

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 25

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Cotton Progress Report (Chris Main, Extension Cotton and Small Grains Specialist)

The Tennessee agricultural statistics agency reports that 53% of the crop has open bolls compared to 20% last week, 11% last year, and well ahead of the 5 year average of 14%. Cotton condition is rated as 6% very poor, 24% poor, 39% fair, 25% good and 6% excellent.

Defoliation. The topic of the week again has been defoliation. What is working, what is sticking leaves? My recommendation is still to choose hormonal type products (Dropp, Freefall, Firstpick, and Finish). The addition of ethephon (Prep, Superboll, etc.) will help get bolls open and aid in leaf removal. I would base my ethephon rate on the height and foliage density of plants in each field. I have been using 1-1.5 pints per acre. Some producers I have talked are going with as much as 2 pints per acre in irrigated cotton. I still would strongly consider using a product containing thidiazuron (Dropp, Freefall, etc) to help prevent re-growth in case of rain. If you decide to use a herbicidal defoliant (Def, Aim, Blizzard, ET, or Resource) use the lowest labeled rate to help prevent leaf stick. Some producers are using Def/Folex at 4.0 oz/acre with 1.5-2.0 pints of Prep. I realize this is an economical treatment but it has been inconsistent at removing the 'leathery' leaves and will not provide re-growth suppression. If you choose to go this route don't get too far ahead of the picker while spraying defoliants because a good rain shower could result in a green stalk.

I again include the replant intervals for small grains following different defoliants. Most of us will be limited in planting small grains to 30 days after defoliation since most everyone uses ethephon. This restriction should not pose a problem this year with our early cotton crop. Also, remember where you used Direx or Layby Pro (diuron) as a layby treatment. It may still be in the soil and will kill small grains.

Label Restrictions for Planting Small Grains Following Application as a Harvest Aids in Cotton

Def/Folex	None
Thidiazuron	14 days
Harvade	6 months
Ginstar	1 month
Leafless	6 months
Aim	None
ET	None
Blizzard	None
Resource	30 days
Prep/SuperBoll, others	30 days
FirstPick	30 days
Finish	1 month
Glyphosate	None
Sodium Chlorate	None
Paraquat	None

DD 60 Accumulation (TASS and NWS data). For each location Accumulated DD60's are calculated starting with six different planting dates up to the date of the newsletter release. For example 4/20-8/1 would indicate DD60's accumulated for cotton planted on April 20 up to August 1.

DD60 Accumulation since Planting.

Location	4/20-8/29	4/27-8/29	5/4-8/29	5/11-8/29	5/18-8/29	5/25-8/29
Brownsville	2297	2249	2197	2126	2024	1979
Dyersburg	2345	2296	2240	2135	2060	2001
Fayetteville	2410	2363	2300	2211	2133	2064
Memphis	2757	2717	2621	2500	2410	2325
Milan	2180	2133	2081	1979	1909	1867

DD60 Accumulation since Cutout (NAWF=5).

Location	8/1-8/29	8/8-8/29	8/15-8/29
Brownsville	722	547	366
Dyersburg	709	527	341
Fayetteville	733	552	361
Memphis	804	614	395
Milan	682	515	345

Insect Issues (Scott Stewart, IPM Specialist)

There is very little to report on this week. I had to check if the phone company turned off my service. We have seen and heard about a few soybean fields with treatment-level numbers of stink bugs (= 9+ per 25 sweeps). Predictably, these stink bugs are often in the greener (sometimes irrigated) fields that have been less affected by the drought. Overall pest pressure remains below threshold in most fields.

Area Report for Northwest Tennessee (Gene Miles, Area Crop Specialist, 731-286-7821).

Cotton: Some welcome rains have settled the dust in some areas, but the overall condition remains hot and dry. Producers are evaluating fields for defoliation in the area. Private consultants are reporting essentially all fields are mature enough for insecticide termination. They also reported up to 6 plant bugs per 6 row feet in irrigated cotton. Cotton scouting by Dyer and Lauderdale county IPM scouts ended last week.

Soybeans: Last week, green cloverworm numbers were being reported in some fields at 80/100 sweeps (threshold considered to be 150/100 sweeps) and corn earworm numbers ranged up to 3/100 sweeps, which is well below the threshold of 60/100 sweeps.

At this time, I would 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 for this season.

Estimating Soybean Yields before Harvest (Angela Thompson, Corn and Soybean Specialist).

Double-crop soybeans and fields in severely drought stressed areas are at very high risk for significant crop loss. Producers should contact their crop insurance representative to determine options in case of a crop failure. It may be helpful to estimate seed yield of the standing crop to determine yield potential before deciding whether to bale for hay or leave standing in the field. It is best to estimate yield in at least 5 locations in the field that are representative of the stand and field conditions.

Step 1. Estimate plants per acre. These lengths are equal to 1/1000th of an acre. Count plants in one row and multiply by 1000.

- 7 inch row= number plants in 74 feet 8 inches
- 7.5 inch row= number of plants in 69 feet 8 inches
- 15 inch row= number of plants in 34 feet 10 inches
- 30 inch row= number of plants in 17 feet 5 inches

Step 2. Estimate pods per plant. Count pods with seed on each plant for 10 consecutive plants in one row, regardless of plant size. Determine average number of pods per plant.

Step 3. Estimate seeds per pod. Healthy soybean plants will average about 2.5 seeds per pod. For plants under stress, the seeds per pod could drop to 2, 1.5 or even less under high stress situations. (You can make your estimate of seeds per pod from same plants counted in Step 2).

Step 4. Estimate seeds per pound (seed size). 2,500 seeds per pound is a good average value. If seeds size is consistently very small, may want to use a value of 2,800 to 3,000 seeds per pound instead.

Step 5. Calculate bushels/acre: (Avg. # plants/acre) x (Avg. # pods per plant) x (Avg. # seeds per pod) divided by (seeds per pound) divided by (60 pounds per bushel of soybeans) = bushels per acre

Example: 125,000 plant population x 32 pods per plant x 1.5 seed per pod/ 3000 seeds per pound/ 60 lbs per bushel= 33.33 bushels per acre

Baling Soybean for Hay - Revisited by Request

In light of drought conditions and the general shortage of hay, producers in some areas are cutting soybeans for hay. Soybeans that would make a good candidate for hay are those that are tall and still retaining most leaves. Below are some considerations when baling soybeans for hay.

1. Stage of harvest has minimum impact on feed value. R3-R6 is where you will maximize quality and quantity. Earlier growth stages will not affect protein and TDN content much but will have more digestible fiber, because stems are not as tough.
2. Yield will depend on how thick beans are planted and how tall plants are at cutting and that can be all over the board. I know of no information indicating yield. The trick with soybeans is capturing leaves, because this is where the nutrients are.
3. Harvest with a conditioning mower that will crimp the stem and break the joints. If you use a tedder, you will beat the leaves off and you will end up with poor quality stem hay. Capturing the leaves is the trick, and it can be tricky to make high quality hay -- too wet and it will mold and rot -- too dry and you lose a lot of leaf. A good conditioner that breaks the stem to allow the moisture to escape is essential. If hay gets a little dry, try baling at night when it may come back in case. Don't over dry the soybean hay!! Some growers are cutting and drying on the first day and baling the second day to retain enough moisture to keep leaves in the bale.

4. If utilizing a lot of beans for hay, producers may want to look at a hay preservative which will help reduce mold growth.
5. Finally, do not expect this hay to keep well outside and uncovered, the stems make for a very porous bale.

With some soybean growers exploring the possibility of cutting and baling late planted soybeans rather than harvest them for grain. ***Feeding restrictions for some commonly used soybean pesticides need to be considered if baled soybeans are to be fed to livestock.*** Fortunately, two frequently used herbicides on soybeans in Tennessee, Roundup OriginalMax and FirstRate, only have a 14 day waiting period before treated soybeans can be fed to livestock. Soybeans sprayed with the fungicide Headline can be fed for hay in as little as 21 days after application, and there is no waiting period for Quadris treated soybeans. Unfortunately, many commonly used insecticides, which are often applied with fungicides, do not allow for subsequent feeding of soybean as forage or hay. Forage, feeding and grazing restrictions for some commonly used pesticides in soybeans are listed in Table 1.

There are several sources of information about pesticide restrictions related to feeding crops as forage or hay. These include the UT Extension [Weed Control Manual](#) and the [Insect Control Recommendations for Field Crops](#). However, the ultimate source of restrictions for using crops as feed for livestock is the pesticide label. Most labels can be accessed on-line via the [CDMS Agro-chemical Database](#).

Table 1. Feeding and grazing restrictions for common soybean pesticides

Pesticide type	Trade name	Restriction	
Herbicide	Classic	Do not feed	
	FirstRate	14 days	
	Flexstar/Reflex	Do not feed	
	Fusilade	Do not feed	
	Poast	Do not feed	
	Roundup OriginalMax	14 days	
	Roundup WeatherMax	14 days	
	Select	Do not feed	
	Sequence (Dual Magnum + glyphosate)	30 days	
	Synchrony XP	Do not feed	
	Touchdown Total	25 days	
	Valor	Do not feed	
Fungicides	Quadris	0 days	
	Headline	21 days	
Insecticides	Acephate	14 days	
	Baythroid XL	15 days for green forage; 45 days for feeding vines	
	Intrepid	7 days	
	Karate	Do not feed	
	Larvin	Do not feed	
	Methyl parathion	20 days	
	Mustang Max	Do not feed	
	Tracer	Do not feed	

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

Harvest aid treatments are starting to go out as the effects of the dry weather are causing cotton to open quickly. Plan your harvest aid treatments based on the condition of your cotton as well as your picker capacity. If appears the cotton opening now will probably get by with a one shot application. When it does rain, that may change as re-growth may start to occur. When planning your treatments, keep in mind that if needed a second application will be cheaper than picking cotton a second time. Although, we certainly want to pick all the cotton in the field, a second picking is generally not feasible.

Let’s review second picking costs. Below are second picking tables depending on the whether a 4 row picker or 6-row picker is used. Included are the costs for the accompanying module builder, and boll buggy. When making a decision on whether to second pick it is important to examine the variable or cash costs of repairs, diesel, and labor. The fixed or ownership cost of equipment although important, is not as critical to recover as the variable or cash cost. From the table below, a 4 row picker picking at 4 mph would incur variable cost of \$45.38 per acre. To just recover that cost, a producer would need to pick 83 lbs. of cotton at \$.55 lb. That is about one bale to 6 acres. A 6 row picker at 4 mph would have variable cost of \$37.34 and it would take 68 lbs. per acre or one bale to 7 acres to recover its cost. Cost per acre will vary with the speed of the picker.

Instead of asking the cost of second picking the appropriate question may be *Will it be more economical to apply a second harvest aid treatment rather than second pick my crop?* If that second treatment can get the majority of the crop open and available to pick and is cheaper than the second picking cost, then the answer is yes. Note that the second defoliation/boll opening treatment including application cost would need to be less than \$45.38 for a 4 row system and \$37.34 for a 6 row system at the above speeds. Use the tables below in helping you make that decision. If I can assist you, please give me a call.

**2006
Second Picking of Cotton**

4 Row Cotton Picker Picker Speed (MPH)	Pounds of Cotton Lint/Acre To Breakeven Over Variable Cost		
	3	4	5
Variable Cost per Acre (a)	\$60.52	\$45.38	\$36.31
Price (\$) Lint/Lb.		Lbs./Acre	
0.45	134	101	81
0.50	121	91	73
0.55	110	83	66
0.60	101	76	61

(a) Includes variable cost for 4 row cotton picker, boll buggy, and module builder. Please note that if Fixed Cost (depreciation ,interest) were included lbs/acre would be doubled. Need to at least cover variable costs (fuel, repairs, labor). For share rented ground, take pounds per acre X [1 + share rent]. Ex. 1/4 rent, 0.50 cotton at 4 MPH = 90 X 1.25 = 114 lbs. to breakeven over variable costs. Diesel fuel cost is based on \$2.30 gallon.

**2006
Second Picking of Cotton**

**Pounds of Cotton Lint/Acre
To Breakeven Over Variable Cost**

6 Row Cotton Picker Picker Speed (MPH)	3	4	5
Variable Cost per Acre (a)	\$49.79	\$37.34	\$29.88
Price (\$/Lint/Lb.		Lbs./Acre	
0.45	111	83	66
0.50	100	75	60
0.55	91	68	54
0.60	83	62	50

(a) Includes variable cost for 6 row cotton picker, boll buggy, and module builder. Please note that if Fixed Cost (depreciation ,interest) were included lbs/acre would be doubled. Need to at least cover variable costs (fuel, repairs, labor). For share rented ground, take pounds per acre X [1 + share rent]. Ex. 1/4 rent, 0.50 cotton at 4 MPH = 75 X 1.25 = 94 lbs. to breakeven over variable costs. Diesel fuel cost is based on \$2.30 gallon.

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