

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 11

June 16, 2006

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

Bookmarks: [Cotton update](#) [Weed controls](#) [Insects issues](#) [Area report](#) [Soybean/Corn Update](#) [Farm management](#)
[Storing wheat](#) [Moth traps](#)

Cotton Crop Update (Larry Steckel, Assistant Professor)

The Tennessee Ag-Statistics Service reports that 12% of the cotton is squaring compared to a five year average of 13%. The cotton that is squaring is 8 to 14" tall and anywhere from 6 to 10 nodes. When the cotton reaches this maturity stage producers start to think about plant growth regulator applications. Mepiquat chloride (MC) application strategies seem to be as much an art as a science. Blanket recommendations are almost impossible to make as every situation is different. However, taking into account the dry soil conditions most are currently faced with, it may be best to proceed cautiously on the earlier planted cotton that is at matchhead square. On the other hand, the late May and June planted cotton may need to be managed more aggressively to push earliness particularly if the growing season becomes more favorable. A good guide on plant growth regulator use has been written by Sandy Stewart, the LSU Cotton Specialist, and can be accessed at:

<http://www.lsuagcenter.com/NR/rdonlyres/A1B2BADB-6176-4C91-B3F8-B2D875FC62BD/12012/pub2918cotton1.pdf>

There is a new plant growth regulator on the market this year for cotton called Stance. Most of the cotton specialists in the Mid-South have looked at this product. The general conclusion is that more needs to be known about it before they are comfortable recommending it early in the cotton growing season. Its use rates are much lower (2 to 3 ozs/A) than the plant growth regulator rates we are accustomed to.

DD-60 Accumulation (TASS and NWS data)

<u>Location</u>	<u>4/17/06- 6/11/06</u>	<u>4/23/06- 6/11/06</u>	<u>5/1/06- 6/11/06</u>	<u>5/8/06- 6/11/06</u>	<u>5/15/06 6/11/06</u>	<u>5/22/06 6/11/06</u>	<u>5/28/06 6/11/06</u>
Ames Plantation	575	488	449	400	378	340	215
Brownsville	623	536	492	443	416	366	240
Covington	568	489	456	412	390	343	220
Dyersburg	636	550	505	453	431	375	250
Huntingdon	510	435	394	360	345	316	211
Jackson	564	484	441	397	375	335	221
Memphis	648	552	511	453	425	379	238
Milan	526	452	415	376	360	323	212

Cotton Weed Control (Larry Steckel)

Post 5 Node Over The Top Applications. Some folks have called with questions about Envoke and Staple over the top. Both will provide good control of most morningglory species. Envoke in addition will readily control nutsedge. Staple is the only one of the two currently labeled to be mixed with glyphosate over the top of RR Flex cotton. Staple has a new liquid (LX) formulation. The conversions from the SP formulations are as follows for the two most popular Staple rates.

Staple 85 SP Rate of 0.6 oz/A is equivalent to 1.2 oz/A of Staple LX

Staple 85 SP Rate of 1.2 oz/A is equivalent to 2.4 oz/A of Staple LX

Post Direct Mixtures. Some post direct applications have started over the last several days. A typical post direct application often contains glyphosate plus another herbicide to provide a residual component and/or to help control weeds not readily controlled by glyphosate. Walking cotton fields last year it was evident that sloppy post direct applications were the cause of some malformed bolls and possibly some of the mysterious square dropping. Below are some thoughts on several post direct mixtures.

Aim 1 oz/A + MSMA 2.67 pts/A of 6L formulation or glyphosate 0.75 lbs ae/A

Advantages: Very economical. Aim can provide excellent control of pigweeds and large running morningglories. The MSMA or glyphosate is mainly targeting grasses and they mix well with Aim.

Considerations: Application 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. Sloppy post-direct of Aim can severely burn green cotton stems and leaves. This mixture will not control emerged horseweed or provide residual weed control.

Direx 12 ozs/A + MSMA 2.67 pts/A of 6L formulation or glyphosate 0.75 lbs ae/A

Advantages: Economical. Direx + MSMA can provide control of emerged horseweed. Direx + glyphosate will control pigweeds. Direx can provide limited residual control of emerged horseweed.

Considerations: Cotton must be at least 6" tall for Direx applications. Direx will readily settle out in a tank when mixed with glyphosate so aggressive agitation is necessary.

Sequence 2.5 pts/A (= glyphosate 0.75 lbs ae/A + 1 pt of Dual/A)

Advantages: Good control of many grasses and broadleaf weeds. This mixture is much less harmful to cotton if applied sloppy post-direct.

Considerations: Dual needs a rain 7 to 10 days after application to provide effective residual control. This mixture will not control morningglories or nutsedge. The addition of 0.15 oz/A of Envoke to this mixture will control those weeds.

Suprend 1 lb/A (= Caparol 25.6 oz/A + Envoke 0.15 ozs/A)

Advantages: Good contact and residual control of many sedge and broadleaf weeds. This premix in our tests was very effective controlling horseweed.

Considerations: Add one percent crop oil for better control. The addition of glyphosate or MSMA is needed to control some grasses with this mixture. This premix is a little higher priced than the others mentioned and many growers will cut the rate. Reducing the rate will often not harm the control provided by Envoke as even 0.10 oz/A can control small morningglories, though 0.15 oz/A is needed for larger morningglories. However, the Caparol in the premix at a cut rate will in most cases not provide sufficient residual control. If no layby is planned I would recommend spiking

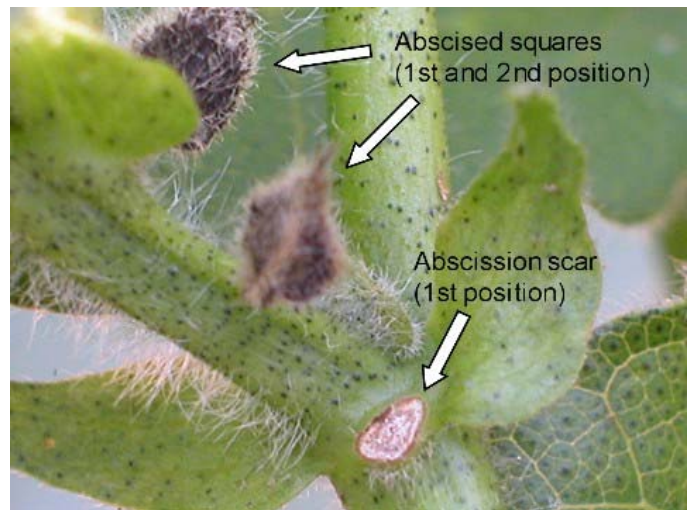
reduced rates of Suprend with enough Caparol to reach a level of a 32 oz/A of that product. Below are some spiking recommendations of Caparol to reduced rates of Suprend:

Suprend Pounds/Acre	will provide =	Envoke Ounces/Acre	+	Caparol Ounces/Acre	Additional Caparol to reach 32 oz/A Ounces/Acre
0.75		0.10	+	19.2	12.8
1.0		0.15	+	25.6	6.4
1.25		0.20	+	32.0	0

Insect Issues (Scott Stewart, IPM Specialists)

Zephyr 0.15 E is an effective but expensive miticide that received a “Special Local Needs” (24c) label in Tennessee last year. This Syngenta product has been labeled for several years in states west of the Mississippi River. Normally, a 24c label is good for five years, so I listed Zephyr in UT’s recommended list of products to control spider mites in cotton. As it turns out, there was a special restriction placed by the EPA allowing this 24c label for only one year. It would have been nice if this restriction was on the 24c label, but enough griping. A new 24c label has been applied for this year, and I assume it will be granted. Until then, however, do not use Zephyr for spider mite control. This should not become a major problem unless spider mite populations flare up and supplies of Kelthane 4E or its generic equivalents run dry (as they did last year). Kelthane at 32-36 oz/acre is still my go-to product and is usually the most economical choice.

Variable **tarnished plant bug** populations, from “where are they” to “they are thick”, are being reported in cotton that is squaring. This is the norm for this time of year. In Tennessee, early-season plant bugs are an occasional but potentially serious pest. Some fields, often many fields, will not require treatment. Our scouting efforts should currently be concentrated on plant bugs in squaring cotton. Sweep nets or drop cloths are good scouting methods. I usually lean toward the sweep net until the cotton is closer to bloom. Square retention should be monitored in every field, and plant bug counts and percent square retention are a must on every scouting report.



Percent square retention is calculated by subtracting the number of shed squares from 100 total fruiting sites in a field. Normally, only first position fruiting sites are examined on the top five nodes. Early-season square loss is almost always caused by insect injury. When pre-bloom square retention drops below 80%, the risk of yield loss and maturity delays are increased.

Tarnished plant bugs have a huge number of hosts, and some of their favorites include common weed and roadside plants such as vetch, fleabane, clover, pigweed and horseweed. Be aware of weeds bordering fields or along roadsides. Mowing of these areas will often push plant bugs into adjacent fields, but you can also get movement into fields as these weed hosts begin to mature.

Recommended insecticides for tarnished plant bug during the pre-bloom window.

Insecticide (Trade Names)	Lb Active Ingredient per Acre	Amount Formulation per Acre	Acres Treated per Gal or Lb of Dry Product
Phase I, Pre-Bloom Window*			
acetamiprid (Intruder 70WSP)	0.048	1.1 oz	14.5
flonicamid (Carbine 50WG)	0.081 - 0.088	2.6 - 2.8 oz	6.2 - 5.7
imidacloprid 4.44 (Trimax Pro)	0.047	1.35	94.8
imidacloprid 4.0 (Trimax, Couraze Max)	0.047	1.5 oz	85.3
thiamethoxam (Centric 40WG)	0.05	2 oz	8

*Applications can be banded to reduce costs. Avoiding the use of pyrethroid, organophosphate and carbamate insecticides prior to bloom is suggested as a resistance management tool. Carbine 50WP is for suppression only.

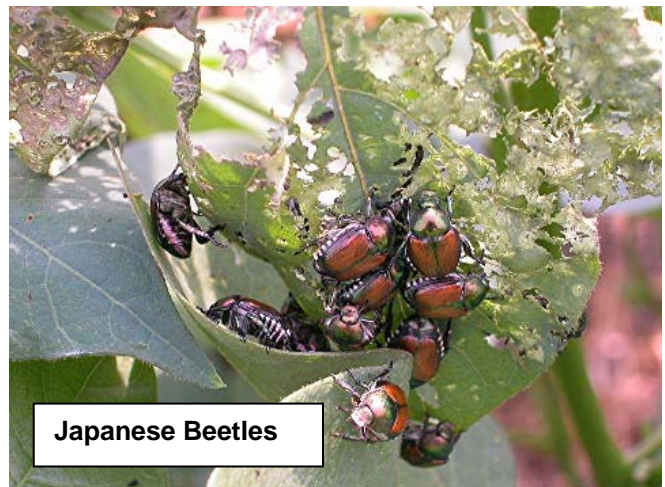


Cotton aphids are not causing any widespread problems, but I've had a call about a flare-up following a late pyrethroid application for cutworms. This is the common scenario. I rarely get excited about treating aphids by themselves. But when populations blow up early, especially in dry conditions, I get more aggressive and you can't expect the aphid fungus anytime soon. Our early-season treatment threshold is when aphids are present on numerous plants and some leaves are curled along the edges (showing signs of stress). All of the plant bug products listed above are also recommended for aphid control at even lower rates: 1.25-1.5 oz of

Centric, 1 oz of Trimax Pro, and Intruder at rates as low as 0.6 oz/acre. Of these, Intruder has been my go-to product for aphids. I have less personal experience with Carbine, but the labeled rates of 1.4 - 2.0 oz/acre should provide excellent control. On the down side, Louisiana and south Arkansas are reporting aphid control problems with neonicotinoid insecticides such as Trimax Pro, Centric and Intruder. It is unclear whether this is insecticide resistance or related to environmental factors.

Reports of **mysterious moth eggs** in early and pre-squaring cotton have been coming in from some southern counties in West Tennessee (often with multiple eggs per plant). I've looked at some specimens. I'm about 90% confident that these are looper eggs, probably cabbage looper at this time of year, but I won't make the final call until they hatch. Looper eggs are similar in size to bollworm or tobacco budworm eggs. However, they tend to be a little flatter and broader at their base when looking from a side view. Mississippi is finding some mystery eggs also, but it appears they are dealing with granulated cutworm. Neither insect would represent a serious threat to our cotton, especially any Bt cotton.

Japanese beetle adults seem to be a little more common this year than in previous years, and I am getting questions. I do not consider Japanese beetles a significant threat to our crops in West Tennessee, although they can be a problem to those with ornamental plants. Japanese beetle adults are large, showy insects that often hang out in groups. They draw a lot of attention because you sometimes flush "coveys" of beetles as you



walk through fields. With the exception of potentially cutting silks in corn, these critters are strictly defoliators. Fortunately, I've never seen anything close to 20-30% defoliation in cotton or soybeans in West Tennessee, and this would be my treatment threshold. Middle and Eastern Tennessee historically have higher populations, and treatment of soybeans in particular is justified in rare cases.

Moth traps (see appended table) show a decrease in activity. One thing to mention is that compared to previous years, tobacco budworm moths are a little more common. This is an observation being made throughout the Midsouth. This may indicate some potential future problems for those with non-Bt cotton, but in Tennessee, it is hard to get too excited because of our high use of Bt cotton.

Area Report for Northwest Tennessee (Gene Miles, Area Crop Specialist, Week of 6/12/06)

Rainfall received this week has only occurred in spots with some areas left out completely. Thrips counts on a few remaining late planted or replanted fields were up to 1.5 per plant. All cotton fields in the area should be past the growth stage susceptible to thrips after this week.

When looking for plant bugs with a drop cloth, you need to sample a minimum of 30 row feet in fields 1-75 acres in size. As you sample larger fields more observations need to be made to obtain an accurate sample. Mostly tarnished plant bugs are being observed this week (adults and nymphs). Plant bug counts range up to 1.2 per 6 row feet and/or 17 per 100 sweeps. Threshold numbers for plant bugs during the first two weeks of squaring are 1 or more per 6 row feet or 8 per 100 sweeps. A few clouded plant bug nymphs have been noted in the area. Immature clouded plant bug nymphs can be distinguished by either black and white or maroon and white stripes around their antennae. Yellow-striped armyworms have been noted this week in cotton fields. This particular armyworm is usually not an economic pest in cotton. Beneficial counts this week range up to 4.0 per 6 row feet.

Corn and Soybean Update (Angela Thompson, Extension Corn and Soybean Specialist)

Crop Update: Like many areas in the southeast, corn and beans would benefit greatly from a good general rain to maintain growth and development. About 70% of our corn crop is getting ready to tassel, tasseling or have some emerged silks. Soybeans range from newly emerged to R3 with 10 or more nodes. Happily, we are about 90% through planting soybeans and are actually ahead of our five year average for planting progress.

Brown spot, caused by *Septoria glycines*, has been showing up on sentinel plot leaves and on a number of plants checked in fields around the state. In several instances, these were soybeans planted after soybeans. This fungus has over-wintered on field residue and under rainy, humid conditions it can infect leaves. With dry weather, disease is usually halted on the plant so that it doesn't spread upwards. We do not recommend a fungicide spray to manage this disease, although application of a foliar fungicide at R3 to manage Frogeye Leaf Spot will also reduce the spread of Brown spot.

Irrigation Workshop Information on Web: With continuing dry weather in many areas, center pivots are continuing to run. The information presented at the UT Irrigation Workshop in Dyersburg can be found on utcrops.com (under the "presentations" link on home page). Suggested irrigation guidelines were discussed for corn, soybeans and cotton, as well as a description of MOIST, the University of Tennessee scheduling program and pertinent economic information.

Foliar Fungicide Use in Corn: Both Melvin Newman and I have answered several calls in the last few weeks about spraying fungicide on corn for disease control. While foliar disease can be more

severe in corn in the mid-south, applying a foliar fungicide is not usually necessary and there is no guaranteed return on investment. Diseases need a susceptible host, right environmental conditions and presence of disease causing organism. Without one of the three, disease doesn't develop. Dr. Newman has had good results (increased yields) at Milan on a grey leaf spot susceptible hybrid under irrigation in a continuous corn production system, but I also spoke with a number of growers who sprayed a fungicide on various hybrids in 2005 and saw no yield differences at all. In many of these situations, growers had selected hybrids with good disease packages, so it was no surprise that they did not have a response, particularly with the dry growing season which created a less favorable disease environment.

If you are considering a fungicide spray on tasseling corn, then you should consider the following points:

1. Is your hybrid susceptible to diseases like Grey Leaf Spot?? Check the tech sheet for your hybrid with seed company literature. If you have gone out of your way to plant hybrids with the best disease resistance money can buy, then you will not get strong yield responses from a fungicide application. Hybrids with moderate resistance may benefit from a fungicide if the field has a history of disease and disease is present at tasseling.
2. Is your corn following corn or sorghum or is it in a rotation?? Corn that is in a rotation with soybean or cotton will have lower levels of some disease organisms.
3. Are conditions for disease very likely (field has history of disease, corn under irrigation, corn following corn, humid, warm weather at tasseling)? If we have a dry year like last year, we will likely have less foliar disease.

If you make the decision to spray:

1. Spray corn as close to tassel emergence (starting to peak through the top of the plant) as possible. Spraying too early (1 to 2 weeks before tasseling) or after silks have emerged has been less effective in UT trials.
2. Get good coverage of crop. Most labels suggest at least 5 gallons of water for an aerial application. Some products (eg. Quadris) suggest adding an adjuvant to improve performance, so read the label.

Asian Soybean Rust News: Pathologists in Florida have confirmed a few new sites with soybean rust on kudzu and a new find reported today on kudzu in southwest Georgia in the community of Colquitt. Activity picked up in Florida after rain fell in areas that had been very dry this spring. No reports of rust-like spores or disease in Texas.

The USDA is offering a new rust information tool called The Good Farming Practices Documentation Tool available at www.sbrusa.net. This site will assist producers in documenting actions taken to manage/prevent soybean rust during the growing season in order to protect themselves from loss damage. **Proper documentation is critical for cause of loss determination for insurance claims if rust occurs on soybeans in the state.**

PCR Testing Results – week ending June 2nd and 9th

Since I was traveling in middle and east TN counties last week, I did not get this information in the previous newsletter, so am catching up with testing results. We have been scouting and submitting leaf samples from sentinel plots in west TN for 3 weeks now. The soybean samples submitted from west Tennessee and soybean and kudzu samples from central and east Tennessee were all negative for soybean rust.

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

We are nearly half way through 2006 with crops just beginning to grow and take off. Where do you stand financially? Have you been monitoring your production expenses compared to your budget and borrowed operating money? I would estimate that producers have invested the majority of their variable expenses (out of pocket cash costs) in their crop at this time. It will vary among crops, but producers should have about 88% of their variable costs in their corn crop, 65% in the soybean crop (full season), and 63% in the cotton crop. Although this is a busy time production wise, do some calculations to determine whether you are on budget. This can prevent problems or at least surprises later on. If we can assist with budgeting, marketing or whole farm planning, please contact your local UT County Extension office or call the MANAGEment Information line at 1-800-345-0561.

Wheat Harvest and Grain Storage (Russ Patrick, IPM Specialist):

This information should have been run earlier, but here are some tips for storing wheat. Clean harvest equipment to help reduce insect pests from entering the bins. Do not store wheat at too high a moisture content unless you plan to dry it as soon as you fill the bin. Too much moisture will lead to insect and mold problems. Also, before you store wheat, clean out the bin if any old grain has been left in it from last season. This will become a source of insects that will invade the newly stored wheat. The use of Tempo in cleaned out bins is one method to slow down any potential infestations. Treat the walls and bin floors with Tempo. Do not put Tempo on the grain. Also, there is a grain protectant called Storcide II that is new to us. Although I have made several requests, I have not been able to acquire any product for demonstrations.



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 7, ending 6-14-06)

Trap location	Tobacco Budworm	Corn Earworm (Bollworm)	Beet Armyworm	Southwest. Corn Borer
Hardeman (Bolivar)	1	1	0	---
Fayette (Whiteville)	0	0	0	---
Fayette (Somerville)	2	3	---	0
Shelby (Millington)	11	5	2	---
Tipton (Covington)	0	0	0	---
Tipton (West)	6	5	---	7
Haywood (West)	1	1	0	---
Haywood (Brownsville)	0	3	---	---
Madison (Exp. Stn.)	0	0	0	8
Madison (North)	5	0	---	---
Crockett (Alamo)	3	1	0	---
Crockett (Maury City)	3	0	---	---
Dyer (Dyersburg)	0	3	0	---
Dyer (Newbern)	1	7	---	1
Lake (Ridgley)	1	4	0	---
Gibson (Kenton)	1	10	---	---
Gibson (Milan Exp Stn.)	0	0	0	0
Carroll (West)	0	2	0	---
Lauderdale (Goldust)	1	5	0	---

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

The Agricultural Extension Service offers its programs to all eligible persons regardless of race, color, national origin, sex religion, disability or veteran status and is an Equal Opportunity Employer. COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS. The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914. Agricultural Extension Service, Charles L. Norman, 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 Cotton IPM Specialist