



Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
Altus, OK



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Crop Update

The Great Drought of 2011 continues. Mesonet data as of July 27 indicate that Altus has been about 50.5 inches of pan evaporation since May 15. High temperatures continue over 100 degrees. The Altus Mesonet station has now recorded 61 days of at least 100 degrees during 2011, and I believe that some days may have gone unrecorded due to missing data. This continued extreme stress has taken its toll on the cotton crop, irrigation systems, and just about everything else. Many producers are indicating that groundwater sources are diminishing due to pumping stress and in some areas salinity has increased also. Irrigated cotton is a mixed bag. It has been difficult to maintain nodes above white flower (NAWF) decline at a reasonable level in many irrigated fields. Fields with marginal pumping capacity will have a short bloom period and will hit hard cutout quickly unless substantial rainfall is obtained.



Many dryland fields at first bloom would meet the COTMAN criteria for cutout (or NAWF=5) because moisture and heat stresses produced low yield potential. The bloom period for many of these fields was a “flash in the pan” and many surviving fields are nearing or are at hard cutout.



Tracking Cutout (NAWF=5) Is Important

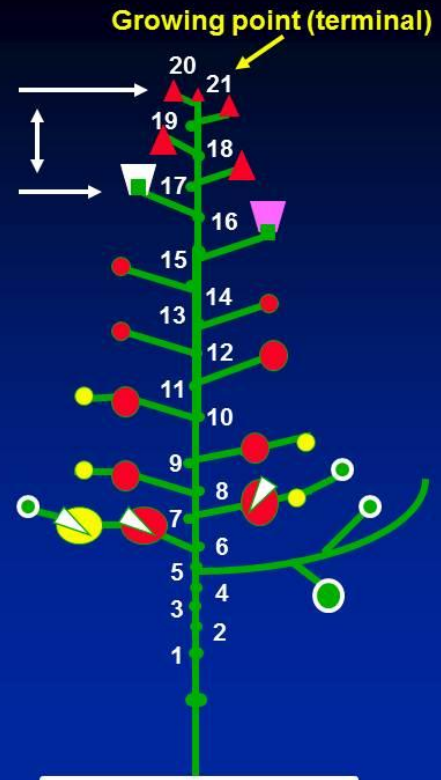
With the oppressive heat we have encountered, cotton heat units have been well above normal. The Cotton Incorporated COTMAN program defines cutout as nodes above white flower (or NAWF) = 5. To realistically meet the overall COTMAN criteria and to be able to use the advantages of this system, “hard cutout” or “blooming out the top” (terminal) of the plant must occur soon after NAWF=5 is encountered. In some situations, if good to excellent soil moisture levels, healthy plant conditions, and adequate heat are obtained, the progression of the mainstem node with a first position white flower can be matched by terminal growth. I refer to this as “hovering” at a certain NAWF. Others call this “suspended cutout.” This year, due to the stresses encountered, I submit that nearly all fields, with perhaps the exception of extremely high irrigation capacity fields will soon hit “hard cutout” once NAWF=5 is encountered. COTMAN uses 850 heat units past bloom as a point at which a bloom can make a “normal” boll.

Determining NAWF = 5 or Cutout

Main stem node
of white flower = 16

Count the number of main stem nodes above the 1st position white flower (let white flower main stem node = 0 so in this graphic NAWF = 5, 1st position white flower at node 16, terminal node at 21)
Count a node as the terminal if the leaf is about quarter sized.

- Main stem node
- ◻ White flower
- ◻ Pink flower (count as a boll)
- 1st position boll
- 2nd position boll
- ◻ 1st position cracked boll
- ◻ 2nd position cracked boll
- ▲ 1st position square
- ▲ 2nd position square
- Vegetative branch boll or 3rd position boll

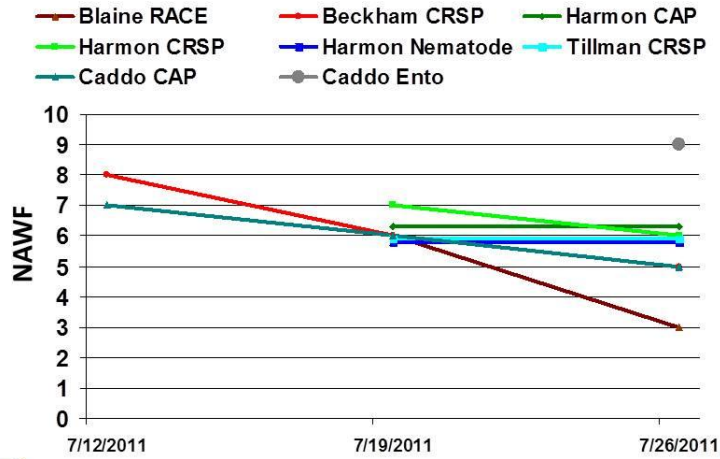


Boman
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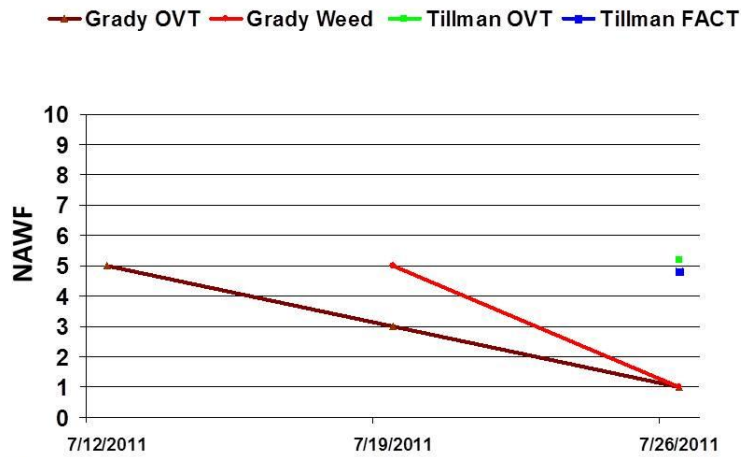
Tracking NAWF can be a very useful cotton management tool. Recording the date of cutout in addition to heat unit accumulation past that date will become important. **Tracking the date when NAWF=5 followed by hard cutout occurs will be useful for center pivot or sub-surface drip irrigation termination date decisions (400-600 heat units past cutout) and harvest aid application decisions (about 850 heat units past cutout).** We will include more about these management issues in later editions.

Surviving project irrigated field surveys conducted this week indicate that some areas with adequate pumping capacity have been able to maintain NAWF while other locations are moving into cutout. Of 8 irrigated trials, only two sites began blooming by July 12, and 5 sites were blooming by July 19. One later planted irrigated site began blooming around July 26. NAWF at first bloom in the irrigated sites ranged from 6 to 9. Several fields with 6 NAWF are matching vertical flowering rate with mainstem terminal node growth. Only a few dryland trials have survived to this point. None have initiated blooming at greater than 5 NAWF. This indicates that extremely low yield potential exists.

Irrigated Field NAWF Surveys - 2011



Dryland Field NAWF Surveys - 2011



Mesonet Irrigation Planner Update

The Mesonet can produce useful irrigation requirement information. For more information, see the June 29th issue. It has been increasingly difficult for producers to keep up with crop ET due to diminishing irrigation capacity.

For Altus for a May 15 planting date (1918 total seasonal heat units) and for the last 10 days:

Last Irrigation Date	Evapotranspiration (inch)	Accumulated Evapotranspiration (inch)	Rainfall (inch)	Accumulated Rainfall (inch)	Water Balance (inch)
7/26/2011	0.44	0.44	0	0	-0.44
7/25/2011	0.39	0.83	0	0	-0.83
7/24/2011	0.41	1.24	0	0	-1.24
7/23/2011	0.45	1.7	0	0	-1.7
7/22/2011	0.41	2.11	0	0	-2.11
7/21/2011	0.42	2.53	0	0	-2.53
7/20/2011	0.44	2.97	0	0	-2.97
7/19/2011	0.37	3.34	0	0	-3.34
7/18/2011	0.32	3.66	0	0	-3.66
7/17/2011	0.32	3.98	0	0	-3.98

For Hollis for a May 15 planting date (1893 total seasonal heat units) and for the last 10 days:

Last Irrigation Date	Evapotranspiration (inch)	Accumulated Evapotranspiration (inch)	Rainfall (inch)	Accumulated Rainfall (inch)	Water Balance (inch)
7/26/2011	0.36	0.36	0	0	-0.36
7/25/2011	0.32	0.68	0	0	-0.68
7/24/2011	0.35	1.03	0	0	-1.03
7/23/2011	0.39	1.42	0	0	-1.42
7/22/2011	0.37	1.79	0	0	-1.79
7/21/2011	0.38	2.17	0	0	-2.17
7/20/2011	0.39	2.56	0	0	-2.56
7/19/2011	0.33	2.89	0	0	-2.89
7/18/2011	0.28	3.17	0	0	-3.17
7/17/2011	0.31	3.47	0	0	-3.47

For Tipton for a May 15 planting date (1826 total seasonal heat units) and for the last 10 days:

Last Irrigation Date	Evapotranspiration (inch)	Accumulated Evapotranspiration (inch)	Rainfall (inch)	Accumulated Rainfall (inch)	Water Balance (inch)
7/26/2011	0.43	0.43	0	0	-0.43
7/25/2011	0.4	0.83	0	0	-0.83
7/24/2011	0.4	1.23	0	0	-1.23
7/23/2011	0.46	1.7	0	0	-1.7
7/22/2011	0.41	2.11	0	0	-2.11
7/21/2011	0.41	2.52	0	0	-2.52
7/20/2011	0.43	2.95	0	0	-2.95
7/19/2011	0.35	3.3	0	0	-3.3
7/18/2011	0.32	3.62	0	0	-3.62
7/17/2011	0.32	3.95	0	0	-3.95

For Fort Cobb for a May 15 planting date (1762 total seasonal heat units) and for the last 10 days:

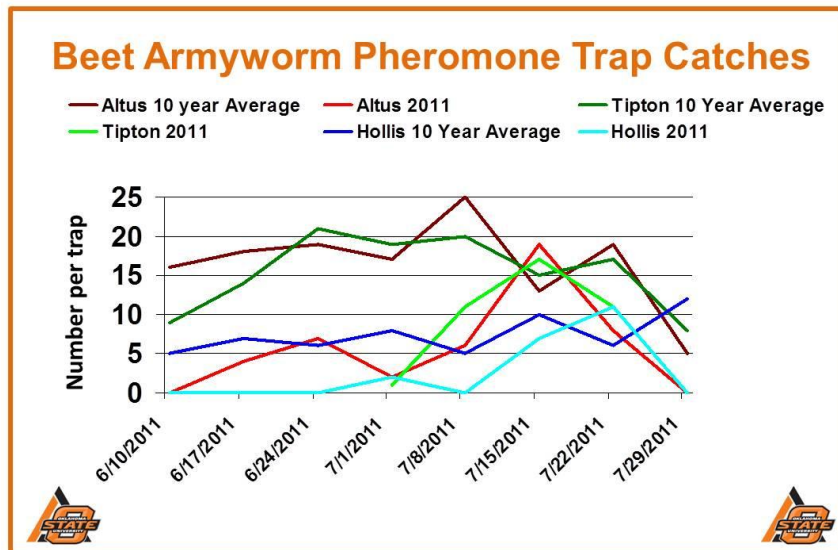
Last Irrigation Date	Evapotranspiration (inch)	Accumulated Evapotranspiration (inch)	Rainfall (inch)	Accumulated Rainfall (inch)	Water Balance (inch)
7/26/2011	0.3	0.3	0	0	-0.3
7/25/2011	0.31	0.61	0	0	-0.61
7/24/2011	0.33	0.94	0	0	-0.94
7/23/2011	0.34	1.29	0	0	-1.29
7/22/2011	0.27	1.56	0	0	-1.56
7/21/2011	0.31	1.86	0	0	-1.86
7/20/2011	0.32	2.18	0	0	-2.18
7/19/2011	0.24	2.42	0	0	-2.42
7/18/2011	0.24	2.66	0	0	-2.66
7/17/2011	0.24	2.91	0	0	-2.91

Insect Update

After conversations with various consultants and conducting surveys of fields in seven counties this week, the insect outlook is as follows:

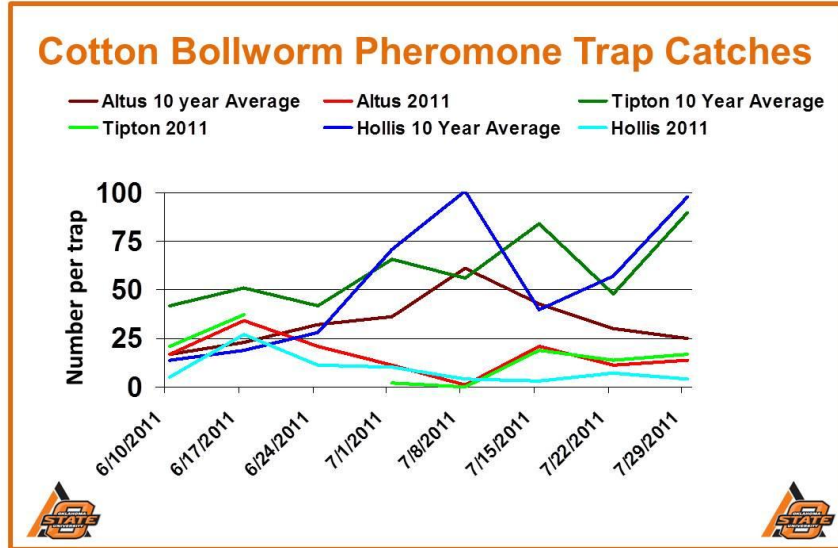
Moth activity:

Beet armyworm moths have been observed in irrigated fields with slight feeding damage found in **NON Bt cotton** plots at the Altus and Tipton stations. This damage was below economic threshold and no live worms were found. **No damage has been observed in Bt cotton.**



Beet armyworm moth

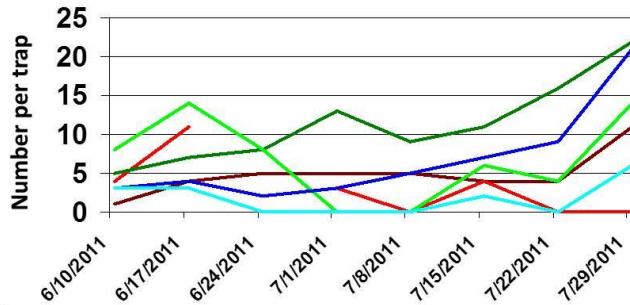
Bollworm moths remain relatively constant and below our 10-year average, and no economically damaging populations have been observed in NON Bt cotton. Tobacco budworm moths have increased somewhat but are below the 10-year average.



Cotton bollworm moth

Cotton Budworm Pheromone Trap Catches

— Altus 10 year Average — Altus 2011 — Tipton 10 Year Average
— Tipton 2011 — Hollis 10 Year Average — Hollis 2011



Tobacco budworm moth

Stink bug: Activity was reported in the Willow area of Greer County. Population was light and below threshold.



Green stink bug nymph



Green stink bug adult

Insect photos courtesy of insectimages.org

No other insect activity has been observed or reported. If you have any questions or concerning observations, please contact Extension personnel.

Agricultural GPS Situation

Modern crop production has become increasingly reliant on precision global positioning system (GPS) equipment, particularly auto-steer. A company called LightSquared is working with the Federal Communications Commission (FCC) to establish a nation-wide 4G cellular network that will use frequencies near L-band GPS. This will may result in interference problems with precision agricultural GPS. Dr. Randy Taylor, OSU Agricultural Machinery Extension Specialist, has written an article concerning this that has been posted on the Plant and Soil Sciences website. It can be accessed here:

[Click here for article](#)

The closing date for comments to the FCC is July 30, 2011, so there is still time to voice your opinion on this matter.

Editors

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[SEND US A COMMENT BY EMAIL](#)

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Newsletter in maintained by Jerry Goodson Extension Assistant.

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