Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
Altus, OK

June 16, 2011 Volume 1 Edition 7

Crop Update

Drought continues to plague much of the cotton area in southwestern Oklahoma. Some areas north of Altus and in far eastern Tillman County received some rainfall. The irrigated cotton planting date for insurance purposes in southwestern Oklahoma counties has passed (June 10) and we are near the end of the late planting period. The dryland final planting date for insurance purposes (June 20) is looming. The late planting period expires on June 27. Insurance coverage amounts are reduced by 1% for each day in the late planting period. Thus, if a producer chose 65% coverage for his crop and seeds the 2011 dryland crop on June 27, he can expect only 58% coverage. This has been one of the most difficult stand establishment years ever for many producers. Producers who planted cotton even under the best of conditions have many times had issues with obtaining a uniform stand. The forecast for the next several days for southwestern Oklahoma remains hotter than blazes with high winds.

It will take some time to sort out the overall crop situation as it is murky because of scattered rainfall events, planting and irrigation situation, etc. The state cotton crop status should become clearer by mid-July. Dryland cotton that was planted after rainfall events in late May is off to a good start, especially in the Tipton area. However, many areas are still lacking moisture so producers are dry planting at this time. Some cotton with center pivot irrigation is doing well. Subsurface drip irrigated cotton has struggled significantly to say the least. Many furrow irrigated fields have also had difficulty with stand establishment. We have some trials at Hydro and Carnegie (see photos) which are located under center pivots, plus have obtained some timely rainfall that are currently in excellent condition. Center pivots provide considerable flexibility for irrigation management in a hot, dry, windy year such as this assuming the irrigation capacity is adequate. Producers who are fortunate to have cotton in good to excellent condition at this time need to make sure they stay on track with timely management. Insect issues may or may not arise. Many times when drought has significantly reduced alternate hosts, insect populations may not be able to build to high levels. However, most of the better cotton we now have is in pockets of higher rainfall.

Anatomy of the 2011 Southwestern Oklahoma Drought

We have all been living this day-to-day, but when we scrutinize the weather data since April 1, the net brutality effect becomes readily apparent. We are fortunate to have an excellent Mesonet system here in Oklahoma. However, since the Altus station has been offline some, I have attempted to piece together the actual data using data from either Hollis or Tipton. Here are the brutal statistics as near as I can determine them for Altus:

1) Since April 1 we have had 23 days of 100 degrees or greater (2 in April, 7 in May and 14 of the 15 days in June thus far – the single temperature in June below 100 was actually 98). By my math, that is 30% of all days (76) between April 1 and June 15 being 100 degrees or greater.

2) Blast furnace effect: From April 1 through June 15 we have had
a. wind gusts of at least 30 mph – 58 days total: April – 24 days, May – 22 days, June – 12 days (12 of first 15 days)
b. wind gusts of at least 40 mph – 19 days total: April – 8 days, May – 7 days, June – 4 days
c. wind gusts of at least 50 mph – 7 days total: April – 4 days, May – 1 day, June - 2 days

d. Or re-stated in another way: Since we have had 76 days from April 1 through June 15, we have lived
with wind gusts of over 30 mph 76% of the time
with wind gusts of over 40 mph 25% of the time
with wind gusts of over 50 mph 9% of the time

3) Evaporative demand from this extreme environment has been catastrophic. Accumulated rainfall at the Hollis Mesonet station during the April 1 through June 15 time period was 2.25 inches. The Mesonet has a missing rainfall event here at the Altus station that was about 1.3 inches based on our rain gauge. So, as near as I can tell, the Altus Mesonet rainfall total from April 1 should be about 2.25 inches. The 30-year normal (1971-2000) rainfall at Altus for April, May and all of June is 11.5 inches. Based on the Mesonet Cotton Irrigation Planner, for a May 1 planting date for Hollis, the total accumulated cotton crop ET through June 15 is about 6.3 inches. For Altus (with its missing data points) ET is nearly 6.9 inches since May 1.

4) It should be noted that soil profiles for nearly all clean till fields were dry going into May; for some no-till fields the profile moisture was fair to good. At the time of irrigation water release from the reservoir (at about 47% capacity around mid-May) the Lugert-Altus Irrigation District allocated 6 acre-inches of irrigation per assessed acre. I am told that it is likely the

"irrigation run" will last for a total of about 30 days. We are a little over two weeks into the irrigation run. Most of our producers have expended their 6 inches just trying to get a crop up and going. The reservoir irrigation component will be consumed by the end of the run. The fields with stands coming online now are going to have a late crop that will need substantial and timely rainfall for the remainder of the growing season, unless high rainfall amounts occur in the North Fork watershed to recharge the reservoir.

USDA Risk Management Agency Clarifies Non-Irrigated Cotton/Small Grains Insurability Questions

Non-irrigated producers who have been planting a fall seeded small grains (usually wheat or rye) cover crop and then terminating that cover crop with glyphosate (Roundup) have encountered several issues. There is an important risk associated with this conservation practice. In 2011 the ongoing drought hardened off small grains planted as a cover crop in some dryland fields across the region, rendering glyphosate termination ineffective in many cases. Several years ago USDA-RMA adopted of a zero tolerance of this cover crop reaching the heading stage. When heading of the cover crop occurs, it results in the lack of insurability of a non-irrigated cotton crop produced in such a manner. A recent press release from Plains Cotton Growers in Lubbock, Texas stated:

"In a year of unprecedented drought, cotton producers on the High Plains will have one less worry as the USDA Risk Management Agency issued a bulletin yesterday [June 14] that clarifies a number of issues related to small grain crops and the insurability of non-irrigated cotton. As a typical conservation tillage practice, many producers plant small grain crops, such as wheat, as a cover crop for their cotton and complete termination of that crop before planting cotton is usually not an issue. However, extreme drought conditions can prevent herbicides from fully terminating the cover crop, possibly rendering a field uninsurable. The bulletin from RMA (MGR-11-007) recognizes that because of the drought, there could be small portions of a cover crop that could have produced a seed head, but if the producer did everything they could to terminate the cover crop before it reached that point and followed all other guidelines, subsequent crops such as non-irrigated cotton can be insured. This clarification applies also to volunteer wheat."

Page 2 of USDA-RMA Bulletin MGR-11-007 reads:

"Effective for the 2011 crop year, for purposes of inspection and administering the SP statement referenced above, it is recognized an isolated or small number of plants may have continued to grow and produce a seed head. This takes into account than an isolated or very small number of seed heads may be unavoidable due to extreme drought conditions preventing the herbicides from fully terminating the cover crop and the producer's inability to terminate every single plant is, in essence, so minor as to be disregarded. If the policyholder did everything that was required under the policy to terminate the cover crop

before it reached the heading stage, but full termination did not occur due to an insurable cause of loss, a determination that an isolated or small number of plants remaining would NOT preclude insurance for a subsequent crop, provided the policyholder meets all other requirements of the policy.

During the loss adjustment process, the loss adjuster must verify that the policyholder took appropriate, recognized measures, in accordance with agricultural expert recommendations, that would have normally achieved vegetative kill of the small grain plants preventing them from reaching the headed stage if not for the insurable cause of loss that prevented the chemical application from properly working. This means verification of the application of the correct chemical, in the proper amounts, and at the proper time to achieve termination of the crop before it reached the heading stage. Disposal Date: December 31, 2011"

For a copy of the entire USDA-RMA Bulletin MGR-11-007 which was provided to all insurance providers, all Risk Management Agency field offices, and all other interested parties, **click here.**

Early Season Pests – Fleahoppers and Lygus

Cotton Fleahoppers and Lygus are the next pests to start monitoring during the fruiting stage of the cotton crop (squaring to bloom).

Photo courtesy of www.insectimages.org

Cotton Fleahopper

Since the introduction of Bt cotton and boll weevil eradication the cotton fleahopper has become the number one pest in Oklahoma. The cotton fleahopper usually feeds on young succulent weeds such as croton, goatweed, and horsenettle in early spring. These weeds also provide an overwintering site for eggs. As the weeds mature, adults migrate to cotton which is beginning to develop pinhead squares. Fleahoppers insert their sucking mouthparts into the small squares These damaged squares later turn brown and are shed from the plant.

Photo of fleahopper damaged "blasted" square courtesy of Texas AgriLife Extension

In addition to squares, the cotton fleahopper will also feed on other parts of the plant. If heavy infestations exist, new growth will be abnormal and whip-like in appearance. All stages of the life cycle will feed on the plant as long as it remains succulent. As cotton matures, these insects migrate to weeds or other host crops. In southwest Oklahoma, the highest population typically occurs in cotton in early August, although it is not generally a problem that late in the season.

The life cycle begins with the female placing her eggs into the plant tissue by means of an ovipositor. The eggs hatch in approximately 1 week, and small nymphs (which are similar to the adults, except for being wingless) undergo five molts before reaching the adult stage. Egg to adult takes approximately 3 weeds with six to eight generations per year. The cotton fleahopper adults are approximately one-eighth inch long, winged, and pale green in color. They are covered with small black spots and have four characteristic black spots near the wing tip. The nymphs are about one-twenty-fifth inch long, wingless, and pale green in color.

Photo courtesy of www.insectimages.org

Numerous chemicals are registered for control of fleahoppers. In an ideal situation, Fleahoppers should be controlled only when thresholds are exceeded in order to preserve beneficial insects since these will help control later occurring pests. Unless the cotton is extremely late, after July 25, control of cotton fleahoppers generally is not economical.

Spray decisions should be based on the squaring rate and level of cotton fleahopper infestations. Usually when cotton fleahoppers (adults and nymphs) reach or exceed 30 per 100 terminals, treatment is justified. However, if cotton fleahopper numbers build slowly, fields can tolerate higher numbers before a reduction in squaring rate will occur. In most cases, fields will no longer be vulnerable to cotton fleahoppers once they begin to bloom.

Chemical ontrol of cotton fleahoppers is fairly easy to accomplish and numerous products provide good control. However certain chemicals may not be advantageous. Care must be taken to preserve beneficial insects that will help in controlling cotton aphids and spider mites. Flaring of these insects can be avoided by using products that are “easier” on beneficial insects.

The list of chemicals that control cotton fleahoppers includes Vydate, Orthene, Bidrin, Intruder, Centric, Trimax Pro, Carbine, Lorsban, Steward, Lannate, Dimethoate, and various pyrethroids. Bidrin has a supplemental label allowing its use in cotton from emergence to first bloom in Texas, Oklahoma and New Mexico, but you can’t apply more than 3.2 oz/ac during this period.

According Dr. David Kerns, with Texas AgriLife Extension at Lubbock, products least likely to flare secondary pests include Carbine, Bidrin, Steward and low rates of Vydate (4.25 oz/acre) and Orthene (4 oz/acre). Other insecticides such as Intruder, Centric and Trimax Pro won't flare aphids and are probably fine to use as well, but have been implicated in flaring mites. Pyrethroids are typically not recommended for fleahopper control because they tend to be very disruptive and may flare aphids, and bollworms in non-Bt cotton.

Photo of aborted square scar courtesy of Texas AgriLife Extension

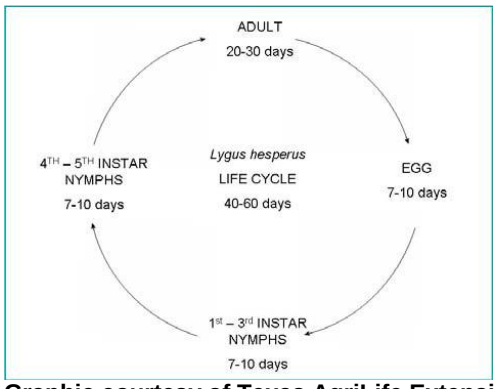
Lygus

Lygus although far less numerous than cotton fleahoppers are a growing concern of late due to less chemical applications because of transgenic Bt cotton and boll weevil eradication. Lygus or plant bugs are small insects that 0.25 inch long and 0.1 inch wide, and flattened on the back. They vary in color from pale green to yellowish brown with reddish brown to black markings, and have a conspicuous triangle in the center of the back. Texas AgriLife personnel have identified three species of lygus that are predominate in cotton in this region: the western tarnished plant bug, the tarnished plant bug and the pale legume plant bug. It is normally not necessary to distinguish between these species in making management decisions.

Photos courtesy of UC Davis

Plant bugs feeds on many alternate hosts such as alfalfa and other legumes, butterweed, fleabane, goldenrod, aster, and dog fennel. When the weed host becomes unsatisfactory for feeding purposes, plant bugs usually migrate to cotton fields. The average time to complete the life cycle is 50 days in summer. Plant bugs can generate four to seven generations in one season.

Development time of each stage varies with temperature. Under normal temperatures this is about 7 days for eggs, 7 days for small nymphs (instars 1–3), and 7 days for large nymphs (instars 4 and 5).



Graphic courtesy of Texas AgriLife Extension

Plant bugs feed by inserting mouthparts into terminals, squares, and other tissues, and by sucking the juices out. Injured squares usually turn dark and drop off, while damaged bolls may develop abnormally.

Control of Lygus although rare in Oklahoma must be carefully considered because of the destruction of beneficial insects that could cause out breaks of other pests especially cotton aphids. Texas AgriLife Extension at Lubbock has provided a threshold table.

Lygus Action Threshold

	Sampling method*	
Cotton stage	**Drop cloth**	**Sweep net**
1st two weeks of squaring	1-2 per 6 ft-row with unacceptable square set	8 per 100 sweeps with unacceptable square set
3rd week of squaring to 1st bloom	2 per 6 ft-row with unacceptable square set	15 per 100 sweeps with unacceptable square set
After peak bloom	4 per 6 ft-row with unacceptable fruit set the first 4-5 weeks	15- 20 per 100 sweeps with unacceptable fruit set first 4-5 weeks

*Sweep net – standard 15-inch net, sample 1-row at a time taking 15-25 sweeps. Recommended before peak bloom.

Drop cloth – black is recommended; 3-ft sampling area, sample 2-rows. Recommended after peak bloom.

Cease sampling and treating when NAWF = 5+ 350 DD60's.

If one encounters a lygus population above economic thresholds the same precautions should be considered as those for cotton fleahopper control. Also, damage occurring with the presence of lygus does not necessarily mean chemical control is warranted. Dr Kerns has narrowed his list to Orthene, Vydate, Carbine, and pyrethroids. He suggested not to use pyrethroids if aphids are present because of threat of aphid flareup. Orthene at 0.75-1.0 lb/acre will provide excellent control. If aphids or mites are present Carbine may be used since it can provide effective control and is easy on most beneficials. Vydate at 13-17 oz/acre has performed well in his trials.

Retirement - Terry Pitts, OSU Southwest Area Extension Specialist - IPM

Terry Pitts has made the decision to retire and we would like to have you join us for his retirement celebration. There will be a come-and-go reception on Wednesday, July 6, 2011 from 2:00 to 4:00 pm at the OSU Southwest Research and Extension Center 3 miles south of Altus on Highway 283. Refreshments will be served. Please help us celebrate a successful career and wish Terry well in his retirement.

If you wish to contribute to a retirement gift for Terry, please make the check to the Oklahoma Cotton Council and note that it is for the Terry Pitts Retirement Fund and **mail not later than July 1** to:

Oklahoma Cotton Council
c/o Harvey Schroeder
809 Willard
Frederick, OK 73542

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SEND US A COMMENT BY EMAIL

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