

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 7

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Cotton Planting and Management (Dr. Chris Main, Extension Cotton and Small Grains

Specialist). The Tennessee agricultural Statistics Service reports that 7% of the cotton crop has been planted compared to 18% last year and 15% for the five year average. Needless to say we are a bit behind due to cool temperatures, wet fields, and more corn being planted. Traditionally, the optimum cotton planting window for Tennessee is from April 20th to May 10th. The availability of early maturing varieties, boll weevil eradication, Bt worm control traits, judicious use of plant growth regulators, and ability to achieve excellent defoliation allows us to extend the planting window until May 25th. Most of my colleagues agree that planting after May 25th can make the crop susceptible to an early frost in the fall. With the rainfall that is occurring today (Thursday) and more being predicted for the weekend, by the time we get back to the fields we should be planting mainly early maturing varieties. If you are planting a full season variety, get it in the ground first. This would include varieties such as ST 5599 BR, DP 164 B2RF, DP 454 BG/RR, PHY 485 WRF, and ST 5327 B2RF. Next plant varieties of medium maturity such as, ST 4554 B2RF, DP 445 BG/RR, DP 143 B2RF, DP 141 B2RF, ST 4498 B2RF, and most Dyna-Gro, Croplan Genetics, Americot varieties. Finish up with DP 444 BG/RR, PHY 375 WRF, DP 121 RF, and ST 4427 B2RF.

Cotton planted from April 16 – April 25 has been slow to emerge. It has been taking anywhere from 8-12 days to achieve a ‘good’ stand. This cotton has also been subjected to low temperatures in the upper 30’s to low 40’s. Chilling injury is very apparent even when driving past in the truck. The seedlings are small, very dark green, dark red to almost black stems, and ragged cotyledons. Thrips have not been found (since I use Temik in-furrow) but the ragged cotyledons look a lot like thrips damage. Some warm weather, especially warmer night temperatures, will help the early planted cotton recover and progress normally.

Weed Control (Larry Steckel, Weed Specialist)

Glyphosate Resistant Horseweed Management

The call of the week has been from folks worried about how GR horseweed appears to be hanging on after burndowns applied 10 to 14 days ago. The cold snap shortly after those burndown applications slowed down how quickly the horseweed is responding to the treatment. I have walked a number of these fields, and it appears to me that most of these horseweed will go ahead and die. I have found a good rule of thumb is to kick



horseweeds that are still green. If they are brittle and snap off they will die but if they flex back there is a good chance they will recover. Upon closer inspection of the ones that snap off you will often find that the stem is starting to rot and is becoming hollow. The horseweed that still show a lot of flexibility will typically have a healthy white vascular system when broken open. With the good temperatures over the next week Ignite at 29 oz/A should provide good control of these escaped horseweeds. Gramoxone Inteon at 48 ozs/A + either Caparol at 32 ozs/A or Cotoran at 32 oz/A or Direx at 16 oz/A should also control these horseweeds before cotton planting. In soybeans, Gramoxone Inteon at 48 oz/A + Sencor at 4 oz/A is a good option. The good news is that GR horseweed control overall this spring has been much improved over what we experienced in 2006 and 2007.

Ryegrass Control in Corn

Driving through West Tennessee it is very evident that there is a widespread infestation of ryegrass in numerous corn fields. If the corn is Roundup Ready and you plan to treat with Roundup, less than optimum ryegrass control may be the result. Ryegrass is most easily controlled with glyphosate when it is very small or when it is headed out. Glyphosate will typically provide inconsistent control of ryegrass between these two stages. In corn fields where the ryegrass pressure is not heavy, this will not be a problem but in fields with heavy pressure yield loss could result. Accent or the premix Stout (Accent + Harmony) by themselves or mixed in with glyphosate will typically provide the best control of ryegrass in corn. With the rain and heat this week the corn will grow very rapidly and will quickly pass the 6th collar stage of development. Accent and Stout can not be sprayed beyond 6 collar corn or they could cause yield loss.



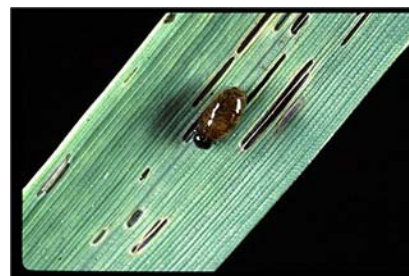
The wet weather delays have some folks thinking of switching from corn to grain sorghum. The question from these growers has been about using 2,4-D or dicamba as a burndown before planting the grain sorghum. 2,4-D is not labeled preplant in grain sorghum and dicamba has a 15 day plant back restriction. My experience with both these herbicides in grain sorghum is that they can wash down in the slot with the seed and hinder germination. The best option is to wait until the grain sorghum has emerged and then apply either 2,4-D or dicamba.

Insect Management (Scott Stewart, IPM Specialist).

Armyworms. There have been no reports of significant true armyworm infestations in wheat. UT still recommends treatment when armyworms number 4 or more larvae per square foot. This threshold is plenty aggressive. Indeed, relatively recent data from Arkansas indicated little or no yield loss occurred when armyworm populations were several times greater than our threshold (as long as the infestation began in the late milking stage or later). If treatment is needed, there are several choices including Tracer (1.5 - 2 oz/a), Baythroid XL (1.8 - 2.4 oz/a), Prolex (1.02 - 1.5 oz/a), Karate (1.3 - 1.92 oz/a) and Mustang Max (3.2 - 3.5 oz/a). You will get better control with higher rates, so don't skimp especially if populations are very high. *Picture courtesy of Kansas State University.*



Cereal leaf beetles are common in some wheat fields. The adult is slightly less than ¼-inch long with a shiny blue-black body and orange-red colored head and legs. Frankly, the defoliation caused by the adults and the goo-covered larvae (pictured right) does not really strike fear into my heart. However, if populations exceed the threshold of 1 adult or larva per stem, treatment should be made. A pyrethroid is generally the insecticide of choice.



Cutworms. There have been only a few calls about cutworms in our field crops, but several folks have recently mentioned how bad they have been in their gardens. The lack of problems being reported in our crops probably indicates that farmers are making a pyrethroid application with their burndowns, or preferably, as close to planting as possible. This is not a bad idea. This is the kind of weather that cutworms tend to thrive in, and it also prevents timely weed control. UT recommended insecticides and rates can be found online at http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/InsectBook.htm. UT does not recommend the sometimes very low-end insecticide rates labeled by some companies for cutworm control.

Thrips in Cotton. There is not a lot of cotton planted yet, but hopefully everyone intends to use a seed treatment or in-furrow application for control of thrips.

Recommended Seed Treatments for Thrips

- Cruiser or Avicta CP -- both contain the same rate of thiamethoxam for thrips control -- Avicta CP also contains fungicidal and nematicidal components.
- Gaucho Grande or Aeris -- both contain the same rate of imidacloprid for thrips control -- Aeris also includes a nematicidal seed treatment and an optional fungicide component is also available.
- Orthene or Acephate -- shorter residual control and needs to be used at rates of 20-25 oz/cwt.

Recommended In-furrow Treatments for Thrips

- Temik -- the old standard --- granular product that also has nematicidal activity -- use rate of 3.5 to 5 lbs per acre for thrips control -- use the higher rate if also targeting nematodes.
- Orthene or acephate -- liquid in-furrow spray at 0.9-1.0 lbs active ingredient per acre.

In some cases, a supplemental foliar spray may be needed even if an at-planting treatment was used. You are most likely to benefit from a foliar application if using acephate at-planting (and least likely to benefit if using Temik). But in the right circumstances, all at-planting treatments may need a little help. The most commonly recommended foliar thrips insecticides include Orthene or acephate (3-4 oz/a), Bidrin (2-3 oz/a), or Dimethoate (4-8 oz/a). I suggest avoiding pyrethroids because they can flare aphid and spider mite populations.

When are supplemental foliar applications justified? Cotton is most susceptible to thrips injury early, before the 3rd true leaf stage. So if needed, the best time for application is during the 1st- 2nd true leaf stage. A rule of thumb -- if cotton has been planted for 14 or more days and the 2nd true leaf is not yet visible, consider making an application in the next 7 days. In other words, make the application early when environmental conditions have resulted in slow emergence and growth. I especially recommend this if a seed treatment or acephate was used at planting because these treatments provide somewhat less residual control than Temik. Many years, this rule of thumb will apply to a large chunk of our acreage. More than one foliar thrips application is usually not needed even though the cotton may get scruffy looking. Repeated applications seldom increase yields and are more likely to create other pest

problems (again potentially flaring aphid and mites). Too many people make unnecessary thrips applications at the 3rd, 4th or 5th true leaf stage.

New Insecticide Labels. Below is a list of several new products that have been labeled in the last year, some in the last few weeks. I can't cover everything in the short synopsis below, so please read the labels before using these products. Some testing has been done with most of these products. If you want to take a little extra time, some data summaries are posted online at <http://www.utextension.utk.edu/fieldCrops/MultiState/MultiState.htm>.

Bidrin XP (AMVAC) -- Cotton -- A premix of dicotophos (Bidrin) and bifenthrin (Discipline) used at a rate of 5 - 8 oz/acre. This should be an excellent mid to late season choice for a complex of pests in cotton (i.e., stink bugs, plant bugs and bollworms in particular). The bifenthrin component may also help to suppress spider mite populations.

Endigo ZC (Syngenta) -- Cotton -- A premix of thiamethoxam (Centric) and lambda-cyhalothrin (Karate) used at a rate of 4 - 5.5 oz/acre. Endigo ZC would also be good for controlling a mid and late season complex of pests (i.e., stink bugs, plant bugs and bollworms). It has been very good on plant bugs in my testing program. Syngenta is also pursuing a label in soybean.

Leverage (Bayer CropScience) -- Cotton and soybean -- Not really new except in soybeans but the company is making a new push and at higher use rates -- a premix of imidacloprid (Trimax Pro) and cyfluthrin (Baythroid) used at a rate of 3.5 - 5 oz/acre in cotton and 3.8 oz/acre in soybean. This product has a similar fit as Bidrin XP and Endigo ZC in mid to late season cotton. Use 3.8⁺ oz/acre to get more consistent control of plant bugs. I have not looked at Leverage in soybeans, but it should have some play with activity on stink bugs, green cloverworms, bean leaf beetles and three cornered alfalfa hoppers.

Cobalt (Dow AgroSciences) -- Cotton, soybean, corn and sorghum -- A premix of chlorpyrifos (Lorsban) and gamma-cyhalothrin (Prolex). The rate varies considerably based on the crop and target pest. This product will probably get the most use in cotton and soybean. From my testing, the rate in cotton needs to be 24 oz/acre or higher for consistent plant bug control, and this product also has activity on stink bugs and bollworms. If the price is right, it should get some play in soybeans for a complex of pests similar to Leverage.

From a resistance management point of view, it concerns me how heavily we are relying on neonicotinoid insecticides like thiamethoxam (Cruiser, Centric, Endigo) and imidacloprid (Gaucho, Aeris, Trimax Pro, Leverage) in cotton. We are putting a lot of potential selection pressure on aphid and plant bug populations in particular. Also in cotton, we are trying to preserve pyrethroid insecticides until after first bloom, so I would normally not recommend Bidrin XP, Endigo ZC, Leverage or Cobalt prior to bloom because they all have a pyrethroid component.

Hero (FMC) -- Cotton, soybean and corn -- A 3 to 1 premix of bifenthrin (Capture or Brigade) and zeta-cypermethrin (Mustang Max). The rate varies considerably based on the crop and target pests (generally from 5.2 - 8 oz/acre). Both components are synthetic pyrethroids, and it will act accordingly. In cotton, the bifenthrin component should also provide spider mite control in some circumstances. I think this product will be a good choice in soybean and hotter than the other pyrethroid insecticides on brown stink bugs. Like Cobalt and Leverage, it will not be too spiffy on soybean loopers.

Zephyr 0.15 EC (Syngenta) -- Cotton -- A good choice for control specifically for spider mites and is generally used at 4-6 oz/acre to keep the cost down. A full Section 3 label has been approved. Zoro (Cheminova) and Temprano (Chemtura) have an identical formulation (0.15 lb abamectin per gallon).

Intrepid 2F (Dow AgroSciences) -- Pastures and forage crops -- A use rate of 4-6 oz/acre should provide excellent control of armyworms. It will not control non-caterpillar pests.

Corn and Sorghum Updates (Angela Thompson, Corn and Soybean Extension Specialist)

Even with the recent rain delays, growers have made really good progress in corn planting. Most hill ground and upland fields are planted with some bottom ground and wet fields still waiting for the planter. Corn is in pretty good shape- some leaf burn and yellowing due to the near freezes we had in the last 2 weeks. We have currently planted over 80% of intended acres, and it seems that the remaining 20% or so are going to be the toughest to finish. I have had numerous calls about how late to continue planting corn and the feasibility of switching to grain sorghum as an alternative to corn, due to limited soybean seed availability.

How Late Can we Plant Corn?? Like it or not, we are going to have more May planted corn than we usually have. Corn planted in May and especially late in May (I consider anything planted after May 15th as truly 'late corn') is more likely to experience some yield decrease due to the likelihood of greater heat during pollination, corn borer problems and disease. Timeliness of rain is also more critical for yield. The later you plant into May the more likely some yield decreases will happen. Depending on the source used, yield decrease is estimated at 1 bushel/day past May 1 in west TN. Kentucky uses an estimate of 1% loss per day for planting dates past May 10th in western KY. I have no problem telling folks to continue planting corn in bottom fields or fields that are more capable of providing moisture to the crop. Consider switching to soybeans if seed are available or grain sorghum if fields have droughty soils. Some things to consider for late planted corn:

- Don't plant an early maturity (108-112 day) hybrid late. Medium to Late maturity hybrids generally have better tolerance to heat. Check seed company information for the drought tolerance of any hybrid in question.
- Plant a Bt hybrid (be mindful of the 50% Bt refuge requirement in cotton counties); May planted corn has the potential to tassel closer to our second generation Southwestern corn borer egg lay timing which can be more damaging.
- Adjust nitrogen rate and seeding rate to prepare for a slightly lower yield potential (particularly when planting after mid May). On dryland fields consider reducing seeding rates by 10%.
- Depending on environmental conditions in late June and early July, consider applying a foliar fungicide after tassel emergence-- especially if corn is following corn.

Grain Sorghum as an Alternative to Corn I still think corn is more profitable when planted in good soils through mid May- even accounting for some yield decrease. Grain sorghum seems attractive as a potential 'corn replacement' when we move into a late May planting window and on non-irrigated fields that tend to be drought prone. Sorghum is a good option where it is no longer possible to plant corn but where a corn burndown program containing atrazine has already been applied (see Larry's comments about 2,4-D and dicamba). Grain sorghum can NOT be planted into fields treated preemergence with Resolve herbicide. Late planted sorghum has some of the same issues as corn- insect problems and some yield decrease due to drier weather. Grain sorghum yields best when planted in May and there is a 1 bushel per day reduction in yield when planting is delayed from May 20th to June 15th. Yield decreases by about 1.5 bushels per day that planting occurs after June 15th.

- There is some sorghum seed available now, but supply is pretty tight due to strong demand for sorghum in other states. Growers should pursue seed options now to make sure availability isn't a problem in your area.
- June planted sorghum should be in narrow (<30 inch) rows to help boost yield with late planted sorghum.
- Sorghum planted after mid May is more likely to have worm and other insect problems and should be scouted routinely for insect management.
- If you haven't grown sorghum lately, check with your local grain elevator. Some elevators are no longer taking sorghum, and the extra transport distance may not be practical for your operation.

Grain sorghum should not be planted in areas with heavy Johnsongrass pressure due to lack of herbicide options for its control. There are no Roundup Ready sorghum varieties so watch spray drift from nearby crops.

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

The House & Senate conferees completed work on the farm bill and released information at a press conference on Thursday, May 8, 2008. A recording of the press conference can be found at <http://agriculture.house.gov/hearings/audio.html>. The full details of the final bill await scoring from the Congressional Budget Office. Most likely, both chambers of Congress will pass the conference report and send it to President Bush by May 16. However, it is questionable whether the President will sign the bill. We will know by next week what the status will be and the timeline on implementation. Look for additional information here, and in the farm press and online.

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

