

## IPM NEWSLETTER

### Update for Field Crops and Their Pests

No. 10

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Bookmarks: [Late planted cotton](#) [Insect control](#) [Wheat disease update](#) [Farm management](#) [Moth traps](#)

#### Managing Late Planted Cotton (Chris Main, Extension Cotton and Small Grains Specialist)

I'm planting cotton later than I can remember in recent history, what should I be preparing for during the season? Long-term historical data shows that in 50 percent of the last 30 years, a killing freeze could occur during the second and third weeks of October (Table 1.). Fortunately, early maturing varieties, *Bt* cotton for worm control and boll weevil eradication allow for a potentially longer season. A late planted cotton crop still has the chance to be productive but making a good crop requires intensive management and help from Mother Nature. Managing late planted cotton for earliness is essential to insure a productive harvest. Earliness is generally a product of variety selection, planting date, sound fertility practices, favorable early season temperatures, first fruiting node, fruit retention, plant growth regulation and environmental factors leading up to maturity. Mother Nature control part of a late planted crops fate, but there are several things we can still do to achieve earliness. The following management guidelines will help to achieve earliness in a late planted crop.

**Fertility.** Match soil type with the correct nitrogen rate. Bottom soils and productive hills that tend to produce large, rank cotton should be fertilized accordingly. Excessive nitrogen (N) promotes rank growth and delays maturity. The University of Tennessee currently recommends 30-60 lb. total N for bottom soils and 60-80 lb. total N for upland soils. Avoid late applications of nitrogen and match rates to yield potential for a late crop. On most soils, yields are not increased by applying more than 80 lb. N per acre, and maturity can be delayed when excess N is applied.

**Herbicide Applications.** Always follow the glyphosate label for over-the-top applications of glyphosate on Roundup ready cotton. This is particularly important since there Roundup Ready Flex cotton is planted on many acres this year. Be sure to keep records of where non-Flex cotton is planted to avoid a application mistake that could cause delayed maturity. Late planted Flex cotton could potentially help promote earliness since the majority of weed management can be accomplished with glyphosate thus preventing any delays associated with injury from other herbicides.

**Insect Control.** It is highly recommended that *Bt* varieties (Bollgard, Bollgard II, and Widestrike) be planted when cotton planting is delayed until late May. Late planted cotton is more attractive to lepidopterous pests, and *Bt* cotton will helps manage these pests. Also, early fruit retention is the foundation for eliminating the potential for rank growth and preparing the crop for an early harvest. Maintaining early season fruit retention above 80 percent will suppress excessive vegetative growth and increase the potential for an early crop.

**Plant Growth Regulation (mepiquat-type PGRs).** Late planted cotton often grows more vigorously than an early-planted crop, so a proactive rather than reactive approach to plant growth regulator applications (Pix, Pix Plus, Pentia, Mepex, mepichlor, Stance etc.) is needed. It is much easier to

control cotton growth with lower application rates when plants are smaller than with higher rates when plants have become rank. Shutting down a vigorous plant is difficult at best and usually expensive. It is important to identify which fields or portions of fields can become rank if favorable conditions exist. Earliness and growth control are enhanced by early application of mepiquat-type PGRs. Lower rate, multiple PGR applications beginning after matchhead square often gives good results. However, applications made near bloom are usually preferred because they reduce the risk of prematurely stopping vegetative growth in the event of drought conditions. It is important to remember that low rates are not effective on larger cotton that has become rank.

**Defoliation and Boll Opening.** Defoliation should be timed with harvest of the mature bolls in mind. Don't chase phantom bolls, especially on a late planted crop. Bolls set late in the year, in the upper portion of the canopy are less likely to contribute to overall yield. A good rule to follow is that unless higher than normal temperatures are predicted most cotton in Tennessee should have a defoliation application by October 1<sup>st</sup>. It takes several days without frost conditions after a defoliation application to open bolls and remove leaves. Although a once over harvest is desirable for a number of reasons, growers may want to consider a second picking on late planted cotton to decrease weathering of the most profitable bolls. Addition of an ethephon-based boll opener will increase the percent of the crop picked at first harvest. Keep in mind that ethephon does not promote crop maturity and no amount of ethephon will open small, immature bolls. Ethephon products need at least 50 DD60's to work and higher rates will be needed under cool temperatures.

**Table 1.** Date and Probability of a fall freeze by location.

Location	Probability		
	50%	75%	90%
Bolivar	11-Oct	31-Oct	18-Nov
Brownsville	8-Oct	5-Nov	30-Nov
Covington	26-Oct	12-Nov	26-Nov
Jackson	24-Oct	31-Oct	7-Nov
Martin	15-Oct	7-Nov	28-Nov
Memphis	6-Nov	13-Nov	19-Nov
Milan	17-Oct	7-Nov	26-Nov
Murfreesboro	13-Oct	4-Nov	25-Nov
Newbern	13-Oct	6-Nov	28-Nov
Samburg	15-Oct	6-Nov	25-Nov
Savannah	20-Oct	10-Nov	29-Nov

**DD60 Accumulation (TASS and NWS data)**

Location	4/20-5/29	4/27-5/29	5/4-5/29	5/11- 5/29	5/18-5/29
Dyersburg	273	228	205	168	149
Fayetteville	310	253	223	169	151
Jackson	271	224	202	159	138
Memphis	372	303	276	218	182

**Insect Management (Scott Stewart, IPM Specialist).** It has been a pretty quiet week. The fact that many acres were just planted last week may have something to do with this. I have had a few calls or comments about cutworm infestations, slugs in cotton or soybean, and true armyworm in wheat. Despite the wet weather, I've already had the first report of spider mite infestations on 1-2 leaf cotton.

**Slugs** do not appear to be a major problem thus far, but they are something to be watchful for when seedling soybean or cotton plants are emerging. Slugs or slug damage is most commonly a problem in cotton or soybean. Serious infestations are almost exclusively found in reduced tillage fields following a previous corn or sorghum crop, which leaves a lot of residue in the field. Slugs usually cause only cosmetic injury under good growing condition, leaving rough leaf margins of shot-holed leaves. However, they can reduce plant stand when plants are growing slowly. They sometimes cut plants similar to cutworms. I've seen this cutting particularly if fields were planted wet and the seed furrow did not completely close. This leaves a slit that slugs use as a highway up and down the seed furrow (pictured bottom right).



**Slug and Slug Injury to Soybeans and Cotton**

Controlling a slug infestation is difficult. The only effective treatment is a metaldehyde bait. This pelleted bait is commercially available has Deadline M-Ps (AMVAC) and must be broadcast at a rate of 10-20 pounds per acre. It is relatively expensive treatment and thus is usually used at the 10 pound rate. Deadline M-Ps is seldom carried in stock so, if you need to get your hands on some, contact your local distributor to get it ordered quickly. In row-planted crops, it will also help to run row cleaners and keep trash off the row. The only threshold I can give you is *treat when slug infestations threaten to reduced stands below acceptable levels*. Most stand loss caused by slugs occurs during the first week of emergence. You really need the bait on hand if a problem develops. To some extent you can predict a slug problem in advance by scouting for slugs prior to planting. Slugs will be found in the shade and under plants of plant debris during the day. The best control is warm sunny days and rapidly emerging plants.

**Spider Mites in Seedling Cotton.** This has become a chronic problem in parts of the state including parts of Carroll, Gibson, Dyer and Lake Counties, and I've already had one report this year. UT recommends treatment when 30-50 percent of plants are affected and mites are present. Mite infestations in seedling cotton can vary in severity from ... speckling leaves and causing little long term damage to ... they are killing plants. Unfortunately, it is not always clear which situation you are in at the time. Mite numbers can increase quickly and my experience indicates that controlling infestations is more effective if done before the population is really rolling. Recommended miticides can be found at [http://www.utextension.utk.edu/fieldCrops/cotton/cotton\\_insects/pubs/PB1768-Cotton.pdf](http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/pubs/PB1768-Cotton.pdf). Past research indicates that Dicofol 4F at 32 oz/acre has been consistent and the most economical miticide in seedling cotton (remember, the Kelthane trade name is no longer marketed). There are also

a number of other products that also work pretty well including abamectin 0.15 EC at 4-6 oz/acre (e.g., Zephyr, Abba, Zoro), Oberon 4F at 4-6 oz/acre, Acramite 4F (12-16 oz/acre) and Zeal 72 WSP at 0.75-1.0 oz/acre. None of these products have activity on thrips, plant bugs or other early season pests.

What has not worked consistently on spider mites during the early season are treatments with dimethoate or bifenthrin (e.g., Brigade, Discipline, Fanfare). However, in these chronic mite spots, avoiding acephate/Orthene and using Dimethoate or Bidrin for thrips control may reduce the chance of flaring spider mites. Also avoid unnecessary foliar applications for thrips control because repeated applications are most likely to flare spider mite infestations.

**Moth Traps.** This is the first week where we've seen any indication that corn earworm, tobacco budworm, or southwestern corn borer moths are out and flying about. Moth numbers remain low and are of little concern to any crops at this early date.

**Wheat Disease Update (Melvin Newman, Extension Plant Pathologist).** Three diseases are really starting to show up in the fields now. They are: Take-All, Glume Blotch and Head Scab. All three diseases are affected by the recent rainy weather and may become severe in many fields. You may refer to [utcrops.com](http://utcrops.com) for a complete description of these diseases.

**Take-All** (caused by the soil-borne fungus *Gaeumannomyces graminis var tritici*) is common in many soils but it is usually worst in soils with a pH of 6.5 – 7.0. Symptoms may include patches of dead plants with white heads and very little seed ranging from a few tillers to spots as big as 10 to 15 feet in diameter in irregular patterns across the field. Roots are rotted and plants are very easily pulled out of the soil. Many times, but not always, a black (sooty appearance) rot can be seen at the crown near are at the soil line when the old dry leaf sheath is scrapped away. This disease has been noted in several counties in West Tennessee this year ranging from only slight to 50% loss to the yield. Usually, Middle and East Tennessee have a greater incidence of take-all than West Tennessee.

Some research indicates that rotation with other crops not in the “grass family” might help some, but wet weather conditions such as we have been having, plays the biggest role. Corn, oats and dicotyledonous crops are good rotational crops where grassy weeds are not a problem. Deep tillage can be beneficial by decomposing the infested residue. Take-all is not spread by infected seed or wind-borne spores. Ammoniacal and slow-release forms of nitrogen may suppress take-all, in contrast to nitrates, which favor the disease. Also important, is an adequate supply of other essential nutrients to promote root growth. Wheat should not be nutritionally stressed for lack of nitrogen, phosphorus, potassium, or trace nutrients at any time during the growing season. Foliar fungicides and fungicide seed treatments are not effective in controlling this disease.

**Glume Blotch** (caused by the fungus *Stagonospora “Septoria” nodorum*) is now showing up on the heads of wheat. The brown discoloration of the glume (chaff) is a good indication of the infection of this fungus. The disease begins as a “lens shaped” lesion on the lower leaves and advances as new leaves emerge. Yield loss is greatest under humid, wet conditions. Properly applied foliar fungicides can significantly reduce this damage, but may not completely control all the disease. Crop rotation, foliar fungicides and seed treatments are recommended to help control this disease.

**Scab or Head Blight** (caused by the fungus *Fusarium* spp.) is now showing up as white heads that may be white only on parts of the head, but in severe cases the whole head is killed by the fungus. Frequently, a pink or orange spore mass may be seen on or at the base of the diseased spikelet. Prolonged rainy spells during and after the blooming stage will enhance conditions for infection.

Significant yield loss and reduced test weight may occur from floret sterility and poor seed filling. Severely infected grain may contain mycotoxins such as zearalenone and vomitoxin (deoxynivalenol or DON) which can cause problems when fed to animals. In Tennessee, control with foliar fungicides gave no control of this disease. Fungicide seed treatments may help reduce the inoculum carried on the seed but it is not enough to prevent the disease from occurring. *Fusarium* is also an important pathogen in corn, therefore rotation with corn may increase scab under favorable disease conditions.

### **Farm Management (Chuck Danehower, Area Specialist - Farm Management).**

The consensus seems to be that 14 of the 15 titles in the Farm Bill are now law after the Senate overrode the President's veto late last week. The missing title will become law after the House and Senate pass the Farm Bill again, send it to the President for his veto, and then have the House and Senate override the veto. Sounds like a lot to happen, but the Administration has signaled that they are treating the overridden bill as law. If that is the case, then the next step will be USDA implementing the new farm bill.

The first step will most likely be developing regulations for the Direct and Counter-cyclical Program (DCP) so that advance direct payments can be issued to producers. The bill calls on USDA for the 2008 crop year to make advance direct payments *as soon as practicable*. Once that regulation is published, then USDA can begin to issue those payments to producers. It normally takes six to eight months from the time a farm bill is signed into law to when payments can be issued to farmers. So, I would not expect the advance Direct Payments anytime soon. Although, there does not appear to be major changes for 2008, the details could slow the issuing of the direct payments.

I detailed some of the major changes in last week's newsletter. Some other changes in the new farm bill include target price and loan rate adjustments. Current prices with the exception of cotton are greater than the target price. I would not rule out that sometime during the life of this bill prices will dip under the target price and loan rates will become important. Hopefully, that will not be the case. Either way, here are the adjustments as pertaining to row crops.

#### **Target price adjustments**

2008: Target prices unchanged, except cotton is reduced from 72.4 cents/lb. to 71.25 cents/lb.

2009: Unchanged from 2008.

2010-12: Increase for wheat from \$3.94 bu. to \$4.17 bu., grain sorghum from \$2.57 bu. to 2.63 bu., and soybeans from \$5.80 bu. to \$6.00 bu. Corn and cotton remain at 2009 levels.

#### **Loan rate adjustments**

2008: 2007 rates apply

2009: same

2010-12: Increase for wheat from \$2.75 bu. to \$2.94 bu.

**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 4, Ending 5-28-08)**

Trap Location	Tobacco Budworm	Corn Earworm (Bollworm)	Beet Armyworm	Southwestern Corn Borer
Hardeman (Bolivar)	0	2	0	---
Fayette (Whiteville)	0	0	---	15
Fayette (Somerville)	0 - top off	0	0	---
Shelby (Millington)	0	8	0	---
Tipton (Covington)	9	5	---	0
Tipton (North)	3	0	0	---
Haywood (West)	0	0	0	---
Haywood (Brownsville)	Missing	0	Missing	---
Madison (North)	2	0	0	---
Madison (Exp. Stn.)	2	9	---	0
Crockett (Alamo)	0	0	0	---
Crockett (Maury City)	0	0	---	---
Dyer (Bogota)	0	2	0	---
Dyer (Newbern)	0	0	---	0
Lake (Ridgley)	0	2	0	---
Gibson (Kenton)	0	4	0	---
Gibson (Milan Exp Stn.)	0	0	0	0
Carroll (West)	2	3	0	---
Lauderdale (Goldust)	0 - top off	0 - top off	0 - top off	---

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

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