

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 26

September 25, 2009

Past newsletters and other information can be found at UTCrops.com

Bookmarks: [Cotton situation](#) [Grain crops update](#) [Insect stuff](#) [Farm management](#)

Cotton Situation (Dr. Chris Main, Extension Cotton Specialist)

The Tennessee Agricultural Statistics Service reports cotton condition as 23% excellent, 54% good, 22% fair, 1% poor, and 0% very poor. 40% of the crop has open bolls compared to 31% last week, 72% last year and 77% for the five year average.

Harvest Aid Publications: [Cotton Defoliation Timing](#), [Cotton Harvest Aids](#)

Defoliation crunch time is upon us. The following discussion will attempt to provide some insight on what happens with early defoliation, what products are working well, and when to defoliate. Historically west Tennessee has a 50% chance of a killing frost between October 8th and 21st depending on your location. Chances increase to 90% by October 29th – November 4th. Below is the 15 day forecast for west Tennessee. Be aware that this is a forecast which is based on prediction models and is subject to change.

Extended forecast for west Tennessee.

Friday 9/25 – Saturday 9/26:	Warm rain showers continue
Sunday 9/27 – Thursday 10/1:	Sunny, warm days (76-83 F), cool nights (high 48-54 F)
Friday 10/2 – Monday 10/5:	Chance of rain each day, Highs (67-75 F) Lows (46-53 F)
Tuesday 10/6:	Colder with sun Highs 65-69 F) Lows (43-53 F)

Traditionally, it is always a good idea to defoliate around October 1st. This year is no exception. There are three scenarios for defoliation this year.

Scenario 1: April planted cotton, 40-80% open bolls. These fields are the best candidates for a 1 pass defoliation approach. Most likely plants in these fields will have some level of boll rot (see pictures below) and seed sprout. Go ahead and defoliate immediately when the weather clears and you can get into the field. There should be no adverse effects to fiber quality in this scenario. *Treatments that are working well in this scenario:* Def (4-6 oz), Aim (0.75 oz), or ET (1.5 oz) [choose one] with either Finish (16-24 oz) or Prep (24-32 oz). Add crop oil at 1 gallon per 100 gallons of water.

Scenario 2: Mid May planted cotton, cracked boll to 20% open bolls. Most of these fields will need a 2 pass defoliation system unless plants are compact (less than 36 inches tall with row middles visible). There is a chance of significant boll rot in bolls that have cracked in the last 10 days and have not seen sunshine. Removal of leaves is advisable to help get sunshine and air movement to bolls and facilitate deposition of ‘boll opener’ in the second pass. Get to these fields after you defoliate April planted cotton, or beginning October 1st. There is the possibility of reducing overall micronaire and strength by

defoliating early (prior to node-above-cracked-boll 4). This reduction comes from having immature fibers in the upper bolls that will reduce overall quality. *Treatments that are working well in this scenario:* **1st pass**, Def (4-6 oz) with Finish (8-12 oz) or Prep (6-8 oz). Add crop oil at 1 gallon per 100 gallons of water. The low rates of Finish and Prep act as a synergist to help remove leaves a will not promote much boll opening. **2nd pass**, Def (6-8 oz), Aim (0.75 oz), ET (1.5 oz), or Ginstar (2-3 oz) [choose one] with either Finish (16-24 oz) or Prep (24-32 oz). Add crop oil at 1 gallon per 100 gallons of water.

Scenario 3: June planted cotton without a cracked boll. These fields will need a two pass approach. Boll rots will be limited in these fields since bolls are not open. Some boll rot could show up if bolls have been probed by clouded plant bugs, stink bugs, or if there is worm damage. These fields are going to require close examination and an eye on the weather to decide on defoliation timing. Plants in this scenario have many immature bolls that may not ever mature to a harvestable boll. Please consult our defoliation timing guide ([Cotton Defoliation Timing](#)) on the UT Crops website. In general use the sharp knife technique to check on boll maturity. If the seeds still have ‘jelly’ centers they will not open (immature), if folded cotyledons are present those bolls will most likely open (harvestable), and if there is a dark seed coat present those bolls are mature. We will most likely have fiber quality losses in these fields. Low mic, low strength, and reduced uniformity will be found on grade sheets from these fields. Begin defoliating these fields after the April and May planted cotton. Mother nature will dictate the success we have in this scenario. Waiting until the week of October 5-9 is advisable if the 10 day forecast does not contain frost possibilities. You need 5-7 days before a frost for Prep applications to effectively open bolls. *Treatments will work well for this scenario:* **1st pass**, Def (6-8 oz) with Finish (8-12 oz) or Prep (6-8 oz). Add crop oil at 1 gallon per 100 gallons of water. The addition of Dropp (1.6-2.4 oz) can help defoliate and control re-growth in this scenario if temperatures remain in the 70’s for highs and 50’s for lows. The low rates of Finish and Prep again act as a synergist to help remove leaves a will not promote much boll opening. **2nd pass**, Def (6-8 oz), Aim (0.75 oz), ET (1.5 oz), or Ginstar (2-3 oz) [choose one] with either Finish (24-32 oz) or Prep (32-36 oz). Add crop oil at 1 gallon per 100 gallons of water. **REMINDER:** The maximum labeled use rate of Prep (ethephon), or ethephon containing products (Finish) is 2.0 lbs per season. This equates to 42 oz of 6 lb per gallon ethephon. Finish contains 6.0 lbs per gallon of ethephon as well.



Boll rot of bottom fruit.



Two cracked bolls, one with rot.



Bolls from 10 foot of row, most rotted

Grain Update (Dr. Angela McClure, Extension Corn and Soybean Specialist)

Soaking rains in many areas of the state have caused more concerns with corn, soybean and grain sorghum. Some areas across northern TN have had less rain overall and were able to harvest corn later than southern counties. On the bright side, dry weather seems to be a few days away which will help slow down the damage already caused by damp, wet weather. Farmers seem to be trying to look ahead to next week when they may be able to get back into fields and start retrieving some of their crop.

Early corn yields were excellent before the rains set in. Even though it seemed to take longer than it should for the earliest corn to dry down, I was hearing above 150 on most every field with several well above 200 bushels per acre. We didn't get many soybean acres harvested before the monsoons but early yields were very good. Wet weather is causing sprouted corn on the ear in wettest areas and this is particularly bad on hybrids with loose or short husks that don't cover the end of the ear, in fields where moisture was high and ears had not turned down.

In the wetter areas, soybean quality is being affected by pods splitting and seed sprouting in the pods. In some cases, the field is mature seed (often with lots of anthracnose) and upper pods seem to be mainly affected. In other fields, less mature beans have green seeds splitting green pods open. We can blame both of these scenarios on the weather. Some researchers think soybeans growing under dry conditions (like we had in August) at a critical stage in pod development that are abruptly subjected to very wet weather are more likely to split open, regardless of whether a fungicide was applied or not. I hope to have a better idea as to overall crop quality next week when dry weather returns (I am optimistic!!).

Grain Sorghum is hit hardest of all crops with seed sprouting in the heads in the southern counties in west Tennessee. Reports of damage are ranging from less than 10% sprouting to more than 80%. This is also a huge problem in Arkansas this year (photo sent to me by their specialist, Jason Kelley). Because sorghum doesn't have a shuck or pod cover, it is more vulnerable to weathering damage during rainy weather than corn or soybean. When sorghum seed is physiologically mature and the seed stays coated with moisture for a few days, the seed can absorb enough water to sprout on the head. A little rain doesn't hurt sorghum because the seed has time to dry out, however in these affected areas, continuous rains, lack of sunshine and high humidity have kept seed wet.



Grain sorghum that has more than 15% sprouted seeds will automatically be classed as 'Sample grade' which is the lowest grade available. Some elevators are reluctant to accept sorghum that has more than 9% sprouted seed often classing seed with more than 9% sprouting as 'Sample grade'. There aren't a lot of options for heavily sprouted sorghum seed. I have found some information indicating the nutritional quality as livestock feed isn't affected by the sprouting as long as seed do not become moldy and it can be feed to swine. If you are a producer with heavily sprouted sorghum, please check with your crop insurance adjustor to see if there is any help from crop insurance.

I have had calls asking about using a desiccant on **lightly sprouted sorghum** in order to dry it quickly in order to harvest ASAP next week. Sodium chlorate is the only desiccant labeled in sorghum that would desiccate crop foliage quickly. Glyphosate will kill the sorghum plant but acts too slowly to be an effective desiccant. Results will be more positive if the rains quit!! A desiccant will help kill/dry down plant foliage and probably dry down the seed sprouts but **it will not prevent further seed sprouting—the only thing that will do that is dry weather**. If you have more than 15% sprouted sorghum seed, I would not waste money on a desiccant. You may not have a market for the seed and you should not feed sodium chlorate treated seed to livestock.

Insect Considerations (Scott Stewart, IPM Specialist)

Soybeans. Both threecornered alfalfa hoppers and stink bugs are on the increase in many late maturing fields. I've been in and had calls about several fields this week where one or both pests were above treatment threshold. Loopers are present but at generally low numbers. Of course it is hard to spray in the rain, and an airplane may be necessary even when it stops, but treat fields that are < R7 in maturity if pest populations reach the following thresholds:

- Stink bugs = 9/25 sweeps (= 36/100 sweeps)
- Threecornered alfalfa hopper = 25/25 sweeps (= 1 per sweep)
- Loopers = 19/25 sweeps (=76/100 sweeps) or defoliation exceeds 20-25%

Airplane service can also be used to prevent yield losses resulting from sprayer tracks. Spray tracks can cause 1-3 bushels of yield loss depending on tire width, row spacing and crop maturity. Unless soybean loopers are a target, pyrethroid insecticides are a generally good choice. This includes Brigade and other bifenthrin products, Baythroid XL, Karate, Mustang Max, and Prolex/Declare. My experience is that Asana XL is not as good on stink bugs. Brigade (5 oz/a) is a good choice if brown stink bugs are common, or you can use higher rates of the other pyrethroid insecticides. Some other options and suggested rates are listed in UT's insect control guide (http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/InsectBook.htm).



Soybean aphids are common in many fields in Middle Tennessee, at least fields in Bedford, Cannon and Coffee Counties. It is probably too late to benefit from spraying aphids unless fields are not yet at R5. It may be a good time to look at your fields, especially late fields, to see if you have been missing this critter.

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

It looks like harvest will soon start in earnest as drier weather is forecast for the next week. Some corn and soybeans have been combined, but the bulk of it is still ahead of us. As late as this crop has been, a timely harvest will be challenging. Quality issues and maybe some yield loss could be a concern if we do not have a suitable Fall for harvest. Cotton producers who were unable to plant their normal acreage to cotton and ended up with more soybeans may find their current combine situation inadequate for a timely harvest. These producers as well as others desiring for a timely harvest may look to custom harvesters to help them get their crop out. Also, some producers may look to earn additional income by custom harvesting. How much should custom harvesters charge/make an acre? I use several sources to

derive an estimate of custom harvesting cost. These sources include custom rate guides and UT budgeted cost.

The latest custom rate guide I have is from Kentucky and examines custom rate costs from several states. 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. In the UK Custom Rate Guide, custom combining of corn has an average rate of \$26 acre with soybeans at \$25.50 acre. The below average and above average ranges for both are \$22 - \$34 acre. These costs are based on \$2.00 gallon diesel, but do not include a grain cart. When a grain cart is included, the average cost increases to \$37 acre for corn and \$34 acre for soybeans. The below average and above average range for corn is \$31.50 - \$48.00 acre and for soybeans is \$29 - \$44 acre.

The UT budget adjusting for a diesel price of \$2.00 gallon estimates total cost per acre for combining corn with an 8 row header at \$33.70 per acre and soybeans with a 25 foot header at \$26.60 acre. This cost is composed of \$21.32 an acre of fixed machinery cost, and \$12.38 per acre of variable (fuel, repairs, & labor) cost for corn and \$16.75 fixed cost and \$9.95 variable cost for soybeans. Width of the header, cost of the header and field speed make up the difference between corn and soybeans. Our budgets also list a 750 bushel grain cart which has a total cost of \$13.95 acre and is composed of \$6.93 acre fixed cost and \$10.11 acre variable cost. This cost assumes the tractor and grain cart are used the same amount of hours as the combine. If the grain cart is really used 50% of the time of the combine, then the cost will be \$6.98 acre. Individual cost will vary depending on age and size of equipment, hours used, as well as travel distance to the fields to be harvested. Using the custom rate guide and estimated cost of operation gives a range of \$26 - \$34 per acre for custom combining of corn and \$26.00 acre for soybeans. If a grain cart is also used then the range would be \$37 - \$41 acre for corn and \$34 for soybeans. The Iowa State custom rate guide does recognize an additional charge of \$2.10 acre for yield mapping.

Use these rates and costs as a guide in determining custom rates. Actual custom rates will be determined through the supply and demand for services within localized markets and can vary substantially.

On the Web:

Kentucky Custom Rate Guide –

<http://www.ca.uky.edu/cmsspubsclass/files/extensionpubs/departmentseries/2009-04.pdf>

Iowa State Custom rate Guide –

<http://www.extension.iastate.edu/agdm/crops/pdf/a3-10.pdf>

UT Budgets - <http://economics.ag.utk.edu/budgets.html>

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