

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 5

April 16, 2008

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Wheat Outlook and Situation (Dr. Chris Main, Extension Cotton and Small Grains Specialist)

Most wheat across west Tennessee is in the boot to early seed head emergence. With the abundance of rainfall over the last few weeks consider applying your fungicide as soon as head emergence is noted across the field. We are not seeing many diseases yet, but expect disease to appear with the forecasted warming trend.

Several questions were raised yesterday about the frost on Tuesday morning. In most locations the frost was light and only lasted about an hour. Since most wheat is still in boot, there should not be any widespread damage. Temperatures were generally above 30 degrees for most locations. Wheat still in the boot stage can tolerate temperature down to 28 degrees. I have some barley planted on the station that has completely headed out. There was no obvious damage Tuesday afternoon, but I will continue to monitor the barley for signs of damage over the next few days.

Cotton Planting Considerations (Dr. Chris Main, Extension Cotton and Small Grains Specialist)

As we near the beginning of cotton planting season it is only prudent to review some basics of cotton production to help keep us out of trouble.

Seed Quality: Plant only high quality seed with cool germination percentages close near 60%. In soils that are typically cold and wet (early no-till planting), choose high quality, large seeded varieties. Smaller seeded varieties or average quality seed lots should be planted when soil temperatures are above 70F.

Seed Treatment versus In-furrow Products: The best advice is to insure your substantial investment in seed with some type of fungicide and insecticide. In-furrow fungicides are strongly recommended for early planting or for fields with a history of seedling disease. Products such as Avicta Complete Pack and Aeris should only be purchased for fields with a **known history** of reniform nematode populations based on actual counts from soil samples.

Seeding Rates: Calibrate planters for each variety or changes in seed size. Vacuum air planters are extremely accurate only when calibrated correctly. Don't cut seeding rates too close. Planting 3 seeds per foot rarely results in 3 plants per foot. Cutting seeding rates can save money, but remember to aim for a final stand of 3 plants per foot. This population is consistently the highest yielding and easiest to manage. Planting enough seed will save time and costly replanting decisions.

Hill dropping seed can help to ensure stands in soils prone to crusting. Two or three seeds per hill have more pushing power than one seed alone. Dropping 2-4 seeds per hill are typical, but 2-3 is optimum.

A spacing of 8-12 inch per hill is optimum, but attempts to reduce seed costs by increasing the distance between hills can stretch to 14-16 inches. Remember as spacing between hills increases, yields may decrease and maturity can be delayed.

Seeding Depth: Periodically check seeding depth. Many replants could be avoided by planting at the proper depth. Cotton should be planted into moisture but should not exceed 1.5” deep, especially early in the season when frequent rains occur or when planting small seeded varieties.

Risk Management: It is not too early to plan for in-season and harvest time constraints. The best advice is to match planting dates with variety maturity. I realize that even the most careful planning will fall victim to weather delays, breakdowns. Having several maturities can actually lead to more efficiency as well as spreading risks. Remember to plant full season varieties like ST 5599 BR and DP 555 BG/RR by May 12, you may suffer at the expense of an early frost. Instead of planting 500-750 acres of one variety in 5 days, why not plant the same acreage with two varieties of differing maturity. By doing so, field operations and picking may be spread out enough to allow you to handle the little opportunities that happen along the way. This is much easier said than done, but a little forethought can go a long way during a tough season.

Soil Temperature Effects on Cotton Germination: Soil temperature plays a key role in establishing a uniform stand when planting cotton, especially in April. Planting forecasts routinely consider the 5-day forecast for temperature, expected accumulation of DD60s, rainfall, and potentially drying winds. The missing ingredient is usually soil temperature because it can vary from field to field based on tillage, soil texture, color, surface residue, bed preparation, and moisture. The following general guidelines should be observed when planting cotton:

1. Finer textured soils warm slower than coarse textured soils due to greater water holding capacity. Water has a high heat capacity and can act as a thermal buffer today time heating.
2. Well-drained soils typically warm faster than poorly drained soils.
3. Raised beds warm faster than flat ground because of greater internal drainage, more surface area exposed to the sun and more aeration. The higher the bed, the faster it will warm.
4. Dark colored soils warm faster than lighter colored soils because they retain heat from sunlight better.
5. Surface residue (i.e. no-tillage practices) will tend to retain soil moisture and shade the soil surface resulting in slower warming.

Soil temperatures should be at least 68°F at the two inch depth with favorable conditions (accumulation of 25-50 DD60s) forecasted for the next five days. Conditions 2-5 days after planting are critical for stand establishment. Soil temperature will fluctuate daily with sunlight availability, but 65F should be considered a minimum. Soil temperatures below 65F can lead to chilling injury and greater vulnerability to seedling disease pathogens. The key is to measure the soil temperature in the field in which you are considering planting. If you decide to plant early into less than optimal conditions, be sure to use either a seed treatment (fungicide + insecticide) or an in-furrow fungicide and insecticide.

Cotton Planting Forecast: In an effort to aid in making planting decisions, a cotton planting forecast will be offered every 5 days in 2008 (April 15-May 30). The planting forecast will consider the predicted temperatures, DD60 accumulation, rainfall, and potential for drying winds on the day in which the forecast is issued. The forecasts will focus on data for Jackson, Dyersburg, Fayetteville, and Memphis to cover a wide geographic range of Tennessee cotton production. These are only forecasts

and are subject to the inaccuracies associated with trying to predict the weather. This information should be used along with good judgment for making a planting decision.

Cotton Planting Forecast for April 16-21, 2008

Jackson, TN

Predicted 5-day DD60 accumulation – 12 (Poor)

Rainfall – 4/18 (60%), 4/19 (30%)

Dyersburg, TN

Predicted 5-day DD60 accumulation – 14 (Poor)

Rainfall – 4/18 (60%), 4/18 (30%)

Fayetteville, TN

Predicted 5-day DD60 accumulation – 5 (Very poor)

Rainfall – 4/18 (30%), 4/19 (40%)

Memphis, TN

Predicted 5-day DD60 accumulation – 17 (Marginal)

Rainfall – 4/18 (60%)

Outlook (for all regions) – The forecast is for chance of showers on Saturday and a very poor to marginal accumulation of DD60s over the next 5 days. Most forecast lows drop below 50F for Friday night and most nights in middle Tennessee. The good news is that a warming trend is predicted as we start next week which is the beginning of our recommended planting window. Keep in mind that these are not the kind of conditions that will result in a full stand. Emergence is expected to be poor and seedling growth is likely to be slow.

Predicted DD60 accumulation for five days following planting	Outlook for planting
<10	Very poor
11-15	Poor
16-25	Marginal
25-50	Good
>50	Very good

Wheat Diseases and Their Control (Melvin Newman, Extension Plant Pathologist). Disease pressure can develop any time environmental conditions are favorable for disease development. Diseases that occur frequently in Tennessee are barley yellow dwarf, leaf rust, powdery mildew, Septoria glume and leaf blotch and loose smut. Glume blotch is most consistent in its ability to reduce yields year after year. Leaf rust and powdery mildew only cause damage in certain years when environmental conditions are favorable for these diseases.

Wheat Foliar Fungicide Point System

This point system below should be used only as a guide to determine the need for application of foliar fungicides. It does not guarantee an economical return. If a "zero" is indicated in category # 1 or 3, then the field **should not** be sprayed.

		<u>Points</u>
I. Yield Potential (5-7 days before first spray)		
1. 40 b./A or above	= 150	
2. 30-39 b/A.	= 50	
3. Below 30 b/A.	= 0	I. _____
II. Cropping History		
1. Wheat in field last year	= 100	
2. Wheat in field two years ago	= 50	
3. First time in wheat three years or longer	= 25	II. _____
III. Fertility (total Nitrogen)		
1. Applied 90-120 lbs. of Nitrogen/A.	= 100	
2. Applied only 60-90 lbs. of Nitrogen/A.	= 50	
3. Applied no nitrogen	= 0	III. _____
IV. Seeding rate (assuming 80% plus germination)		
1. Planted 2 or more bushels/A.	= 75	
2. Planted 1.5-2.0 bushels/A.	= 50	
3. Planted less than 1.5 bushels/A.	= 25	IV. _____
V. Disease at application time (stage F10.3).		
1. Severe (disease starting on flag leaf)	= 100	
2. Moderate (bottom & middle leaves diseased)	= 75	
3. Light (disease found on lower leaves)	= 50	
4. No foliar disease present	= 25	V. _____
VI. Seasonal rainfall prior to first application		
1. Above normal	= 100	
2. Normal	= 75	
3. Below normal	= 25	VI. _____
VII. Traditional Disease Pressure		
1. Heavy	= 125	
2. Moderate	= 75	
3. Light	= 25	VII. _____
Total Points		_____

After inspection of each field (boot stage), producers should total the number of points to determine the probability of a yield increase

<u>Total Field Points</u>	<u>Chances of Yield Increase</u>
750-1000	Excellent
500-749	Fair
Below 500	Poor

Stage of Growth to Apply Foliar Fungicides: Close attention must be paid to the stage of growth to obtain maximum benefit from foliar fungicides. If the application is made too late, then infection could have already occurred. If application is made too early, the flag leaf and head will not be protected. Unless powdery mildew or a rust disease is threatening the flag leaf, the best time to apply a foliar fungicide is a **Feeke's scale 10.3** (when ½ of the head has emerged). Each application must be made in at least 5 gallons of water per acre by airplane or at least 20 gallons of water per acre with ground rigs. Always use a spreader-binder that is labeled for fungicides with either application method.

RECOMMENDED FOLIAR FUNGICIDES				
Chemical Name	Trade Name	Formulation	Rate/A per Application	Diseases Best Controlled
Pyraclostrobin	Headline (BASF)	23.6 % EC	6 to 9 fl oz	Glume blotch and Septoria leaf spot, rust diseases, Tan spot
Propiconazole	PropiMax (Dow)	41.8 % EC	4 fl oz	Rust diseases, powdery mildew, leaf blight and glume blotch and tan spot
Azoxystrobin	Quadris (Syngenta)	22.9 % F	4- 12 fl oz (general use: 6-9 fl oz)	Glume blotch and leaf blight, rust diseases, tan spot
Propiconazole	Tilt 3.6 (Syngenta)	41.8% EC	4 ozs.	Rust, Glume Blotch, rust diseases, powdery mildew, glume blotch and leaf blight
Azoxystrobin + Propiconazole	Quilt (Syngenta)	7 % + 11.7 % F	10.5 to 14 fl oz	Rust diseases, powdery mildew, glume blotch and leaf blight, tan spot
Propiconazole + Trifloxystrobin	Stratego (Bayer)	11.4 % + 11.4 %	10.0 fl oz	Glume blotch and leaf blight, powdery mildew, rust diseases, tan spot

General Wheat Diseases Control Practices

1. Follow fertility recommendations closely.
2. Observe recommended planting dates and seeding rates.
3. Use resistant varieties if available.
4. Use recommended fungicides properly.

Corn Update (Angela Thompson, Corn and Soybean Extension Specialist). We have around ten percent of our crop planted at this time, down substantially from last year. In some ways, this year seems like a repeat of last spring- delayed planting and some replanting of early planted corn that didn't make it through the wet, cold field conditions. Our earlier planted corn has not been growing

under optimal conditions and growth and development has been slow. Consequently, it looks like we will be planting the bulk of our corn this week and next week where it will not be very far behind early corn planted two or more weeks ago. Happily, it seems that temperatures are heading upwards and we are looking at more sunshine than we have seen in a number of days. Although we are looking at April 15th on the calendar, I am encouraging folks to ignore the date on the calendar and focus on getting as much corn planted as quickly as possible.

We can ponder the effects of delayed planting on yield and there is no doubt that late May planting is detrimental to corn yield in Tennessee. Early May planted corn can still be very productive especially on good ground, although productivity is more closely tied to when the rains fall. Some data from Illinois suggests about a 1 bushel yield decrease for each day planting is delayed after May 1 and about 2 bushels yield decrease for each day planting is delayed after mid May. Getting the bulk of the corn planted by early May should minimize significant late planting yield drag for most producers this spring.

- Let the ground dry as much as practical. Wet soil does a poor job of closing around the seed and you are more likely to have partially open seed slots. Fields planted too wet often face irregular emergence patterns which can cause plant competition later (late emerging corn competes poorly when grown next to normal emerging corn sometimes affecting pollination later on).
- Plant 2” deep in most cases. This improves early root development and birds have to work harder to pull seed out of the ground.
- Use trash cleaners to lightly remove debris above the furrow and create a more optimum seed furrow. “Hair pinning” or planting surface trash into the seed furrow limits seed-to-soil contact resulting in late or poor germination.

Watch planting speed. As tempting as it is right now to speed up and cover more ground, try not to drive excessive speeds when planting. Most planters operate best at 5 mph or slower.

Weed Control (Larry Steckel, Weed Specialist)

Late Season Burndown Options for Cotton.

The call of the last week has been what should my burndown strategy be with planting time upon us? In many cases it is too close to planting to apply dicamba which has been our “go to” glyphosate-resistant horseweed herbicide. However, one must look at the label of the different dicamba products sold as there are some differences. The most notable is that Clarity has a supplemental label that allows cotton to be planted **14 days and 1”** of rainfall after Clarity is applied. All the other generic formulations of dicamba (Banvel, Rifle, Agri Star, etc) have a 21 day and a 1” of rain waiting period before cotton can be planted. Horseweed is now growing rapidly and some I have looked at are 6 to 8” tall. Below are some more thoughts on late horseweed burndown.



➤ **Dicamba 8 ozs/A + glyphosate 22 ozs/A**

Management Considerations

- a. Clarity rates of 8 ozs/A can be applied up to 14 days before planting and 1” of rainfall to avoid crop injury.
- b. Generic dicamba products at rates of 8 ozs/A can be applied up to 21 days before planting and 1” of rainfall to avoid crop injury.
- c. Remember to use a surfactant (0.25% NIS) with dicamba applied alone or with a glyphosate product that has no or moderate surfactant load.
- d. Be cautious of making overlaps!!

➤ **Gramoxone Inteon 40 to 48 ozs/A + 0.25% NIS + Caparol 32 ozs/A or Cotoran 32 ozs/A or Direx 16 oz/A**

Management Considerations

- a. This application can be applied right up to planting.
- b. Gramoxone Inteon rates below 40 ozs/A will not provide as consistent control of horseweed as higher rates.
- c. For larger horseweed (>6”) use **48 ozs/A** of Gramoxone Inteon.

➤ **Ignite 29 ozs/A + Caparol 32 ozs/A or Cotoran 32 ozs/A or Direx 16 oz/A**

Management Considerations

- a. This application can be applied right up to planting.
- b. Ignite will not provide good control of horseweed under cool conditions.
- c. Ignite performance is very temperature dependent. Works best with highs in the 80s and lows in the 60s.

Late Season Burndown Options for Soybean

➤ **Dicamba 8 ozs/A**

Management Considerations

- a. Dicamba rates of 8 ozs/A can be applied up to 14 days before planting and 1” of rainfall to avoid crop injury.
- b. Be cautious of making overlaps!!

➤ **Gramoxone Inteon 40 to 48 ozs/A + 0.25% NIS + Sencor 4 ozs/A or Canopy 4 to 6 ozs/A or Boundary 20 ozs/A or Prefix 32 ozs/A.**

Management Considerations

- a. This application can be applied right up to planting.
- b. Gramoxone Inteon rates below 40 ozs/A will not provide as consistent control of horseweed as higher rates.
- c. For larger horseweed (>6”) use **48 ozs/A** of Gramoxone Inteon.

➤ **FirstRate 0.3 to 0.4oz/A + Roundup WM 22oz/A**

Management Considerations

- d. This application can be applied right up through soybean emergence.
- e. FirstRate will not provide good control of horseweed under cool conditions.
- f. FirstRate performance is temperature dependent. Works best with highs in the 80s and lows in the 60s.

Insect Management (Scott Stewart, IPM Specialist). There is not too much going on. With the wet weather and late burndowns, it looks like a pyrethroid spray for the prevention of cutworm infestations will be in order for many of our corn and cotton acres. I covered this in detail in the last newsletter ([link to previous newsletter](#)). Aphid infestations in wheat, also covered in the last newsletter, have subsided as natural enemies have done their duty in many fields.

I've heard some concern about stink bugs in wheat. Stink bugs species found in wheat include the brown stink bug, rice stink bug and green stink bug. It takes a lot of stink bugs to justify treating wheat. As discussed in their recent newsletters, Arkansas and Mississippi use a threshold of 1 stink bug per 10 heads when wheat is in the milk stage. The threshold increases dramatically to 1 per head once wheat reaches the soft dough stage. To make a long story short, it is unlikely you will need to treat wheat for stink bugs. However, small corn (< 18-24 inches tall) can be injured by stink bugs feeding on the growing point. You may consider treating your wheat if it is heavily infested with stink bugs and adjacent corn fields are in this susceptible stage, especially if the wheat is maturing. Some states suggest a stink bug threshold in small corn of 10% infested plants. Both brown and green stink bugs can be problem in corn, but rice stink bugs do not.

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

The recent rains and floods or back water have created some anxious and stressful moments for producers in Tennessee. Producers who have wheat underwater or damaged by water should contact their crop insurance agent regardless of their coverage. If the wheat is a loss, then determine your alternatives. The most likely alternative that will be available by the time the ground can be planted will be soybeans. If it was to be double cropped, soybean seed was probably already secured or at least ordered. However, the planting may be earlier than was anticipated, so it is important to recognize if the variety will still be suitable. If the soybean variety is not suitable, there may still be time (depending on when the water goes down and it dries up) to get a corn, milo, or cotton crop on the failed wheat acres. Chemical restrictions may apply, so check on them before planting a crop.

If ground that was to be planted to corn is under water, the final planting date for corn in the crop insurance policies I reviewed is May 20. Check with your crop insurance agent about the prevented planting provisions in your policy.

Commodity prices dipped some after the March 31 Planting Intentions Report, but have rebounded this week. There is still time to consider spreading out your risks with a diversified crop mix. Soybean seed is in tight supply, so I would encourage you to check again and make sure you have adequate seed to plant your crop. If not, corn, milo, or cotton, if you are set up for it, are viable alternatives.

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

A handwritten signature in black ink, appearing to read "Scott D. Stewart". The signature is fluid and cursive, with a prominent initial "S" and a long, sweeping underline.