

# IPM NEWSLETTER

## Update for Field Crops and Their Pests

No. 6

May 2, 2008

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### Friendly Public Service Announcement (Dr. Chris Main, Extension Cotton and Small Grains Specialist)

Please remember that with late burndown applications this year that most likely there will be a sensitive crop nearby that has already emerged. Cotton and tomatoes are extremely sensitive to 2,4-D and dicamba. While most grain crops are Roundup Ready, wheat, flowers and yards will show symptoms from glyphosate as well. Paraquat, while usually non-lethal at drift rates will show up at extremely low rates and will cause your neighbors to be concerned. Please use some discretion when making burndown applications. We are all behind with burndowns and planting this year, but you would not appreciate your neighbor killing your crop, so give them the same respect.

### Cotton Planting Forecast and Comments (Dr. Chris Main, Extension Cotton and Small Grains Specialist)

#### Cotton Planting Forecast for May 1-5, 2008

##### *Jackson, TN*

Predicted 5-day DD60 accumulation – 18 (Marginal)  
Rainfall – 5/2 (80%)

##### *Dyersburg, TN*

Predicted 5-day DD60 accumulation – 20 (Marginal)  
Rainfall – 5/1 (30%), 5/2 (80%)

##### *Fayetteville, TN*

Predicted 5-day DD60 accumulation – 23 (Marginal)  
Rainfall – 5/2 (60%), 5/3 (40%)

##### *Memphis, TN*

Predicted 5-day DD60 accumulation – 27 (Good)  
Rainfall – 5/2 (80%)

Outlook (for all regions) – The forecast is for chance of showers on Friday night / Saturday morning and a marginal to good accumulation of DD60s over the next 5 days. Most forecast lows drop into the low 50's for several nights all across Tennessee. The good news is that we are beginning to dry out and a warming trend is predicted as we start next week. Several research plots that have been planted are emerging to a full stand from 7-8 days after planting. Emergence is expected to be good and seedling growth is likely to be slower than expected until night time temperatures increase.

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

**Weed Management (Larry Steckel, Weed Specialist)**

**Watch Out For Tank Contamination and Drift:** The main call of the last week has been looking at drift injured and spray tank contamination injured crops. Given that we have had about 1 good spray day in the last 20 days has many folks pushing hard. So it is not a big surprise that these problems are a little more prevalent than at this time last year. As Chris mentioned, even though time is a premium this spring, take some time to notice surrounding crops, wind speed and direction when spraying. It can save everyone a lot more time and trouble down the road.

We have also looked at wheat that after being sprayed with a fungicide has been showing herbicide injury. The primary herbicide showing up in a few wheat fields from sprayer tank contamination looks to be Valor. Valor has become a very popular herbicide to apply in burndowns to provide residual control of horseweed and pigweeds. It is one of the better herbicides to use for residual control of some of our more troublesome broadleaf weeds. It is however, very difficult to clean from a sprayer in particular the hoses on a sprayer. Some folks are still trying to clean Valor from tanks with just water or with water plus ammonia. This can clean it from the tank but often will leave residue in the spray lines. Then over the top applications of a fungicide (in wheat) or glyphosate (in soybeans or cotton) will pull it out of the lines and deposit it on top of the crop. The only way to clean Valor from a spraying system is with a high pH tank cleaner. Valent the manufacturers of Valor offer for sale a tank cleaner specifically designed to clean Valor from a sprayer. Our recommendation is to use that tank cleaner! Keep in mind that several premixes that are being used this year contain Valor. They include Gangster, Valor XLT and Envive.

We are also getting quite a few “new” weeds to ID this spring. This is not surprising with all the hay shipped into the state from points across the country last year. Some of these weeds have undoubtedly been carried in with the hay. My main recommendation is to not wait around for a weed ID and let those new weeds spread from cattle feeding areas. Some of these weeds are major pests in other parts of the country and we do not need to get them started here!!!

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

So far we have been lucky with the recent frosts. I have observed very little frost damage, mainly light damage on the flag leaf. Diseases that are most prominent include *Septoria* and some powdery mildew. If powdery mildew is present use a combination fungicide such as Stratego or Quilt. If mildew is not present Headline or Quadris will provide needed control. If your fungicide has already been applied, start thinking about getting the combine ready. Barring an unforeseen insect outbreak, wheat should progress along nicely with the predicted warm temperatures to come.

**Wheat Disease Situation in Tennessee (Melvin Newman, Extension Plant Pathologist)**

**BARLEY YELLOW DWARF:** There has been a lot of BYD around this season, especially where no control was used, either as a seed treatment or as a foliar application in the fall. Control looks good where treatments were used.

**POWDERY MILDEW:** A lot of powdery mildew has been showing up, some fields were hit hard. Varieties differ in their susceptibility. Spraying with a fungicide with a triazole (Tilt, Quilt or Stratego) in the mix has held this disease back. As long as we have cool, wet conditions powdery mildew will continue to climb to the flag leaf and even to the head in some situations.

**LEAF RUST:** Leaf rust has just started to move into West Tennessee. I doubt that it will cause much damage. It came in just a little too late to be harmful. But, wheat that was sprayed with a fungicide should be protected in any case.

**SEPTORIA LEAF BLOTCH:** This disease started early and is increasing rapidly now. It will probably be the main disease this season. Fungicide spraying at early heading will hold this disease down significantly.

**SEPTORIA GLUME BLOTCH:** I haven't seen many glume blotch lesions on the leaves, but it usually comes on after heading. Again, foliar fungicides will hold this one down as well.

**TAKE-ALL:** A few cases of take-all have been found in West TN. Middle and East TN usually have a much bigger problem with this disease. There is not much you can do to control this disease. It is usually worse in fields with a higher soil pH. Crop rotation may help some, but does not give complete control. Fungicide seed treatments may also help.

**HEAD SCAB:** It is still too early to see head scab (white heads). The fungicides we have available will not give very much control of this head disease. It is usually worse when there is rainy weather for two or three days during the flowering stage.

**FUNGICIDE PROBLEMS:** There have been some shortages of some fungicide brands in West Tennessee. Also, there have been some reports of active ingredients not being fully dissolved causing nozzles to stop up. It is best not to mix your fungicide with any other pesticide. This may lead to poor mixing and nozzle plugging. Be sure to clean out your spray tank and lines really good before spraying wheat with a fungicide. Most labels allow spraying a fungicide up to growth stage F10.5 (beginning of flowering). Spraying later than that could cause improper chemical residues in the grain.

### **Brief Description of Some Major Wheat Diseases in Tennessee**

**Barley Yellow Dwarf:** This virus disease in the past has received little attention in wheat, but it is becoming a limiting factor to production in some areas. The light green to yellowish and sometimes reddish foliage and stunting induced by the virus are similar to the symptoms attributed to non-parasitic factors such as nutrient deficiencies and poorly-drained soil. The virus is transmitted from plant to plant by several species of aphids which feed on wheat. Some degree of control of barley yellow dwarf can be obtained by planting late in the fall, but early enough to provide an adequate root system that will withstand low winter temperatures. Aphid vector control with seed-applied insecticides has been found to be effective in controlling this virus disease.

**Leaf Rust:** *Puccinia recondita f. sp. tritici* - Rust appears as small, round or oblong raised orange-red pustules, mainly on the upper surface of the leaves. Leaf rust, when severe, reduces both

grain yield and test weight. It is transmitted by wind-borne fungus spores. Foliar fungicides are effective in controlling leaf rust.

**Powdery Mildew:** *Erysiphe graminis f. sp. tritici*

Diseased plants are usually found in the spring in moist areas of fields where the growth is rank. Powdery mildew is very noticeable on the leaves as a white-powdery mass which often covers the entire blade. Later, the affected leaves turn yellow and die prematurely. Heavy attacks of powdery mildew cause plants to lodge and kernels to shrivel. Foliar fungicides are effective in controlling powdery mildew.

**Glume Blotch:** *Stagonospora (Septoria) nodorum* - Glume blotch may first be noticeable on the lower leaves as small oblong lesions which are light brown with dark borders. After heading, the fungus moves to the head. First indication of infestation is the brown discoloration of the glume (chaff). As the grain matures, the glume takes on a black peppery appearance which is due to spores (pycnidia) of the fungus.

Infection of the leaves can be serious and severe attacks on the head can significantly reduce yield and grain quality. Glume blotch is primarily a warm weather disease. Both glume and leaf blotch fungus spores live through the summer in crop residue. General control measures include plowing under crop residue immediately after harvest (unless using no-till practices), allowing at least one year between wheat crops and use of foliar fungicides.

**Leaf Blotch:** *Septoria tritici* - Leaf blotch is more noticeable early in the spring, when it appears as irregular reddish-brown spots scattered over the leaf blade. The spots, often with ashen white centers, contain many black specks. Lesions tend to be restricted laterally and assume parallel sides. The damage caused to portions of the leaf can reduce yields. Leaf blotch also damages the seedling and tillers.

**Tan Spot:** *Pyrenophora tritici-repentis* - Tan spot develops on both upper and lower leaf surfaces. The spots start out as brown or tan colored flecks, expanding into lens-shaped blotches from 1/8-3/4 inch long, often with yellow borders. Later these lesions may coalesce and become dark brown at their center containing conidia (spores) of the fungus. Dark pseudothecia of the fungus appear as dark, raised specks on mature wheat straw. Foliar fungicides are effective in controlling tan spot.

**Loose Smut:** *Ustilago tritici* - Loose smut is easily recognized as soon as the affected heads emerge from the boot. Smut-infected heads appear earlier than normal ones and a loose, dark-colored spore mass replaces the seed in the head. Spores are washed and blown away by rain and wind, and by harvest, nothing remains of the head except a bare spike. Loose smut may reduce the yield but does not affect grain quality.

The disease is seed-borne within the wheat kernel and may be controlled by treating the seed before planting with various fungicides.

**Head Blight or Scab:** *Fusarium* spp. - Head blight, also called pink mold, white heads or tombstone scab, is manifested by the premature death or blighting of spikelets of the head. The disease appears on all small grain crops and is especially important in humid regions. Prolonged rainy spells during the blooming stage of the wheat will enhance conditions for infection. Significant yield losses result from floret sterility and poor seed filling.

Grain from head-blighted fields is less palatable to livestock and sometimes contains sufficient mycotoxins to induce muscle spasms and vomiting in humans and certain non-ruminant animals. The toxins apparently remain stable for years in stored grain. Bread made from scabby wheat has been described as intoxicating. Control with crop rotation and fungicides are only slightly effective.

**Take-All:** *Gaeumannomyces graminis var tritici*. - The term "Take-All" originated in Australia more than 100 years ago and referred to a severe seedling blight disease. Today, Take-All is best recognized as a root and shoot disease of winter wheat that interrupts plant development and seriously suppresses yield.

Take-All is most obvious near heading on plants grown in moist soil. Diseased crops appear uneven in height and irregular in maturity. Severely diseased plants easily break free at the crown when pulled from the soil.

Infested plants are stunted, mildly chlorotic, have few tillers and ripen prematurely. The heads are bleached (white heads) and sterile. Roots are blackened and brittle from fungal invasion. A black-brown dry rot extends to the crown and basal stem. Control by crop rotation and other cultural practices is not very effective. Foliar fungicides are not effective in controlling this disease.

\*A complete description of all wheat diseases can be found in “*Compendium of Wheat Diseases (2<sup>nd</sup> edition)*”, sold by *The American Phytopathological Society*.

### **Farm Management (Chuck Danehower, Area Specialist – Farm Management)**

The crop planting season has gotten off to a slow start with some corn still waiting to be planted. Although there is a tendency to want to catch up, producers should be careful to not get in too big of a hurry planting. Research has shown that for most planters, the optimum speed for planting is 5 - 6 mph. Planting faster than that, often results in poor seed placement which can affect yield.

If you find yourself behind on planting, rather than speed through the process, it may be time to consider having some of your crop custom planted. The reverse could also be true for a producer who finishes planting early – hire out to do custom planting. We always get calls for how much should I pay or how much I should charge for custom planting, particularly with increases in diesel prices. The UT Crop Budgets list the total costs for a 12 row planter and 215 HP tractor as \$9.98 acre at \$3.50 gallon diesel. The University of Kentucky has a 2008 Custom Rate publication that compiles custom rates from 5 states. Their custom rates are based on \$3.00 diesel. I will give an adjustment to make for the higher diesel prices. The web address of this publication is [http://www.uky.edu/Ag/AgEcon/pubs/ext\\_aec/2008-01.pdf](http://www.uky.edu/Ag/AgEcon/pubs/ext_aec/2008-01.pdf).

They use an average rate as well as list 15% below average and 30% above average. These differences help account for the efficiency among producers. The higher cost custom rate should capture more of the custom operators working with less efficient equipment. However, I do feel that a highly skilled custom planter would also fall into the above average cost structure. A producer with updated equipment, skilled person on the planter, and one who does an above average job is worth it.

A no-till planting rate for corn (cotton would be comparable) ranges from \$12.00 an acre to \$18.50 acre with the average final rate of \$14.50 acre. Soybeans planted on 15 inch rows range from \$13.00 – \$20.00 acre with an average final rate of \$15.00 acre. On 30 inch rows, the range is \$13.00 - \$19.50 with an average final rate of \$15.00. Drilled no-till soybeans custom rates range from \$12.50 - \$19.50 acre with an average final rate of \$15.00 acre. For every \$.50 increase in diesel, the planting cost increases \$.34 acre. For \$3.50 gallon diesel, I would round up and adjust the custom rate by \$.50 acre.

A producer just wanting to cover the cost of planting would need at least \$10.00 acre while the going market rate is in the \$15 - \$16 per acre range. Some adjustments should be made depending on the efficiency and skill of the operator. In most cases, yield increases from timely planting will offset the custom rate cost. Closely evaluate your planter and use the information to make adjustments for not only this year, but 2009. If you would like a copy of the Kentucky publication drop me an email at [scdanehower@utk.edu](mailto:scdanehower@utk.edu) or call 731-635-9551.

**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

A handwritten signature in black ink, appearing to read "Scott D. Stewart". The signature is fluid and cursive, with a long horizontal stroke at the end.