



Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
Altus, OK

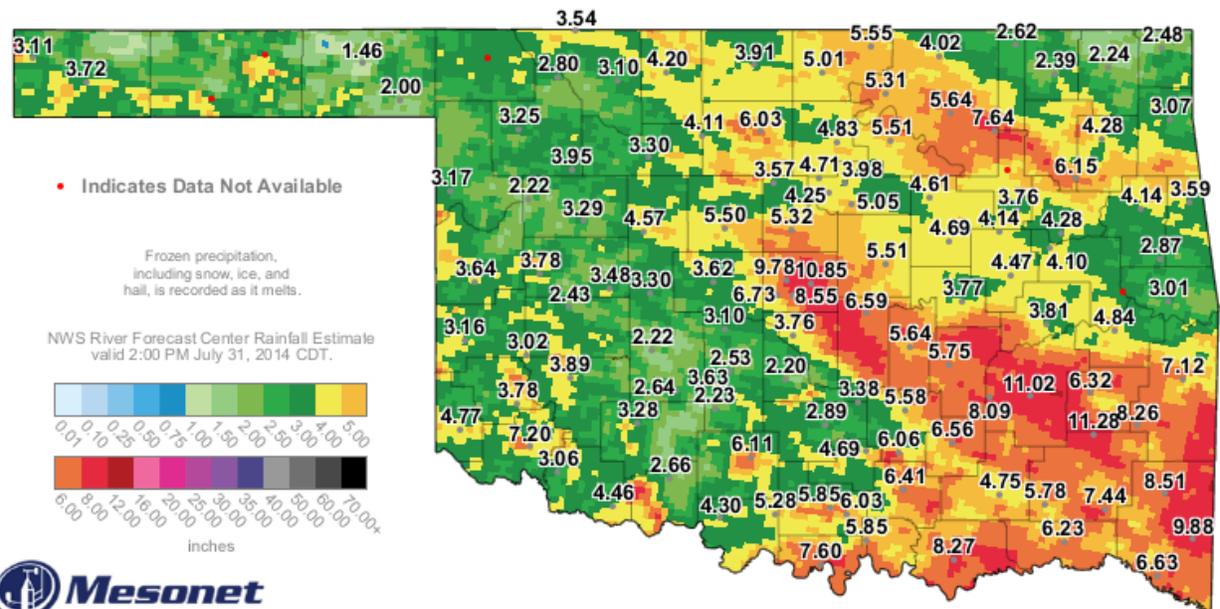


August 1, 2014

Volume 4 Edition 5

Crop Update

The 2014 Oklahoma cotton crop continues to make good to excellent progress in most areas. The June 30 USDA-NASS Crop Acreage report indicated that U.S. upland cotton plantings were at 11.2 million acres, which is up 10% from 2013. This same report indicated that Oklahoma's 2014 acreage was 240,000 acres, up 30% from 2013's 185,000 acres. The July 27 USDA-NASS Oklahoma Crop Weather Report noted that crop conditions were 4% poor or very poor, 37% fair, 57% good, and 2% excellent. Overall, this puts the crop condition at 96% total in the fair or better category at this time. Rainfall keeps falling in many areas. Our dry soils are capturing nearly all of the rainfall, and thus we have had minimal runoff in most areas. The levels in both Lake Lugert (about 12% capacity) and Lake Tom Steed (about 27% of capacity) indicate that little inflow has occurred. However, the good news is that many areas in the persistently parched southwestern corner of the state over the last month have received some excellent rainfall. The Mesonet graphic below summarizes the rainfall amounts obtained over the last 30 days.



30-Day Rainfall (inches)

2:40 PM July 31, 2014 CDT
Created 2:45:48 PM July 31, 2014 CDT. © Copyright 2014

Jackson County (which has borne the brunt of much of the drought over the last 3 years) wins the prize in western Oklahoma for the most Mesonet rainfall in the last 30 days with amounts over 7 inches. This precipitation has resulted in a very good rainfed crop at this time in the Lugert Altus Irrigation District (LAID). Although no irrigation water is available for 2014, this rainfed crop is moving along very nicely. One more substantial rainfall event should result in decent harvestable yields. Other areas have not been quite so blessed, but overall we have received at least 3 inches of precipitation in much of western Oklahoma in the last month. This has kept our dryland crop moving along, but additional rainfall in mid-August will be a necessity due to overall low subsoil moisture. The recent Drought Monitor graphic (see graphic below) for Oklahoma reflects some improvement in our ratings in the western part of the state, but still indicates we are a long way from being out of the drought.

**U.S. Drought Monitor
Oklahoma**

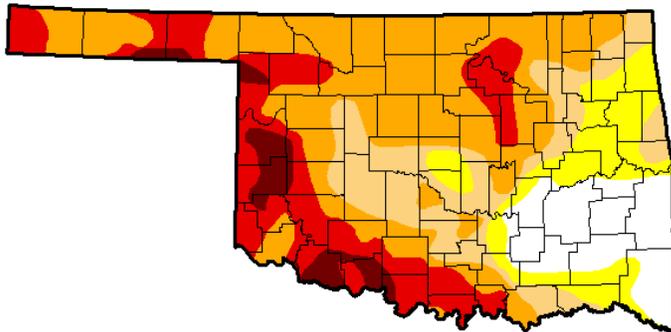
July 29, 2014

(Released Thursday, Jul. 31, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12.06	87.94	76.16	60.09	23.36	4.48
Last Week <i>7/22/2014</i>	10.52	89.48	75.48	60.09	23.55	5.57
3 Months Ago <i>4/29/2014</i>	7.19	92.81	79.21	54.81	39.03	20.26
Start of Calendar Year <i>12/1/2013</i>	50.84	49.16	38.17	18.99	4.84	2.40
Start of Water Year <i>10/1/2013</i>	21.74	78.26	43.00	17.62	4.42	1.45
One Year Ago <i>7/30/2013</i>	47.23	52.77	37.93	32.04	23.20	1.42



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

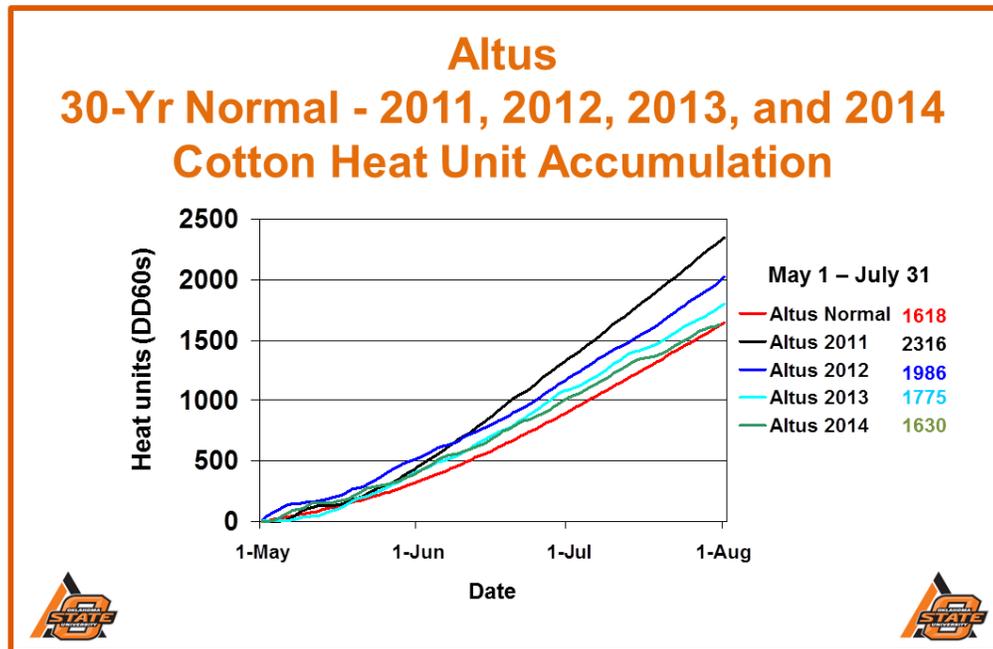
Author:

*Brad Rippey
U.S. Department of Agriculture*



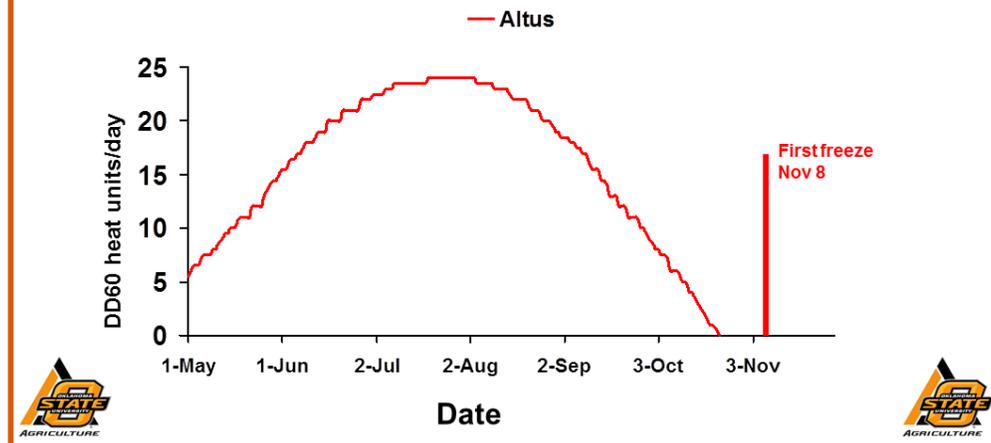
<http://droughtmonitor.unl.edu/>

Along with the soil moisture improvement, we have encountered below normal air temperatures. Cotton heat unit (DD60) accumulation for the entire month of June at Altus totaled 616, which was about 7% above normal. However, when we look at July's total (628) it was about 14% below normal (730). This means that the crop didn't move along quite as quickly as it should have. From May 1 through July 31 the 2014 DD60 total at Altus was 1630 vs. 1618 for the 30-year normal (see graphic below). Thus far, this is the coolest growing season of the last 4 years. It has felt great to humans, but the cotton crop is moving slowly.



A total of 9 days in July (early, mid-month and last week) produced high temperatures that were less than or equal to 85 degrees. The normal high temperatures for July at Altus are in the mid to upper 90s. I believe that a "record low high temperature" was set on July 17th, which was 68 degrees. Low temperatures were also significantly lower than normal (about 70 degrees) on some days. A total of 8 days had low temperatures that were 67 degrees or lower. Cloudy, overcast skies were noted on several days, which was another negative for crop development. I do not believe these cloudy conditions resulted in fruit shed issues. We have reached the time during the growing season when long-term average heat units per day have peaked and begin the downward trend. Keep in mind that at Altus, our long-term cotton heat units trend to zero around the middle of October (see graphic below). All other areas to the north will be earlier than that.

Altus 30-Year (1971-2000) Long-Term Average Daily Heat Units



Some important negatives that producers have experienced include considerable phenoxy herbicide damage in several counties, and difficulty controlling palmer amaranth (pigweeds) with glyphosate herbicides. For more information on these, see sections below.

For crop watchers this means that much of the Oklahoma cotton crop is intact, has had significant timely rainfall, and is on track to make decent yields in 2014. August rainfall should result in a very good crop on many acres. The challenge for our irrigated production may be maturity at the end of the season. Let's hope for a finish like we had in 2013. **Jerry Goodson's summary of IPM observations of projects in several counties is provided below. This is a good barometer of the overall crop progress in the state.**

Phenoxy Damage

Reports of substantial phenoxy herbicide drift damage have been noted in several counties. Yield effects from this type of damage are difficult to quantify. Yield losses are most pronounced when cotton is exposed during the squaring stage. The amount of injury is rate dependent, but any injury can cause a delay in blooming. If the maturity is delayed substantially, a significant negative impact on yield is usually observed. Many times phenoxy herbicide injury in cotton can be from a single "drift event". If so, then the new leaves in the terminal will not show continued damage ("leaf strapping") and fruit development may not be ruinously interrupted. Fields that experience high single dose events or multiple sustained doses of phenoxy herbicide over time (perhaps from multiple "drift events") may have "leaf strapping" and fruiting impact for several weeks. This can be a real yield killer. The only thing that can be done is to manage the crop as best as possible and watch the fruit retention. This is a difficult situation, and

each field (or even areas of a field) can be different based on the nature of the drift event, cotton growth stage, future growth potential (soil moisture level), etc. Critical observations include 1) when will the oldest remaining unaffected squares potentially bloom? (what calendar date); 2) what is the square retention on the plants?; 3) what is the last effective bloom date (calendar date) to produce a reasonably mature boll for the area?; and 4) what is the soil moisture level? (to drive yield potential).



Early season phenoxy herbicide damage in cotton.



Mid-season phenoxy herbicide damage in cotton.

Nitrogen Questions

I have had several questions concerning nitrogen (N) fertilizer applications, especially from the Altus area. In order to answer these questions, I ask a few myself. These questions include cropping history, amount of N fertilizer applied since 2011, and a yield goal based on current crop and soil moisture conditions. Earlier in the spring Extension personnel conducted a 24 field deep soil sampling project in the Lugert-Altus Irrigation District. Samples were taken down to 18 inches using a hydraulic soil probe mounted on a John Deere Gator. Due to crop failures in 2011, 2012, and 2013, these soils have mineralized a considerable amount of nitrogen from the “organic pool” in those years. Minimal crop removal has occurred, and certainly zero N leaching was encountered because of continuous drought. Some fields have experienced some crop removal by poor wheat forage crops or perhaps poor wheat grain crops. These types of fields which produced at least one poor crop have less residual nitrogen in the 0-18” soil profile than those that were planted as continuous cotton (with the failed cotton shredded and returned to the soil each year). Fields with some N removal (by a poor small grains crop) typically averaged about 100 lbs N/acre. Fields with continuous failed cotton only (no crop removed from the field at all during the last 3 years) ranged from about 175 to 250 lbs N/acre. All fields in the survey averaged 151 lbs N/acre in the 0-18” profile. N requirement for cotton is 50 lbs N/bale of yield goal. It is important to consider the total potential N inventory including soil residual N to the 18” depth and N in irrigation water. Based on the above soil sampling survey results it would appear that many fields in the LAID would not necessarily require fertilization based on 2014 rainfed yield potential. The only way to know the situation in a specific field is through earlier soil testing. In order to make better informed N management decisions, growers in the LAID should seriously consider deep sampling of these fields in the spring of 2015. We will discuss this during our winter production meetings. If anyone has any questions about this please call.

For more information and recent publication from a Cotton Incorporated funded Beltwide Cotton Specialist project, [click here](#).

[Nitrogen Requirements of Contemporary Cotton Cultivars](#)

Plant Growth Regulators

With the excellent cotton in some areas where adequate moisture has been encountered, it will be important to be on point concerning the use of plant growth regulators. Mepiquat-based (such as Pix Plus, Mepex, Mepichlor, Mepiquat Chloride, Mepex GinOut, Stance, and others) plant growth regulators (PGRs) have been around for many years. Companies are constantly enhancing formulations, but the main active ingredient in nearly all of these products is mepiquat chloride. For more information concerning PGR use, use the link below.

[Click here for Cotton Growth Regulators – Producer Handout](#)

This publication includes a list of newer varieties, their growth habits, and potential PGR management concerns.

To see the full discussion of PGR use in cotton [click here](#) to go to the June 26, 2014 edition of Cotton Comments.

Irrigation Issues

Many producers with groundwater resources (center pivot, furrow or drip) have initiated irrigation. Crop evapotranspiration (combined losses of water due to evaporation and crop transpiration) models can generally do a good job of predicting crop water use. The Mesonet provides a good tool that can be useful to estimate crop ET. A while back Dr. Jason Warren and I assembled a factsheet which provides considerable information pertaining to cotton irrigation management and concerns.

[Click here for PSS-2406 Understanding Cotton Irrigation Requirements in Oklahoma.](#)

RB

Rains Bring Heavy Weed Infestations and Pigweed Problems.

Timely rains have improved our attitude but the ensuing weed explosion seems to be reigning in our excitement. While good soil moisture has made it easier to control some weeds like Russian thistle (tumbleweeds), difficulty controlling pigweeds this year is at an all-time high. Pigweeds can grow extremely fast when resources are available so thorough and timely scouting has been key in order to stay on top of the issue. Many producers that did not



utilize early-season residual herbicides have been reminded that a rainfall event the day after their last glyphosate application can leave them with a brand new flush of pigweeds that grow three times as fast as their cotton. A few weeks later parts of the field can appear as though nothing was ever sprayed. In addition to this scenario, more producers are finding that even when they are timely and choose the correct rate and make their application in an appropriate manner, the glyphosate doesn't work. Pigweed control issues in cotton have been experienced in Harmon, Tillman, Caddo and Custer counties for the past few years and we recently confirmed glyphosate resistance in Jackson County as well. Glyphosate resistant pigweed (GRP) seems to be spreading at an alarming rate. Even producers that have utilized residual herbicides from the beginning are finding that in some situations perfection (100% control) is not realistic. Is 80-90% pigweed control acceptable? Where does that leave

us? What can we do to survive the technology gap? Will we have technology next year that allows us to forget all of these problems and return to “easy-street” for the next 5-10 years? Unfortunately, there are not many encouraging answers to these questions. For now let’s try to address our current problems.

Producers who have pigweeds that have escaped numerous glyphosate applications have no simple, economical solutions. Removal (of existing weeds) and prevention (of additional flushes) are the necessary courses of action. A pigweed that has reached waist high after several glyphosate applications is not going to be easily controlled with chemicals. A grower’s typical first response is the consideration of alternative over-the-top broadcast herbicides. The herbicide options which provide burndown control of broadleaf weeds are few. Since Staple LX herbicide can be tank-mixed with glyphosate and adds additional burndown as well as residual weed control (note crop rotation restrictions on label) some consider this route. If considering Staple LX, pay close attention to the label in regards to weed size, rates and application requirements. The effectiveness of this product depends heavily on these factors. It should be noted that in regards to waist high GRP escapes, the highest labeled rate of Staple LX over the top will not solve your dilemma. Another possibility if you have the Liberty Link trait is of course applying Liberty herbicide over-the-top. Traditionally, we (in the southwest) have challenges getting Liberty to effectively control pigweeds with our low humidity and high temperatures. As is the case with Staple LX, following label instructions makes a tremendous difference in the outcome of a typical Liberty application. However, it is not realistic to expect the highest labeled rate of Liberty to control waist high GRP escapes either. Some have also inquired about the product Envoke. Generally speaking, Envoke performs similarly to Staple LX (and crop rotation restrictions should be considered). It should be noted that Envoke does not list control of Palmer pigweed on the cotton section of the label and palmer is the most prevalent species of GRP. For those considering its use for over-the-top applications to GRP escapes I would classify my expectations to be similar to the previous comments about Staple LX, do not count on it to clean up your GRP escapes.

While all of these products have benefits in certain situations none of these options will effectively control GRP escapes and that leaves us with the previously mentioned options for removal...tillage and/or hand hoeing. In most cases tillage needs to be part of the salvage operation. Although many have committed to no-till production, GRP is a game changer. I haven’t seen a pigweed that can survive a cultivator. However, it should be pointed out that cultivating (or any stirring of the soil) will most likely lead to an additional flush of pigweeds. Therefore a residual herbicide application following your salvage operation (tillage/hand hoeing) is highly recommended. The challenges with the current crop stage (early bloom) are getting the residual herbicide in contact with the soil and getting it activated. By this time of year most fields have progressed enough that broadcast over-the-top applications may not be sufficient for effective coverage or product labeling requires a different approach. That’s where hooded sprayers come in.

Hooded sprayer applications can be a key part of finishing the season in satisfactory condition. Regardless of the herbicide program, using a hooded sprayer effectively requires a certain amount of understanding. Most have heard of or experienced the detrimental effects that speed can have on broadcast applications. Slowing down when using a hooded sprayer is twice as important compared to broadcast applications. Good coverage is essential and there are some things to remember to ensure that we achieve adequate coverage. First, make sure the targeted spray volume agrees with the product labeling. Most products applied under a hood do not perform well at low volumes. Secondly, learn to treat this application or trip like you're cultivating 1-2 leaf cotton. Slow and precise is the preferred mode of operation. This is a hard pill to swallow in the age of monster booms and 20 mph ground speed capabilities. While many have built their operations on the premise of no-till farming, speeds such as this will be a definite change of pace. Traditional post-directed or hooded sprayer treatments (Aim + Direx, Aim + Caparol, etc.) that are effective at helping to burn down late flushes of weeds may also injure your cotton if not used properly (some have height requirements, some have cotton stem bark requirements, some have both). These products are not intended to come in contact with green cotton stem tissue. However, when used properly they do a great job. **Reading the product labeling is mandatory.** Several herbicide program options exist when using hooded sprayers and each one has its own set of guidelines. Regardless of the production environment (conventional, minimum, strip-till or no-till) yellow herbicides can still be applied through hooded sprayers later in the season with beneficial results. Granted, without overhead irrigation or rainfall, mechanical incorporation may be required to effectively activate some of these products. While tank-mixing with glyphosate has been highly recommended for the prevention of GRP, it may not be the program of choice with resistant pigweed in the area. Also, we need to remember that some tank-mix partners (Warrant, Prowl H20, Dual) provide no additional burndown activity and therefore the entire burden of controlling emerged weeds falls solely on glyphosate. Due to the number of producers experiencing pigweed control failures with glyphosate this year, some of the more traditional alternatives (previously mentioned) should be seriously considered.

SO

Insect Update

The insect outlook is as follows: Light infestations of pests continue. Most fields are either blooming or very close to bloom. Grasshoppers are still a concern. Fleahopper control sprays are coming to an end. Moth counts are at all-time lows. With the corn silage crop harvest fast approaching moth populations will be dispersing throughout the area. Moth activity should increase.

In non-cotton pest news: Two major pests threaten the sorghum crop. One is the sugarcane aphid and the other Fall armyworm. The sugarcane aphid is a new pest for Oklahoma. Please click on following link for more information.

[Sugarcane Aphid: A New Pest in Sorghum Texas AgriLife publication.](#)

Reports from Lubbock, Texas and southeast Oklahoma indicate that Fall armyworm moth trap catches are at extremely high levels. One field of grain sorghum in eastern Oklahoma was infested with *yellow-striped armyworms* in damaging numbers.

If cotton fields are adjacent to sorghum, the fields need to be scouted. If you have any questions, please contact Extension personnel. Last week's summary of surveyed counties and fields is presented below along with moth trap reports.

Field Surveys in Oklahoma - Week Ending July 25, 2014

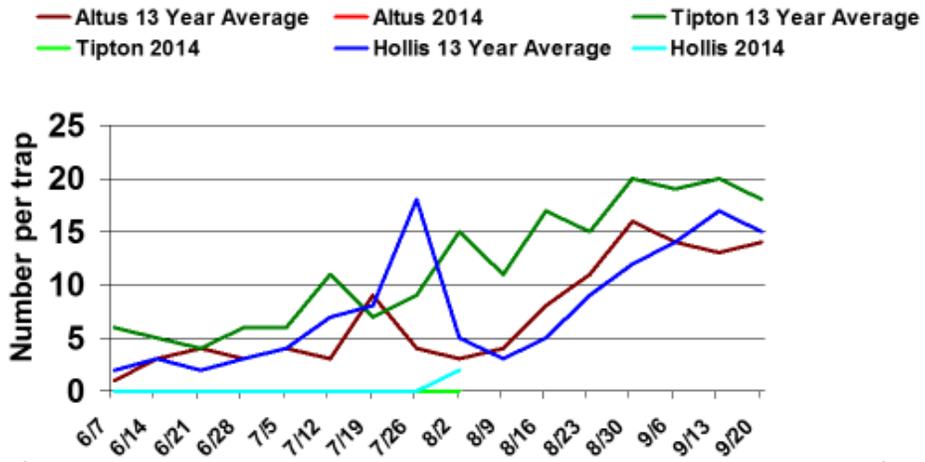
Location	Date of planting	Plant Stage	Insects	Comments
Beckham Irrigated RACE - Damron	May 20	7.50 NAWF	None detected	Good
Caddo Irrigated Cotton Inc Enhanced Variety - Schantz	May 20	Pre-Bloom	None detected	Good
Caddo Irrigated Bayer CAP - Schantz	May 21	7.25 NAWF	None detected	Good
Caddo K Trial - Schantz	May 21	7.50 NAWF	None detected	Good
Caddo Irrigated Dow Innovation Schantz	May 31	Pre-Bloom	None detected	Good
Caddo Irrigated Americot ACRE- Schantz	May 31	Pre-Bloom	None detected	Good
Caddo Irrigated OVT – OSU Station	June 3	Pre-Bloom	None detected	Good
Harmon Irrigated Cotton Inc Enhanced Variety - Cox	May 21	8.25 NAWF	None detected	Good
Harmon Irrigated Bayer CAP - Horton	April 30	6.75 NAWF	None detected	Good
Jackson Irrigated RACE - Darby	May 21	Pre-bloom	None detected	Good
Jackson Irrigated OVT - Altus Station (no water)	June 2	Match head squares	None detected	Good
Jackson Dryland Race - Abernathy	June 13	1/3 grown squares	None detected	Good
Tillman Irrigated RACE - McCullough	May 15	8.25 NAWF	None detected	Good
Tillman Irrigated Trials – Bio Thrips McCullough	May 14	7.75 NAWF	None detected	Good
Tillman Dryland RACE - Fischer	June 5	Pre-bloom	None detected	Good
Tillman Dryland No-Till (Tipton Station)	June 6	Pre-bloom	None detected	Good
Tillman Dryland OVT - (Tipton Station)	June 4	Pre-bloom	None detected	Good
Washita Dryland RACE – Davis	June 4	Pre-bloom	None detected	Good

RACE – Replicated Agronomic Cotton Evaluation Trial (Oklahoma Cooperative Extension)

CAP – Cotton Agronomic Plot (Bayer CropScience)

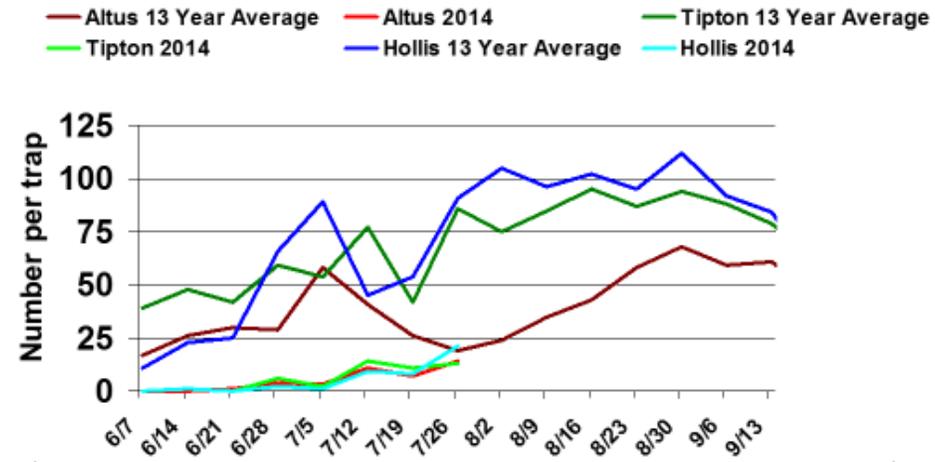
OVT – Official Variety Trial (Oklahoma Agricultural Experiment Station, Altus, Tipton, Fort Cobb)

Beet Armyworm Pheromone Trap Catches



Beet armyworm moth

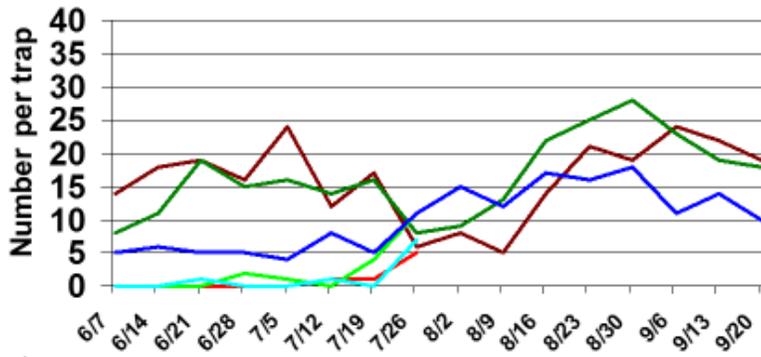
Cotton Bollworm Pheromone Trap Catches



Cotton bollworm moth

Tobacco Budworm Pheromone Trap Catches

— Altus 14 Year Average — Altus 2014 — Tipton 13 Year Average
— Tipton 2014 — Hollis 13 Year Average — Hollis 2014



Tobacco budworm moth

JG

Upcoming Area Meetings

From Dr. Paul DeLaune - Texas A&M AgriLife Research and Extension Center, Vernon
Rolling Plains Field Tour - Practices to Improve Soil Health and Soil/Water Conservation

Thursday, August 14

Registration 8:00-8:45 a.m. at the Punkin Center Volunteer Fire Department – Haynesville, TX, Located 0.3 miles S of HWY 240 & HWY 25 Intersection (3 miles N of Electra). Field Stops in Archer, Baylor, Wichita, and Wilbarger Counties.

[For a flyer of the event, click here.](#)

Oklahoma Irrigation Conference

Tuesday, August 19, 2014

Registration 9:00 a.m.

Caddo-Kiowa Technology Center, Building 400, Fort Cobb, OK
GPS address: N 35 06.517 W 98 26.612

[For a flyer of the event, click here](#)

Oklahoma Ag Weather Symposium

Thursday, August 21

Registration 8:30 a.m. National Weather Center
120 David L. Boren Blvd., Suite 2900, Norman, OK

Note: Please RSVP to Steve Thompson by August 5, 2014, at American Farmers and Ranchers by email at okagweather@gmail.com or by phone at (405)-218-5563. Since the National Weather Center is a federal facility it will be imperative to RSVP before the event so name badges can be created ahead of time for entry into the symposium. If you plan on taking the tour in the afternoon you must RSVP for that separate with Mr. Thompson so tours can be facilitated.

[For a flyer of the event, click here.](#)

Carnegie Co-op Gin Fall Cotton Meeting

Thursday, September 11

8:30 a.m.

Merlin Schantz Farm, Hydro, OK

More information and flyer will be provided later

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Editors

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