



Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
Altus, OK



August 21, 2012

Volume 2 Edition 11

Crop Update

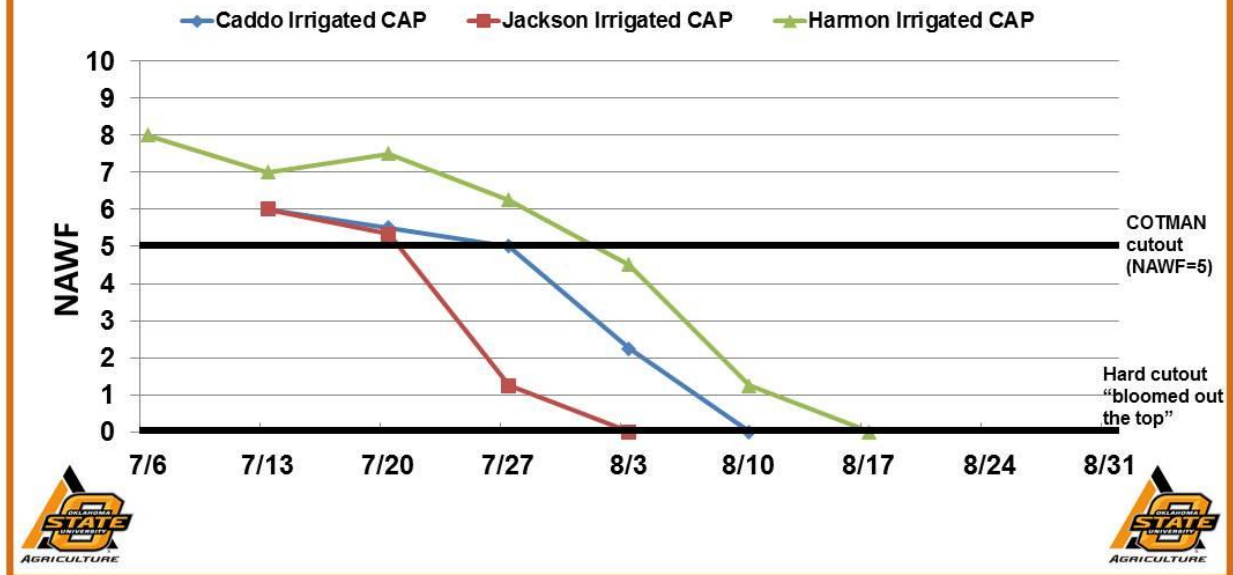
Drought continues to take its toll on the 2012 cotton crop. Significant chances of rainfall were forecasted over the past weekend, but little if any materialized over much of the cotton growing area. Based on Mesonet data, some parts of Caddo County picked up some beneficial rainfall. Chances of badly needed precipitation continue for the next few days. As of this writing, significant rainfall was obtained today in some parts of Harmon County. Triple digit heat has finally disappeared from the forecast and a few rain chances are still noted for several days for the next week. Based on 30-year “normal” temperatures, we have passed the date (around August 10th) when high temperatures have peaked and begin to decline.

Results from IPM Extension Assistant Jerry Goodson’s monitoring of 25 program fields indicate that as of this week, all have encountered “hard cutout” (bloomed through the terminal). Recall that the “Jackson County irrigated” sites (in the Lugert-Altus Irrigation District) were actually “dryland” as no water was available this year. Many irrigated fields had a bloom period of about 4 weeks (see nodes above white flower graph below). Dryland fields crashed rapidly toward hard cutout. This indicates that for many locations, yields will be disappointing. For results from selected sites, see below.

Insect Update

Scouting observations and consultant conversations indicate very little insect pest activity at this time. Regardless of cotton pest activity, with respect to insecticide applications for most pests, we are rapidly approaching 350 heat units past nodes above white flower = 5. The 350 heat units past NAWF=5 threshold indicates that harvestable bolls in many locations are sufficiently mature and typically do not need additional protection.

2012 NAWF CAP Plot Surveys



Using COTMAN Concepts

We are rapidly approaching the latest possible cutout dates when considering the Bollman component of COTMAN. COTMAN is a cotton management program developed with Cotton Incorporated Core funding. This funding supported cooperative research conducted by several land-grant institutions across the Cotton Belt. **This program assumes that 850 cotton heat units past blooming are necessary to produce a reasonably mature boll.**

When using 60 degrees (F) as the developmental threshold, cotton heat units (also called DD60 heat units) are defined as:

$\frac{\text{daily high temperature} + \text{daily low temperature}}{2} - 60 = \text{daily cotton heat units}$

average temperature – 60 = daily cotton heat units

The accumulation of heat units from a certain date can provide useful information. The COTMAN latest possible cutout date is defined as the last date on which 850 heat units can be obtained before daily heat units diminish to zero because of cool temperatures. Long-term weather data are used to compute this and two probabilities or risk levels are

provided. The first is the date at which in 85% of the years, in the long-term weather data set submitted, that 850 heat units past bloom could be obtained. The second is the date at which 850 heat units past bloom could be obtained in 50% of the years. The COTMAN team at the University of Arkansas computed the 50% probability date to be August 20th for the 1948-2007 time period. The 85% probability date for Altus was August 13th. Therefore, one can see that the window for setting bolls is closing in the area.

The 2012 growing season has provided an abbreviated blooming period in many fields because of heat and moisture stress (few nodes above white flower at first bloom). Exceptions to this would be irrigated fields with high irrigation capacity and highly efficient delivery systems. Cotton maturity has been accelerated and the bloom period for some fields will be reduced by up to 2 weeks or so compared to more normal years. Once a cotton field blooms in the top (or the terminal) nearly all of the possible yield potential is set. Even if substantial rainfall occurs soon in “hard cutout” fields, the cotton will take some time to recover and to initiate another round of mainstem node production in the terminal and new squares. These new squares would take about 20 days or so to produce a bloom. This indicates that any new flower production would be well beyond the Altus COTMAN 50% probability date of August 20, indicating that there is a low likelihood of obtaining mature bolls.

[For a copy of the COTMAN Bollman cutout dates for various locations across the Cotton Belt \(including Altus\), click here:](#)

Irrigation Termination Issues

NAWF counts in some irrigated program survey fields have reached the COTMAN definition of cutout (NAWF = 5) triggering the heat unit countdown for irrigation termination. In contrast, hard cutout, as I define it, can be described as “cotton blooming in the terminal.”

The time has come for many producers to assess yield potential which has been severely challenged by the drought and in many cases fruit retention issues. All fields “bloomed out the top” should be watched for potential irrigation termination within 500 heat units or so after “bloomed out the top.”

Fields that entered bloom at the COTMAN criterion for cutout (nodes above white flower or NAWF=5) and have struggled with irrigation delivery most likely will not produce enough lint for profitable production. One should also consider that under the high stress environment in many areas in 2012, mature boll size will be substantially reduced.

When using the COTMAN program **various investigators across the Cotton Belt have noted that irrigation termination at about 400 to 600 DD60 heat units past cutout (here defined as NAWF = 5 on a steep decline toward hard cutout or**

blooming in the top) has been reasonable. However, project reports published in the Beltwide Cotton Conference Proceedings and other publications lacked information on soil profile moisture status in the trials at the time irrigation was terminated.

One low yielding trial (about a bale per acre) conducted by Extension IPM agents at the Texas AgriLife AGCARES facility at Lamesa in 2003 indicated that irrigation termination at 600 DD60s past the date the crop had 5 NAWF optimized yield and net returns from LEPA irrigation.

A sub-surface drip irrigated (SDI) project conducted by Texas AgriLife Extension Service personnel on 1,100 lb per acre cotton in the St. Lawrence area indicated that untimely early termination based on heat units past cutout resulted in yield losses.

However, based on their study it was concluded that few benefits were noted by extending SDI irrigation past 500 HU after NAWF = 5.

Using heat units after cutout is a good general guide, but with the extreme heat and “inflated heat units” because of triple digit temperatures, it will likely not be exact. Salinity will complicate this.

The value of continued center pivot irrigation and SDI after bolls begin to open is probably questionable, unless extremely high temperatures and high evapotranspiration are encountered and the field has a moisture depleted soil profile and a late boll load. Generally, we observe about 2 to 5 percent boll opening per day once bolls begin to open. This implies that if the last irrigation is made at a few percent open bolls, then it should take about 10 days to reach 30-60 percent open bolls. I submit that due to our extreme environment this year, once bolls begin to open, the boll opening rate will be very high, perhaps near the 5 percent per day rate, but this will depend upon temperatures.

The last irrigation should provide just enough plant available moisture to retain and mature all the bolls that have a reasonable chance of producing lint of acceptable quality under normal growing conditions. Normally a boll will be retained once it reaches 10 to 14 days after bloom. The goal is to avoid excessive moisture stress at least until the final bloom to be taken to the gin becomes about a 10 to 14 day old boll. This will reduce the likelihood of small bolls shedding due to water stress. After that, late bolls can handle more stress. For a boll set on August 10th, excessive moisture stress should be avoided at least through the end of the month, unless rainfall can offset irrigation requirements.

[Click there to see a table that contains irrigation deficit replacement values based on irrigation capacity.](#)

Crop Loss Program Deadline is August 31

To reduce confusion, I need to state that there are multiple shared-risk programs available from transgenic trait providers and seed company partners. Comments immediately below are directed at the claims process for cotton that was lost due to in-season storms, etc. For information concerning the Drought Relief programs, see the next section.

Plains Cotton Growers at Lubbock recently provided an update in a recent newsletter concerning upcoming deadlines for crop loss. For irrigated producers who planted Monsanto Genuity, Bayer CropScience traits and who have crop loss claims, the deadline for submitting those claims is rapidly approaching.

To qualify for the Monsanto program (specifically for Monsanto Seed Drop Zone E which includes the entire state of Oklahoma), the grower who planted cotton with Genuity Traits (Roundup Ready Flex and Bollgard 2) must experience crop loss within 60 days of planting, and the crop must be destroyed. If those criteria are met, the grower may qualify for a 100% technology fee refund. The deadline is August 31 for Seed Drop Zone E.

To qualify for the Bayer program, the grower's crop must be lost, destroyed and unable to be replanted prior to August 31 due to an eligible cause of loss under the Multiple Peril Crop Insurance Program. If a grower's eligible cotton crop is damaged, as described under general program requirements, to the extent that it qualifies for crop loss, then Bayer CropScience will reimburse the grower for the invoiced price of seed and LibertyLink and/or GlyTol technologies, less \$150/bag.

An authorized representative, authorized retailer or seed supplier where the purchase originated, or an approved designee, must inspect and verify the loss. A claim report must be filed for each claim.

Deadlines for Drought Relief Programs for Transgenic Traits and Seed Are Later

The modern transgenic varieties have provided a lot of value to producers in terms of improved yield and quality. Producers are fortunate that transgenic trait providers are sharing production risk in our region (Monsanto Seed Drop Zone E, Bayer CropScience Southwest Geography Zone CE, both of which cover the entire State of Oklahoma). Drought associated losses are covered for all Monsanto Genuity traits by 100% refund of the published tech fee price for losses associated with drought. These traits would include Roundup Ready Flex and Bollgard 2. This can be triggered either by non-emergence or if the field ultimately produces less than 150 lbs lint per land acre. Bayer CropScience has a similar program for its Liberty Link and GlyTol technology fees.

In addition to 100% trait refunds in case of non-emergence or 150 lb lint production per land acre, **various seed companies are also sharing risk**. However, a 50% refund of

published seed cost is provided. There are issues specific to the various companies. **It will be important to know and file the required paperwork (receipts, FSA forms) by the specific deadlines (which can vary by company).** Some companies may require one of their representatives to investigate claimed acres while the crop is still in the field. Some reserve the right to reject without settlement any potential claim not inspected by their representative. **Losses due to other perils such as disease, pests, hail, blowing sand damage, etc are not eligible for coverage under the drought relief programs.**

If producers have questions contact your seed company representative. Shawn Wade with Plains Cotton Growers in Lubbock has acquired and posted much information which is company specific. The direct link for this information on the PCG website can be accessed here:

[Plains Cotton Growers Web Site](#)

Upcoming Meeting

Tillman County Symposium – 8:45 a.m., August 23rd, Orr/Gray Gish Event Center, Frederick.

Please give credit to this newsletter if any information is reproduced or incorporated in any other communications. Thank you.

Editor

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