

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 22

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

Bookmarks: [Cotton progress](#) [Insect control](#) [Farm management](#) [Moth traps](#)

Reminder: Cotton Research Tour and Wheat Production Conference, September 3rd, West Tennessee Research and Education Center, 605 Airways Blvd. Registration begins at 8:30 am, and the cotton tour begins at 9:00 am. [Link here for more information](#)

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

The Tennessee Agricultural Statistics Service reports cotton condition as 7% excellent, 52% good, 33% fair, 8% poor, and 0% very poor. Having observed numerous cotton fields over the last week several things have become evident. Yield potential is highly variable, but much of the crop has excellent boll retention. Potassium deficiency is showing up in many fields, mainly due to the excellent boll load and high potassium demand of the crop at this point in the season. The cool day and night time temperatures have slowed crop maturity progress.

Turning thoughts to upcoming defoliation programs, fields with excellent yield potential that have canopies that have closed the rows may benefit from a two pass defoliation program. Aim, ET, or Ginstar at low rates mixed with some ethephon will do a good job of removing top-growth and opening some bolls. A follow up application of Finish Pro 6, Firstpick, or Def/Folex + ethephon will remove the mature bottom- leaves and finish opening bolls. Fields with lower yield potential or that have open row middles should use a one-pass defoliation program. Ginstar, Finish Pro 6, Firstpick can be used as stand-alone products. Def/Folex, Aim, ET, or Dropp should be tank-mixed with ethephon to get both defoliation and boll opening. Defoliation demonstrations will be coming to a field near you soon. Watch for dates and locations in upcoming newsletters.

DD60 Accumulation after cutout date (TASS and NWS data)

Location	8/1- 8/21	8/7- 8/21	8/14- 8/21
Dyersburg	365	222	121
Fayetteville	392	252	145
Jackson	363	220	121
Memphis	422	262	146

Season long DD60 Accumulation (TASS and NWS data)

Location	4/20- 8/21	4/27- 8/21	5/4- 8/21	5/11- 8/21	5/18- 8/21	5/25- 8/21	6/1- 8/21
Dyersburg	1904	1859	1836	1799	1780	1700	1588
Fayetteville	1943	1886	1855	1801	1783	1703	1597
Jackson	1830	1783	1761	1718	1697	1629	1524
Memphis	2168	2099	2073	2014	1978	1882	1756

Insect Management (Scott Stewart, Extension IPM Specialist).

Cotton. I won't touch on cotton much after this point because I would estimate that 70% of the cotton crop could be "cut loose" after this week. There have been a few calls about bollworms and stink bugs in cotton. Both of these critters will concentrate on the remaining 30% of the crop that is relatively late or green (including irrigated cotton). These fields will also be the most susceptible to injury, and scouts should concentrate most of their efforts here. Fields that have not reached NAWF5 + 400DD60s may still require treatment for either pest. Two consultants have reported an increase in bollworm eggs in Haywood and Fayette counties.

There have also been a couple of calls about fall armyworm being found in relatively late cotton under a pivot. This is a likely place to find this critter. I also saw a late maturing field that needed treatment for fall armyworm. These fields have been in the Mississippi River bottoms, but any late maturing cotton could be at risk. Pay special attention to Bollgard or non-Bt fields. Bollgard II will hold up better to fall armyworms, although it is possible treatment could be needed. It is unlikely that fields of WideStrike would require treatment. Insecticide applications should be considered if four or more larvae are found in 100 blooms (including pink blooms) and/or bolls. When sampling, try to look at a mixture of mid-sized bolls (looking carefully behind the bracts) and in pink and white blooms. An alternative threshold is 10-20 larvae per 100 plants. Use the same threshold in Bollgard II but do not count small larvae (<1/4 inch long). Diamond at 6-8 oz/acre is probably the best single treatment for fall armyworm. However, bollworms and stink bugs are also likely problems in these same fields, so I typically recommend a mid rate pyrethroid insecticide plus Diamond (4 oz/acre). Another decent tank mix for this complex would be a pyrethroid plus Orthene (acephate) at 0.5 lb/acre.



Having done some driving around the state, be aware that spider mites is one pest we need to be careful of until the crop is closer to defoliation. If you know mites are in a field, you should continue to monitor populations until NAWF5 + 600-700 DD60s and treat accordingly. I've seen a number of fields with premature defoliation. One field was completely infested at one time, and I estimate 25% yield loss (50%⁺ in the bad spots). Not taking spider mites seriously can be costly. They can substantially reduce yields, particularly in fields with water stress. From a distance, mite injury will show up as yellowish or reddish spots in a field. However,



nutrient stress and plant maturation may look similar from a distance. Now would be a good time to walk some fields and get a sense how bad spider mites hit you.

Soybeans. Stink bugs and other pest populations are generally low in most fields, but there are scattered reports of fields needing treatment. The threecornered alfalfa hopper is one exception and is common in many fields. The traditional threshold for this pest is one per sweep. I have been a little more aggressive considering the good bean prices, suggesting a threshold of 70/100 sweeps, but using the old threshold may be appropriate if few other pests are in a field. Once you hit R6, I suggest using the traditional threshold (1/sweep), and once fields start turning color, treatment is unlikely to improve yields. Continue to monitor fields every seven days. Your sweep net counts may include stink bugs, threecornered alfalfa hoppers, bean leaf beetle, bollworm larvae, and defoliating caterpillars (green cloverworms and loopers). Other defoliating pests such as blister beetles are also present in some fields. You should estimate percent defoliation, keeping in mind that insecticide applications are recommended if 20% or more defoliation has occurred. Percent defoliation should be estimated across the entire canopy (not just the top leaves). Most people tend to over estimate defoliation. There are pictures of leaves with different levels of defoliation available on-line in UT's insect control recommendations for soybeans: http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/pubs/PB1768-Soybean.pdf. Insecticide recommendations are also available at this same web site. In many cases you will see a rate range, but the mid rate is usually the standard and recommended in most circumstances. Remember, the most expensive insecticide application is the one that does not work. It is far more expensive to get unsatisfactory control and have to make another insecticide application than to start with a dependable rate.

I encourage growers to scout and treat stink bugs or other pests as indicated by sampling and using recommended treatment thresholds. Treating populations that are well below threshold is not cost effective. It is generally untrue, for example, that treating stink bugs at R3 will prevent spraying later. Stink bugs often move into soybean fields after R3, especially in later maturing fields. If you read the MSU newsletter last week, they showed some interesting data where large blocks of soybean were being sprayed at different times (including an automatic application at R3). Their data clearly showed that stink bug populations were the similar at R5, regardless of whether a field had been previously treated or not.



Pictured: immature green stink bug

So what if you do need to make an insecticide application at R3? Late beans often require more than one insecticide application for control of stink bugs, loopers and other pests. Don't get caught up in harvesting other crops and forget about the late beans. This can be a costly mistake for fields with good yield potential. Perhaps the biggest danger to the R3 "automatic" application is thinking you are finished with insect control and then ignoring the crop.

Corn: I just wanted to point out the very large numbers of southwestern corn borer moths being caught in some areas. This is the third generation and will be of no consequence to corn unless there are some extremely late non-Bt fields. However, this does indicate that there was a successful second generation in at least some fields. Check any non-Bt fields closely for evidence of stalk tunneling. Try to harvest infested fields first to minimize potential losses from lodging or ear drop. Chuck Danehower has made some comments that are relevant to harvesting corn early (see below).

Area Report for Northwest Tennessee (Gene Miles, Area Crop Specialist)

Cotton: Rainfall is still very much needed in the area to help crops increase yields. Private consultants are reporting some fields this week that have reached the point where yield contributing bolls are beyond the point where economic losses from bollworm/budworm, stink bugs and tarnished plant bugs are likely to occur. More mature plants monitored this week are averaging 66% first position fruit retention. Potash deficiency is being observed in thinner and/or droughty soil types this week which can be noted by interveinal chlorosis (yellowing) on leaves which can change to a bronze color. Private consultants and U.T. Extension IPM scouts are reporting plant bug numbers ranging up to 4.2 per 6 row feet and/or 27/100 sweeps. Bollworm/budworm damage this week reported from IPM scouts and private consultants includes 4% eggs, 1 worm/100 terminals and 8% fruit (squares, blooms and bolls) damage in Bt cotton. Damage in conventional cotton this week includes 6 worms/100 terminals and 10% fruit damage. Stink bug numbers this week range up to 1.5 per 6 row feet. The high beneficial count this week is 12.6/6 row feet.

Sorghum: Sorghum webworm numbers in grain sorghum are averaging 1 per head. When determining thresholds, 3 sorghum webworms can be equivalent to 1 corn earworm or 1 fall armyworm.

At this time, I would personally like to thank producers, U.T. Extension personnel, county IPM scouts, agricultural industry personnel and private consultants for their contributions to my portion of the IPM letter this season.

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

I have had several questions this week on the economics of harvesting high moisture corn. Specific questions have been at what moisture level should I start corn harvest? It depends on each individual producer's situation. Data generated in Tennessee on what moisture level to harvest corn has been inconclusive. Some fields and varieties had less field loss when harvested at higher moisture compared to harvesting around 15% moisture. Combine efficiencies may have improved enough to where there are not the field losses we had 20 years ago. Before and during harvest, check combine adjustments to keep efficiencies high.

The decision on what moisture level to harvest corn depends on several factors such as:

Acres of corn as well as other crops to combine? If you have more acres of crop than you can combine, you may have to harvest at higher moisture or have some custom combined. If you are planning on planting wheat behind corn, factor that in the decision. **Are you drying your corn down or hauling straight to the elevator?** David Reinbott with University of Missouri Extension uses these rules of thumb to use in calculating drying costs for corn:

- Fuel - .02 gallons of LP for each 1% of moisture removed X price of LP Gas/gallon X points of water removed.
- Electricity to run motors and other equipment: 1 – 5 cents/bushel.
- Cost of extra handling and transportation: 5 cents per bushel.

For example to harvest 22% moisture corn and dry to 15% with LP gas at \$3.25 gallon.

Fuel: $.02 \times \$3.25 \text{ LP gas/gallon} \times 7 \text{ points of moisture (22\% to 15\%)} = 45.5 \text{ cents per bushel.}$
Electricity = 3.0 cents/bu. Cost of handling and transportation = 5.0 cents/bu. The total variable costs would be 53.5 cents per bushel. Moisture dock for the same corn at an elevator would be around 70 cents per bushel depending on the moisture discount method.

If you have your own drier, harvesting in the low 20% and drying down to 15% can be economical when compared to hauling wet corn to the elevator and taking the moisture dock. Some driers may be more efficient and take .01 gallons of LP gas for each 1% of moisture removed.

Can I reduce field loss by harvesting at higher moisture? Field loss can be reduced, but is it enough to offset the drying costs. An example based on a 125 bu/acre corn yield would have a drying cost of 30.75 cents/bu. to 53.5 cents/bu. to dry from 22% to 15%. On an acre basis that would cost \$38.44 - \$66.88 and would need to reduce field loss by 6.98 – 12.15 bushels per acre at \$5.50 corn. Please note the lower drying cost is calculated using the more efficient drier.

Standability of the corn. If corn borers are present, Bt corn will have better stalk strength and be able to sustain harvest time rain/wind events. Inspect your corn field and look for corn borer damage, disease damage, poor root system, and heavy ear in relation to stalk. Splitting the stalk and looking inside will tell you if you're likely to have standability problems. These are issues that could cause your corn to go down and make a field a candidate for harvesting at higher moisture. This time of year, there is always the threat of excessive rainfall from a Hurricane in the Gulf. If that is a concern, you may want to harvest at higher moisture.

If I can answer additional questions, please give me a call at 731-635-9551 or drop me an email at scdanehower@utk.edu. Also, check out David Reinbott's website at <http://extension.missouri.edu/sereion/fmmkt.htm>.

Tennessee Pheromone Moth Trapping Summary - Trapping efforts are funded in large part by the Tennessee Cotton Incorporated State Support Program. Some County Extension Agents are also reporting additional trap counts for SWCB moths at corn variety test locations. Thanks to them and Bob Williams for these data.

Numbers of Moths per Week (Week 16, Ending 8/19/08)

Trap Location	Tobacco Budworm	Corn Earworm (Bollworm)	Beet Armyworm	Trap Location	Southwestern Corn Borer
Hardeman (Bolivar)	2	3	0	Fayette (Whiteville)	0
Fayette (Whiteville)	0	3	---	Tipton (Covington)	0
Fayette (Somerville)	3	4	0	Madison (Exp. Stn.)	230
Shelby (Millington)	2	3	0	Gibson (Exp. Stn.)	43
Tipton (Covington)	13	88	---	Dyer (Newbern)	28
Tipton (North)	4	0		Dyer (Samaria Rd)	1,500
Haywood (West)	12	5	0	Dyer (Fuller Rd)	311
Haywood (Brownsville)	4	0	0	Dyer (Welch Rd)	691
Madison (North)	4	0	---	Weakley (South)	428
Madison (Exp. Stn.)	12	32	8	Weakley (North)	3,000
Crockett (Alamo)	0	8	0		
Crockett (Maury City)	15	43	8		
Dyer (Bogota)	0	15	2		
Dyer (Newbern)	0	45	---		
Lake (Ridgley)	19	223	44		
Gibson (Kenton)	1	135	0		
Gibson (Exp. Stn.)	3	8	0		
Carroll (West)	4	65	3		
Lauderdale (Goldust)	0	28	32		
Total	98	708			

An asterisk (*) indicates trap was missing or knocked down.

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