

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 14

June 15, 2007

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

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In-field Soybean Scout Schools Next Tuesday and Wednesday

The program will be about 90 minutes long and concentrate on monitoring common insect pests, foliar diseases, and the determination of plant developmental stage for the timing of fungicides. Some handouts and other scouting supplies will be provided.

County	Date and Time	Location	Contact*
Weakley	June 19, 9:00 am	Hall Shop, 1785 Bob Miles Road (From Hwy 89, 7 miles west of Sharon)	Jeff Lannom 731-364-3164
Gibson	June 19, 1:30 pm	Ag Museum, Milan Research & Education Center	Philip Shelby 731-855-7656
Lauderdale	June 20, 9:00 am	Parker Shop, Durhamville-Orysa Rd. (5 miles south from Hwy 19, or 1.5 miles north from Hwy 87)	Jerry Parker 731-635-9551
Dyer	June 20, 1:30 pm	Mt. Tirzah Baptist Church, Tatumville Road (north from Hwy 104, 6 miles east of Hwy 412)	Tim Campbell 731-286-7821

* Contact you local County Extension Agent, or see http://www.utextension.utk.edu/fieldCrops/upcoming_events.html for additional details including maps to some locations.

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

The Tennessee agricultural statistics agency reports that 13% of the crop is squaring compared to 4% last week and 11% last year, slightly ahead of the 5 year average of 11%. Cotton condition is rated as fair to good with good square retention. While the lack of rainfall has reduced some stands of late planted cotton, the crop is progressing well. Drought stress will quickly become detrimental to the crop as more squares are set on the plant. Remind your scouts to looks for actual insects when evaluating square retention not just dropped squares. The dry condition will lead to some square shed and we do not need to spend money on unneeded insecticide sprays.

DD 60 Accumulation (TASS and NWS data).

Location	4/20-6/14	4/27-6/14	5/4-6/14	5/11-6/14	5/18-6/14	5/25-6/14
Brownsville	668	620	568	497	395	350
Dyersburg	710	661	605	544	425	366
Fayetteville	748	701	638	549	471	402
Memphis	871	831	735	614	524	439
Milan	649	602	550	448	378	336

Insect Issues (Scott Stewart, IPM Specialist)

Cotton. The cotton is generally hanging on, and providing we get a couple of critical rains, still has good yield potential. Plant bugs are at treatment levels in some fields, near or above the threshold of 8 plant bugs per 100 sweeps. Be aware that during early season, plant bugs tend to concentrate on fields that have the most squares. I've previously listed recommended insecticides (Centric, Trimax, Carbine and Intruder). Do not cut insecticide rates when plant bug populations are well above the threshold. You can use any rate you want when pest populations are well below threshold. Also keep in mind that residual control with the best of these treatments will not usually be effective beyond 4-5 days. This means that treating this week does not mean you are "safe" next week. Spraying before you have many plant bugs present is a good way to waste money. I mention this because a common comment is "even though I'm not at threshold, I'll treat now to save a separate trip next week." At this time of year, migration into fields is the primary source of plant bug infestations. If you have a lot of migration following an application, you will likely have to treat again. A good example is occurring this year in much of the Delta in Mississippi and Louisiana. Many fields are being inundated with tarnished plant bugs, and growers are spraying weekly or more often just to maintain 60-80% square retention.

Serious spider mite infestations are still primarily localized to a few areas. I will not go into the details of a spider mite trial we recently rated in Carroll County. We have only rated this trial at 4 days after treatment, and some of the products have not yet had a full opportunity to work. However, I can say that dicofol (e.g., Kelthane) at 1 qt/acre provided over 98% control of mites. Frankly, this is better than should be expected, but Kelthane performed so well that nothing in this test will catch it. I can also say that dimethoate gave essentially no control. This was a broadcast application at 11 GPA using flat fan nozzles. Banding is a good way to cut costs, but practical indications from the field suggest it may also reduce control. UT's recommends treatments when 30-50% of plants in a field are affected, but frankly, deciding when to treat mites requires experience. I've seen some fields with essentially every leaf stippled with spider mites, and left untreated, these infestations continue to worsen. Nevertheless, some growers are hesitant or refuse to treat. Some of these same growers are "foliar feeding" there cotton or corn. Unfortunately, water (not fertility) is the limiting factor in most places. If you have mites and you want to "green-up" your cotton, the best thing to apply is a miticide.

Tobacco budworms moth catches are very similar to last year and concentrated in Shelby, Tipton, Crockett and Madison Counties. Last year, we had some difficulty with this pest in non-Bt cotton. We may start seeing a few eggs and larvae in early planted fields. I don't expect major problems, but this indicates a potential for budworm issues later in the season.

Corn. Corn borers, almost exclusively the southwestern corn borer (SWCB), are fairly common in some areas of West Tennessee. Based on what I've seen and heard, the first generation moth flight is essentially over in most areas, and most larvae are now or soon will be tunneling into the stalks (picture courtesy of University of Missouri). Thus, if you needed to spray corn borers and you haven't already, it is likely too late to get much benefit until the next generation shows in about a month. Considering the size of the first generation in some areas, it is certain that some non-Bt fields will be heavily infested with SWCB in mid to late July. In almost all fields, this will not coincide with early tasseling. So, if you intend to spray a fungicide at early tassel, a later



application for corn borers may be necessary. This is not a popular thought, but sometimes the truth hurts. As dry as it is in many areas, it may be hard to justify and insecticide or fungicide application. Applications should target fields with decent yield potential.

It is not too late to order moth traps and pheromone for monitoring the second generation of SWCB. In fact, I consider this a must if you have thoughts of spraying non-Bt corn on your farm. I think every farmer should have a couple of traps. You may want to share the cost with some of your neighbors because traps and pheromone are purchased by the case. Actual cost, including pheromone, is only about \$15 per trap. I order my supplies from Great Lakes IPM (see below). I use the “green bucket traps” and Hercon pheromone lures, which need to be replaced every four weeks. Traps will last several years. It does not take a lot of expertise or effort to run these traps.

Great Lakes IPM, Inc. (Phone: 989-268-5693 or Toll Free: 1-800-235-0285 or <http://www.greatlakesipm.com/>)

Japanese beetles are common this year in parts of West Tennessee, particularly as you travel north. I usually get more calls about this insect than is really justified because they are large, showy beetles often found in “coveys” and cause obvious leaf injury (although usually on relatively few leaves). Adults feed on most crops, and although soybean is a favorite, corn may be a bigger concern. Treatment for Japanese beetles in field corn may be justified during silking. Beetles can clip silks prior to pollination and keep kernels from developing. They had problems last year in parts of the Midwest. Although there has not been a lot of research regarding treatment thresholds, it takes a lot of Japanese beetles to justify spraying corn. One recent threshold I found from Virginia Tech said “an insecticide application is warranted if an average of more than three adult beetles is found per silking ear, or if 50 percent of the plants have silks clipped to a length of 1/2 inch or less.” Virginia Tech also has a good on-line publication at the following address: <http://www.ext.vt.edu/pubs/entomology/444-106/444-106.html>.



Never say never, but I have not seen Japanese beetles cause enough injury in West Tennessee to justify treating soybean, field corn, or cotton. However, I would treat any reproductive-stage soybean field that had 20% or higher defoliation (use 30-35% prior to bloom). Pyrethroid insecticides are generally recommended for Japanese beetle when an application is warranted.

Soybean. Early planted beans are now blooming and need to be scouted for stink bugs. Adult stink bugs are primarily seed feeders, and early beans are one of the first crops they will target. The treatment threshold for stink bugs prior to R6 is 3 bugs per 25 sweeps (or 12/100 sweeps). This is an aggressive threshold, so there is no need to cheat. Populations at this time will typically be adults (pictured right), and unless you have many brown stink bugs, the pyrethroid insecticides including Karate, Mustang Max, Prolex and Baythroid XL are recommended for control. Scouts should also be looking for potential corn earworm infestations that sometimes occur one beans begin to bloom.



Area Report for Northwest Tennessee (Gene Miles, Area Crop Specialist, Week of June 11th).

Parts of the area have received some timely showers while the overall growing conditions still remain dry. Growth stages of cotton being monitored through Dyer and Lauderdale County IPM programs this week range from 3rd to 8th node. The more mature cotton fields in the Delta are in the 11th node and range from 90-93% square retention. Cotton should put on a new node about every 2.7 days under adequate growing conditions. Tarnished plant bugs can readily be found in crops (alfalfa, clover) and in naturally occurring weeds like fleabane. Plant bug numbers being reported this week range up to 0.1 per 6 row feet and/or 6 per 100 sweeps in 2nd week squaring cotton. If using a drop cloth, make sure to slide between rows as not to disturb insect populations before shaking the plants. A minimum of 30 row feet should be checked in fields in size up to 75 acres. As field size increases above 75 acres, the number of row feet checked with a drop cloth needs to be increased to obtain accurate counts of insects per field. Light spider mites are being observed this week and small grasshoppers are being noted causing 0-5% defoliation. Beneficial insect counts range up to 11.3 per 6 row feet.

Wheat - Yields of surviving wheat fields being reported from Dyer County range from 58 to 60 with test weights 58 and above.

Corn - More mature fields of corn are producing silks this week and some irrigated fields are being treated by air with recommended fungicides for grey leaf spot.

Stored Grain (Russ Patrick, IPM Specialist). I have been asked what materials can be used on stored wheat in grain bins. First of all clean up the bin before filling. Tempo Ultra SC can be used only on the empty bin, and then you can fill it with the grain. If you wish to use a grain protectant we recommend Storcide II for use on the grain itself. It is the only one that is being recommended as you bin the grain. Rates: 12.4 ounces in 5 gallons water/1000 bushels. The protectant is added to the grain stream as it goes into the bin. You will not get complete protection but it will reduce infestation during storage. Costs are about 3 to 4 cents a bushel which is not bad for keeping insects out of your grain.

Weed Control (Larry Steckel, Extension Weed Specialist)

Post-direct Mixtures. Some post-direct applications have started over the past few days. A typical post-direct application often contains glyphosate plus another herbicide to provide a residual component and/or to help control weeds that are not readily controlled by glyphosate. There are several newer herbicides that can be used post-directed or under a hood with or without glyphosate. Walking cotton fields last year it was evident that sloppy post-direct applications of glyphosate caused malformed bolls in many fields. This points out that care must be taken to minimize contact of glyphosate to cotton vegetation. When trying a new tank mixture for the first time it is advisable to run a jar-test first to make sure they will mix in a tank. Below are some of our thoughts on several post-direct options.

Aim 1 oz/A + Glyphosate 0.75 lbs ae/A

- Advantages: Very economical. Aim can provide excellent control of pigweeds and large running morningglories. Glyphosate mixes well with Aim.
- Considerations: Applications to cotton with less than 5 to 6 nodes may be made with hooded sprayers. Layby applications of Aim tank mixtures may be made when cotton has achieved a height of 12 inches or more with sufficient bark development. Expect some speckling of upper cotton leaves if post-directed. Sloppy post-direct of Aim can severely burn green cotton stems and leaves. This mixture will not control emerged horseweed or provide any residual weed control.

Reflex 16 ozs/A or Valor 2 oz/A + Glyphosate 0.75 lbs ae/A – Reflex was just labeled last summer as a post direct application. Cotton must be at least 6” tall. Surfactant is not needed if the glyphosate used has a surfactant included.

- Advantages: Good residual pigweed control. A Reflex or Valor + glyphosate mixture will control pigweeds including Palmer pigweed. Reflex and Valor can provide excellent residual control of horseweed.
- Considerations: Sloppy post-direct of Reflex or Valor will burn cotton leaves.

Direx 12 ozs/A + Glyphosate 0.75 lbs ae/A – The most commonly used post-directed tank mix in Tennessee. Cotton must be at least 6” tall. Surfactant is not needed if the glyphosate used has a surfactant included.

- Advantages: Economical. The Direx + glyphosate mixture will control pigweeds including Palmer pigweed. Direx can provide limited residual control of horseweed.
- Considerations: The Direx + glyphosate mixture will not control emerged glyphosate-resistant horseweed. Direx will settle out in the tank when mixed with many formulations of glyphosate, so aggressive tank agitation is necessary. Sloppy post-direct of Direx will burn cotton leaves.

Caparol 24 ozs/A or Cotoran 32 ozs/A + Glyphosate 0.75 lbs ae/A - Cotton must be at least 6” tall.

- Advantages: Economical. This mixture can control most morningglory species up to 4” tall. Caparol will provide very good residual control of Palmer pigweed and horseweed.
- Considerations: Cotoran is weak on Palmer pigweed. Caparol and glyphosate mixtures need good agitation to stay in suspension. Will not control emerged horseweed. Sloppy post-direct of Caparol or Cotoran will burn cotton leaves and stems.

Ignite 280 at 29 ozs/A - Cotton must be at least 6” tall.

- Advantages: It will control horseweed up to 6” in height. Oftentimes, Ignite can control taller horseweed under high temperatures and humidity. Good control of many broadleaf weeds including the morningglory species.
- Considerations: Ignite is weak on grasses and Palmer pigweed. Herbicides that will help control pigweeds would be Caparol at 24 ozs/A, Direx at 12 ozs/A or Cotoran at 32 ozs/A. **DO NOT** mix Ignite and glyphosate. These two herbicides are antagonistic and will reduce overall weed control.

Premixes

Layby Pro 1 qt/A - Equivalent to 16 oz of Direx + 16 oz of Linex. Add one percent crop oil for better control.

- Advantages: Good control of many grasses and broadleaf weeds including pigweeds and morningglories. Direx and Linex provide good residual control of pigweeds.
- Considerations: Refer to label for rates on coarse soils. This premix will not control grasses. The addition of MSMA 2.67pts/A of 6L formulation or glyphosate at 0.75 lbs ae/A will control grasses.

Suprend 1.25 lbs/A – Equivalent to 32 ozs of Caparol + 0.15 ozs of Envoke/A. Add one percent crop oil for better control.

- Advantages: Good control of many grasses and broadleaf weeds including pigweeds and morningglories. Caparol is one of the better residual herbicides for pigweed control. This premix in our research has controlled small horseweed in our studies.
- Considerations: This premix will not control grasses. The addition of MSMA 2.67pts/A of 6L formulation or glyphosate at 0.75 lbs ae/A will control grasses.

Timing of Fungicides on Soybeans (Angela Thompson, Extension Corn and Soybean Specialist)

Reports of soybean rust are quiet further south and this week's sentinel plots came back clean. Soybeans planted before April 25th are at or approaching R3. Because of the extremely dry weather, some soybeans are very short for this time of year with only 10 or so nodes. A soybean plant is capable of producing more than 16 nodes at maturity, regardless of whether it is an indeterminate (Group 3 or 4) or a determinate bean (Group 5 and beyond). A variety that is short due to genetics, is planted in June or July or subjected to drought stress such as we are experiencing this year may produce fewer total nodes. To make R3 fungicide applications most effective it is still important to apply the fungicide when beans have accomplished much of their vegetative growth and are at R3 in order to maximize effectiveness of the fungicide spray. Indeterminate varieties should continue to add new growth with some rain in the forecast.

Do Group 3's and 4's Develop Differently from Group 5's? A Group 5 soybean grows vegetatively (about 10-12 weeks if full season) producing the trifoliolate nodes it will have for the year, generates a flowering structure on the top of the plant and blooms from the top to the bottom along the main stem within a few days time. Determining the growth stage of a Group 5 bean is simple because all vegetative nodes are there when flowering starts, and there is a single time period that a Group 5 bean is at R3.

Indeterminate beans start blooming about 4-6 weeks after emergence and continue to add new nodes, while also blooming and making pods, until some trigger shuts vegetative growth down. Because the wide window of flowering overlaps with vegetative growth, indeterminate soybeans can actually be at R3 more than one time in the season! **A fungicide spray on indeterminate beans should be timed when beans have much of their vegetative growth (you can count at least 12 trifoliolate nodes in a dry year and preferably 15) and be at R3 in order to protect as much of that plant as possible.**

What is a node? After the first node (unifoliolate leaves that are opposite on the stem), a node is a location on the main stem with a fully developed trifoliolate. Trifoliolate nodes will be alternating (not opposite) on the stem. During drought stress, trifoliolate nodes will stack closely on the stem. To count total plant nodes, you should look for two sets of opposite scars closer to the soil line. The pair closest to the soil line is where cotyledon leaves were located. The next pair of opposite scars are where unifoliolate leaves are or were (this is node number one). Continue to count the alternating trifoliolates (in plants with several trifoliolates you may have to count the scar where bottom leaves have shed) to the top of the plant. The last fully developed trifoliolate (unrolled and is at least half the size of the trifoliolate below it) at the top is the last trifoliolate node on the plant at that time.

The definition of reproductive stages is the same for Group 3, 4 and 5 beans. The following is a reminder about growth stages and why Group 3 and 4 beans can be tricky to stage.

R1 starts with one bloom anywhere on the main stem. On Group 3's and 4's the bloom first appears about 4-6 weeks after planting when a plant has about 4 trifoliolates and is smaller than knee high. The later into the season that soybeans are planted the quicker



they will start blooming. The first bloom on Group 5's occurs towards the top of the plant up to 12 weeks after planting when the plant has developed the nodes it will have at maturity.

R2 is considered full bloom. A plant is at R2 when a bloom is found on one of the top 2 nodes with a fully developed trifoliolate leaf. With Group 3 and 4 soybeans, R2 can occur when a soybean has as few as 8 nodes. The important thing to remember is that with rainfall and good growing conditions, **indeterminate plants will continue to add new nodes for a period of time**, so R2 becomes a fuzzy, moving target.

R3 is early pod formation. A soybean plant is at R3 when tiny (3/16" pods) can be found on any one of the top 4 nodes with a fully developed trifoliolate. Group 3 or 4 beans can have tiny pods when plants have as few as 8 nodes. Under stress, growth slows down and pods can be found 'at the top' of the plant. However, when water comes, new growth is produced with more nodes and flowers and pods on the new growth. Like R2, **R3 can also be a fuzzy moving target until we get into July**. The important thing to remember is to allow indeterminate beans to get as much growth as possible so that when we spray an indeterminate bean at R3 with 15 trifoliolate nodes, that fungicide spray will be protecting the majority of pods retained on that plant.

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

The June USDA reports were released on Monday, June 11 with a few changes from the previous month. These changes in ending stocks can be summarized as follows:

June USDA US Report 07-08

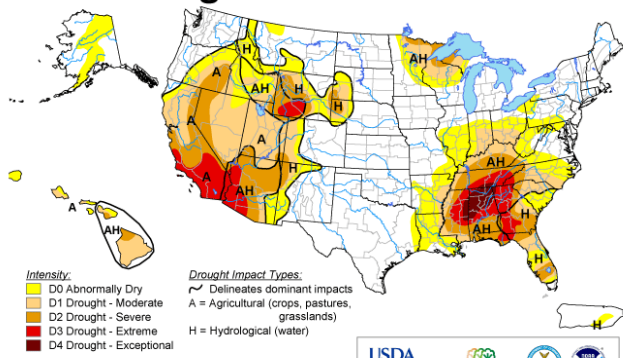
Crop	US Ending Stocks 07-08	% from May
Wheat	443 million bushels	-5%
Corn	997 million bushels	+5%
Soybeans	320 million bushels	-
Cotton	6.7 million bales	+5%
Rice	25.7 million cwt	+5%

From an initial glance the monthly report should have been bullish for wheat, neutral for soybeans, and bearish for corn, cotton and rice. However, for the most part the market has responded favorably for crop prices. The market can quickly change from trading fundamental data (Supply & Demand) to one

trading the perception of what the data can be. This perception is based on the current events of the day or week. Weather conditions are weighing heavy on the market at this time. The wheat market has been responding to a delay in harvest in the Plains from too much rain, while the corn and soybean markets are looking to the heat and dry weather forecast through parts of the Midwest. The heat and dry weather in the Southeast and Mid-South, although critical to farmers in those areas, do not make much impact on the grain and soybean markets. The markets do have a synergy whereas one commodity will affect the other.

U.S. Drought Monitor

June 12, 2007
Valid 8 a.m. EDT



The Drought Monitor is released each Thursday morning and can give us clues to market anticipation. The drought has expanded northward from Tennessee with the potential to continue moving to the Eastern Midwest. Weather forecasts are conflicting with some predicting heat and dry weather for that region. As we know, weather can change quickly, along with the commodity markets. The weather conditions in Tennessee dictate that for the most part, producers be conservative with their forward pricing until a clearer picture of production is established. However, keep an eye on using put options to set a floor and at the same

time allowing for an upside. Using put options, producers know upfront the cost and what the floor will be. Currently, a \$3.44 floor (assuming a -\$0.34 basis) for corn and \$7.50 floor (assuming a -\$0.51 basis) for soybeans could be established. The 2008 and 2009 markets are offering very attractive prices, especially for wheat. Don't let this year's experience with wheat keep you from producing it in the future. The full USDA monthly report can be found at the website <http://www.usda.gov/oce/commodity/wasde/>. The US Drought Monitor is located at <http://drought.unl.edu/dm/>.

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 6, Ending 6-13-07)

Trap Location	Tobacco Budworm	Corn Earworm (Bollworm)	Beet Armyworm	Southwestern Corn Borer
Hardeman (Bolivar)	0	0	0	---
Fayette (Whiteville)	22	0	0	---
Fayette (Somerville)	0	0	---	0
Shelby (Millington)	31	*	0	---
Tipton (Covington)	15	0	0	---
Tipton (North)	0	0	---	0
Haywood (West)	0	6	0	---
Haywood (Brownsville)	0	0	---	---
Madison (Exp. Stn.)	0	17	0	0
Madison (North)	17	11	---	---
Crockett (Alamo)	0	0	0	---
Crockett (Maury City)	18	0	---	---
Dyer (Bogota)	0	0	0	---
Dyer (Newbern)	0	8	---	7
Lake (Ridgley)	0	10	0	---
Gibson (Kenton)	0	0	---	---
Gibson (Milan Exp Stn.)	0	0	0	6
Carroll (West)	0	0	0	---
Lauderdale (Goldust)	0	0	0	---

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

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DISCLAIMER STATEMENT

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Scott D. Stewart (editor), Extension Cotton IPM Specialist

