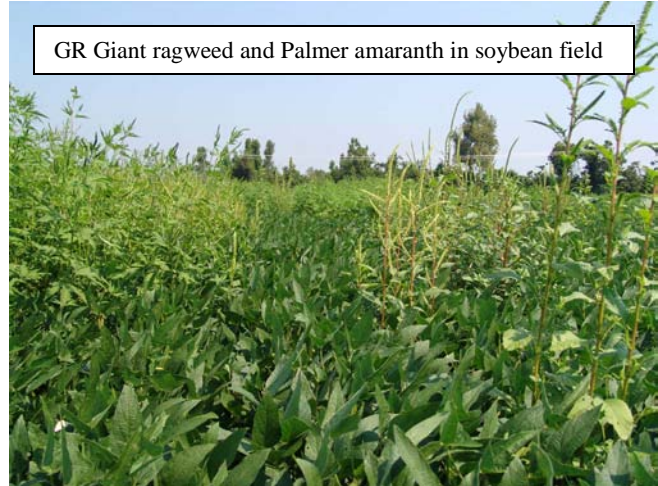
### **Weed Control (Larry Steckel, Extension Weed Scientist)**

Palmer amaranth is very apparent in some corn fields as they dry down in West Tennessee. I have walked into a number of these corn fields and the Palmer is anywhere from 4 to 8 feet tall and flowering (Picture right). These weeds will be able to produce millions of seed prior to a first frost. The point is not to forget corn fields after harvest. An investment of Gramoxone Inteon applied after harvest may save some herbicide expense in that field for several years to come.



The Palmer that is very visible in our soybeans and cotton is more mature and has in most cases already produced a lot of seed. There is nothing to do about that at this point but be sure to make

notes on which fields or areas of fields have glyphosate-resistant (GR) Palmer amaranth during harvest to help you make your weed control plans in 2010. Take particular note of fields that have **2 GR weeds** like this picture (right) taken in Lake County this week. From a weed management perspective these fields should be targeted to be planted to corn or grain sorghum if practical in 2010.



If these fields are to be planted to soybeans in 2010 then plan on the weed management to be different than fields that just have GR Palmer. The reason for this is that the pre applied herbicides most growers have used to help manage GR Palmer like Valor or Prefix are not as effective on giant ragweed. There are not that many herbicide premixes that contain a component for the Palmer amaranth as well as the giant ragweed. Two premixes for soybeans that do would be Authority MTZ (sulfentrazone + metribuzin) or Boundary (Dual Magnum + metribuzin). Make sure to spike the metribuzin up to the level the soil type will handle. From a Post emergence perspective, Ignite is the most effective herbicide on giant ragweed and will control Palmer amaranth up 4 to 5” tall. In other words, from a weed control perspective, a Liberty Link soybean variety would be a good idea.

If these fields infested with GR Palmer and GR ragweed are to be planted to cotton then a Ignite tolerant variety is a must! The pre applied herbicides available in cotton are feeble at best in controlling giant ragweed. Therefore one must plan to spray Ignite over the top at least once. Then post direct with Direx + MSMA or Suprend + MSMA.

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

I have been getting a few calls from producers and suppliers on the economics of wheat. In visiting with this same group, there does not appear to be a huge interest in wheat for the 2010 production year. The lack of interest could be from the memories of the poor to below average 2009 wheat crop. In projecting production costs for wheat, it does appear that the cost of production for wheat planted in the fall of 2009 will be less than what it was for wheat harvested this year.

Using projected input prices, I have modified the University of Tennessee’s Wheat budget and am summarizing it as follows:

Variable Expenses	Cost per Acre
Seed & Treatment	\$ 46.00
Fertilizer(includes lime)	\$ 72.00
Chemicals	\$ 32.00
Fuel & Repairs	\$ 37.00
Operating Interest	\$ 10.00
Total Variable Expenses	\$ 197.00

When making cropping decisions where the equipment complement is set and not likely to change, the projected returns above variable expenses is a useful tool. If equipment is changing, then a whole farm plan or at least a budget including fixed costs would be needed.

The current USDA projections for wheat ending stocks are double that of the previous marketing year and this has put downward pressure on prices. The market is essentially saying there is too much wheat. Most likely, we will see U.S. wheat acres drop some more in 2010 which should be supportive of prices. We will, however, need for wheat prices to become more competitive on the global market and see a reduction in wheat ending stocks for prices to recover. The next two tables examine the returns above variable expenses at varying yield and market prices as well as taking out a straight 25% share rent.

Wheat Per Acre Returns Above Variable Expenses

Yield/Acre	\$3.75 bu.	\$4.00 bu.	\$4.25 bu.	\$4.50 bu.	\$4.75 bu.	\$5.00 bu.
40	-\$47	-\$37	-\$27	-\$17	-\$7	-\$3
50	-\$10	-\$3	\$16	\$28	\$41	\$53
60	\$28	\$43	\$58	\$73	\$88	\$103
70	\$66	\$83	\$101	\$118	\$136	\$153

Wheat Per Acre Returns Above Variable Expenses and Share Rent (25%)

Yield/Acre	\$3.75 bu.	\$4.00 bu.	\$4.25 bu.	\$4.50 bu.	\$4.75 bu.	\$5.00 bu.
40	-\$85	-\$77	-\$70	-\$62	-\$55	-\$47
50	-\$56	-\$47	-\$38	-\$28	-\$19	-\$10
60	-\$28	-\$17	-\$6	\$6	\$17	\$28
70	\$0	\$13	\$26	\$39	\$52	\$66

Tennessee yields in 2009 are currently projected statewide to be 54 bushels per acre. This would make the five year Olympic average to be 58 bushels per acre. It appears that yields above 60 bushels/acre are needed to make wheat a profitable crop. This is particularly true on a share rent farm where it looks like 70 + bushels per acre are needed to make wheat feasible. Returns from wheat are typically better on own or cash rent ground.

When we start thinking about wheat, we are really starting the crop planning process for the next year as producers will want to compare wheat and probably double crop soybeans to either corn, full season soybeans or cotton. It is important for producers to look at their yields and projected prices when determining the most profitable crop mix. The table below examines returns of wheat/soybeans, corn, cotton, and full season soybeans at the 5 year Tennessee Olympic average and an average price. Full season and double crop soybeans yields are not kept separate by NASS, so the yields below are approximations. Cotton price would be inclusive of loan, equity, seed and hauling. Land cost is a straight 25% of revenue cost and is used as an estimate.

2010 Projected Per Acre Returns

	Wheat/Soybeans	Corn	Cotton	Soybeans (Full Season)
Yield	58 bu./28 bu.	124 bu.	891 lbs.	40 bu.
Price	\$4.25/\$8.50 bu.	\$3.25 bu.	\$0.62 lb.	\$8.50 bu.
Revenue	\$485	\$403	\$552	\$340
Variable Cost	\$369	\$311	\$444	\$233
Returns over Variable				

Cost	\$116	\$ 92	\$108	\$107
Land Costs	\$115	\$ 97	\$133	\$ 82
Returns over Variable and Land Costs	\$ 1	(\$ 5)	(\$ 25)	\$ 25

In projecting returns, I would rather be conservative on prices rather than be overly optimistic. If revenues were 10% higher, the relative ranking of the crops would still be in the same order. It does not take much of a yield increase at today's prices for one crop to overshadow the other. In farm plans, I do like the diversification of crops and crop rotation as we just don't know what crop will yield the best. From year to year, there are always adjustments that can be made in the mix based on what will give the greatest return.

Develop your own table using your input costs, yields, price, and rent assumptions. Wheat has been and can be a profitable crop and works well in a crop rotation. Discuss with your supplier, fertilizer and other input costs. With careful planning, more favorable input prices may be secured. Every farm situation is different so plan ahead to make informed decisions in your operation. If you would like assistance in developing a farm plan or budget, contact your local County Extension office.

The University of Tennessee is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services. All qualified applicants will receive equal consideration for employment without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, or covered veteran status. The University of Tennessee Institute of Agriculture, Agricultural Extension Service, Tim Cross, Dean.

**DISCLAIMER STATEMENT**

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label takes precedence over the recommendations found in this publication. Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), The University of Tennessee, The Institute of Agriculture and the University of Tennessee Extension assume no liability resulting from the use of these recommendations.

Scott D. Stewart (editor)  
Extension IPM Specialist

