The University of Tennessee

UT Extension

West TN Research and Education Center
605 Airways Boulevard
Jackson, TN 38301

IPM NEWSLETTER

Update for Field Crops and Their Pests

No. 23 *September 4, 2009*

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

Bookmarks: Cotton situation Insect stuff Farm management

Announcement --- Look at Them Beans

UT Extension and The Research and Education Center at Milan will be hosting a really good **soybean disease, insect and weed** field at Milan, TN on **Wednesday, Sept. 9-09 starting at 8:00 AM till 12:00 noon**. **Registration begins at 7:30 AM (free).** CCA and Pesticide Recertification Points will be available.

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

The Tennessee Agricultural Statistics Service reports cotton condition as 24% excellent, 55% good, 20% fair, 1% poor, and 0% very poor. 8% of the crop has open bolls compared to <1% last week, 10% last year and 26% for the five year average.

Harvest Aid Publications:
Cotton Defoliation Timing
Cotton Harvest Aids

Topics of conservation this week have centered around when to stop irrigation of cotton. Conventional wisdom bases irrigation termination on the appearance of the first cracked bolls. The logic behind this approach is to not cause problems with open bolls by exposing them to moisture (weathering, boll rot, etc.). In some June 1st planted cotton we are just now reaching 'cutout' or NAWF=5. Unless we have an extended fall with warm temperatures the likely hood of white flower making a harvestable boll on 9/1 is less than 5%. Since cotton is a perennial plant, stress is needed to aid in senescence (maturity and leaf loss). Essentially the crop needs to 'dry out' so maturation can begin. Most fields have not endured much stress (wilting due to lack of water) this year and continuing to water will keep the plant lush later into the season leading to excessive vegetative growth, boll rot, and possible defoliation issues we get an early frost. Turning off the irrigation now should not adversely affect yield and will help mature the bolls that are already there.

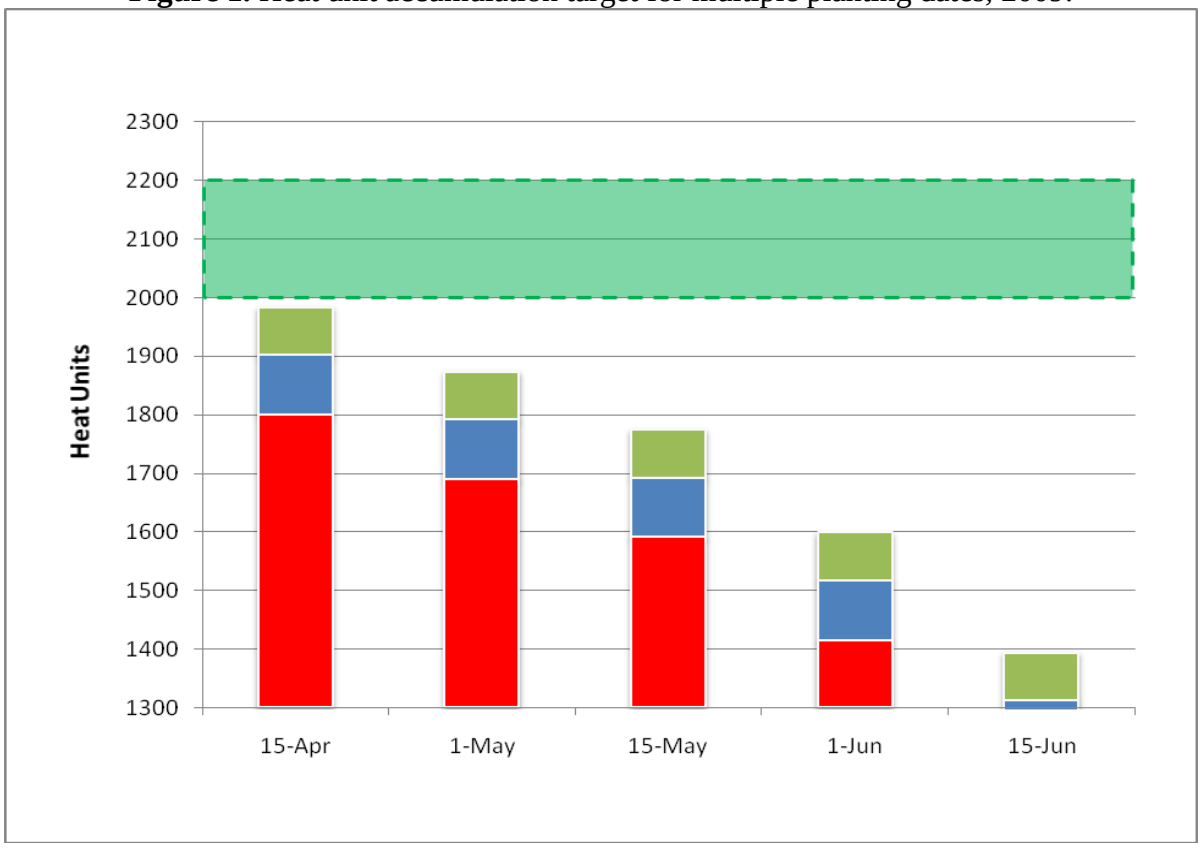
Frost Probabilities: Table 1 below indicates the probability of the first frost in Tennessee. Essentially we have a 50% chance getting to mid-October without a frost. Please keep this in mind when making harvest aid management decisions. Keep a close watch on the 10 day weather forecast as we near the end of September. The old rule of thumb is to begin defoliating by October 1st. I am well aware that some of our crop will need several days past October 1st to fully mature. The best advice I can give is to terminate the crop with defoliant and boll opener 5-7 days ahead of an expect frost/freeze event. Remember that if frost occurs the leaves will be stuck and unopened bolls will not open due the tissue being killed before ethylene can form to abscise leafs or open bolls.

Table1. First frost probability dates for cotton growing regions of Tennessee.

	Probability of a Frost		
Location	*10%*	*50%*	*90%*
Bolivar	10/2	10/14	10/26
Brownsville	10/7	10/21	11/4
Dyersburg	10/4	10/21	11/07
Fayetteville	9/28	10/9	10/19
Huntingdon	9/29	10/13	10/26
Jackson	10/1	10/14	10/27
Milan	9/27	10/8	10/19
Murfreesboro	9/29	10/12	10/25
Ripley	10/9	10/15	10/27
Savannah	10/3	10/15	10/27
Union City	9/30	10/12	10/23

Figure 1 tracks milestones in heat unit accumulation. The green box represents the target heat unit accumulation for this year's crop to mature. Red segment represents accumulation up to 8/20, blue bar segments represents accumulation from 8/21-8/27, and green bar segments represents 8/28-9/3.

Figure 1. Heat unit accumulation target for multiple planting dates, 2009.



Insect Considerations (Scott Stewart, IPM Specialist)

Cotton. For the most part it is game over. There is still some possible need to treat late cotton for pests like fall armyworms or spider mites. However, it doesn't appear that any of these critters are out there in threatening numbers.

Soybean. It is NOT game over for managing insects in late maturing soybeans. It is sometimes hard to convince folks that spraying insect pests throughout September is a real possibility. Stink bugs and soybean loopers are far more likely problems in late maturing soybeans, and this year our late maturing crop has above average yield potential. Insecticides applications can be justified until R7. A common excuse for not spraying is "I don't want to run over the beans." Dr. McClure shared some information in a newsletter last year, and tire tracks can cause 0.5 - 3 bushels/acre of injury depending on row spacing, the stage of the crop and the size of your spray rig. However, treatment level populations will typically cause more yield loss than this. This is a scenario where aerial application can pay for itself by reducing mechanical damage to the crop.

Hatching green stink bugs

Corn earworms (bollworms) are still a possibility is late soybean fields that are currently between R2-R5. Pay particular attention to the latest fields and especially if the canopy is relatively open. There are probably as many corn earworm moths out there now than at any other time in the season.

Soybean aphids are present in high numbers in some fields in Middle Tennessee (e.g., Cannon and Coffee Counties and probably elsewhere). Populations exceeding an average 100 aphids per leaf are present in some fields. Average populations easily exceeded 2,000-3,000 aphids per plant in several fields.

The soybean aphid was introduced from Asia into the upper Midwest around 2000. It has been found in Tennessee pretty much annually since 2004. Thus far, treatment level infestations have been rare and confined to late maturing fields in Middle Tennessee. However, some fields observed this week were at R5.5 and had obviously been infested with a substantial population of aphids for several weeks.

Although Tennessee does not have much experience with soybean aphid, there are some things we do know. 1) Soybean aphids can cause yield loss when present in high numbers, 2) infestations that start early tend to cause more yield loss than those occurring after R5, and 3) they are relatively easy to kill

with insecticides. This means we should pay special attention to those fields that are not yet at R5. Most of the Midwestern states use a threshold of 250 aphids per plant (not per leaf) anytime from V5-R5. It is doubtful that 250 aphids per plant cause yield loss, but of course aphid populations often increase rapidly. My best guess recommendation is to spray any aphid infestations where soybeans are not yet at R5 and populations exceed 25 aphids per leaf. Aphids should be easily found on the undersides of leaves at this level, and honeydew will be accumulating on some leaves in the field. Insecticides specifically listing aphids on their label include Brigade, Hero, Lorsban, Prolex, Karate/Warrior, Mustang Max. I would expect all to provide good control.

Pasture. Just a heads up that we are having another flush of fall armyworm. You should treat with insecticides anytime that populations reach or exceed 3-4 larvae per square foot. An alternative is to cut the field if it is close harvest. Recommended insecticides and grazing restrictions are available on line at http://www.utextension.utk.edu/fieldCrops/cotton/cotton_insects/pubs/PB1768-Pasture.pdf.

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

While attending the Cotton and Wheat meeting this week, I had a few questions on the projected crop returns I listed in the previous IPM Newsletter. Several producers wanted to look at the returns under irrigation, particularly how wheat and double crop soybeans stack up. On the average, I generally use the following increased yields from irrigation – 16 -18 bushels for soybeans, 46 bushels for corn and 225 pounds per acre for cotton. These again are reported averages with many producers achieving better yields, but some probably not as good. Another average cost I use is $35 per acre for irrigation variable cost to water the crop. This year should be quite a bit less than $35, but other years have been more. Those costs are included in variable costs. I would encourage producers with irrigation to plug their own numbers in and see how their crops would look. In this partial budget, I am not using the irrigation fixed cost as I am assuming the producer already has the irrigation system.

2010 Projected Per Acre Irrigated Returns

	Wheat/Soybeans	Corn	Cotton	Soybeans (Full Season)
Yield	58 bu./44 bu.	170 bu.	1116 lbs.	56 bu.
Price	$4.25/$8.50 bu.	$3.25 bu.	$0.62 lb.	$8.50 bu.
Revenue	$621	$553	$692	$476
Variable Cost	$405	$377	$480	$269
Returns over Variable Cost	$215	$ 176	$212	$207
Land Costs (25%)	$149	$ 134	$168	$116
Returns over Variable and Land Costs	$ 66	$ 42	$ 44	$ 91

Wheat and double crop soybeans might fit in well for a producer with irrigation. In the above scenario, wheat/soybeans, cotton and full season soybeans return about the same for producers on owned or cash rent ground. Producers on a straight 25% share rent would fare better with full season soybeans then wheat/soybeans. I would note that it is about 3 bushels of soybeans difference between the two. Crop rotation and diversification are also important with irrigation and may be the deciding factor in crop selection.

There are many variables in crop budgeting and selection, but the best budgets are based on a producers own information and cropping systems. If we can assist you in developing your own budget or cash flow plan, contact your County Extension office or call the MANAGEment Information Line at 1-800-345-0561.

Scott D. Stewart (editor)
Extension IPM Specialist