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# FOCUS on South Plains Agriculture

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## Editors' Note: Last Regular Issue

This issue marks the end of our weekly publication schedule for FOCUS on South Plains Agriculture. From this point forward until mid-April 2008, FOCUS will be published on an "as needed" basis as crop production issues arise.  
RPP & DLK

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## Cotton Insects

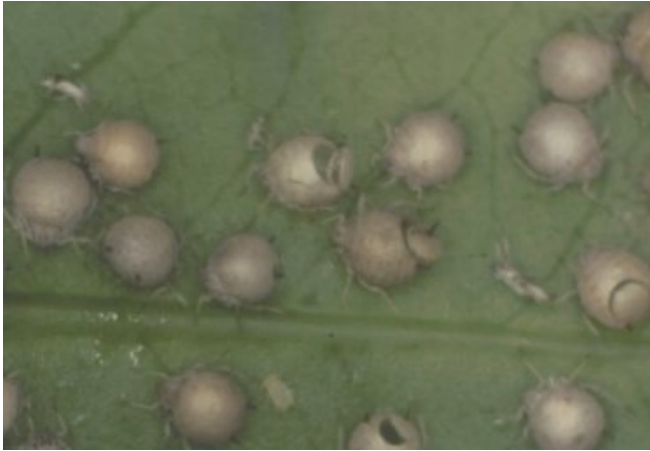
Time is running out for young bolls to collect enough heat units (HU) for maturity. There are roughly 220 HUs available between now and the end of October at Lubbock based on the long-term weather records. Based on what HUs may be available, a bloom after August 10<sup>th</sup> is probably not worth protecting from insect damage. This date would be about August 5<sup>th</sup> for Amarillo and August 20<sup>th</sup> for Lamesa. For the Lubbock area, August 1 bolls have approximately 800 HUs; August 5, 731 HUs; August 10, 614 HUs; August 15, 497 HUs; and August 20, 397 HUs.

## Cotton Aphids

Cotton aphid numbers remain low in most areas, and the rains have helped reduce what aphids were there. Where aphids were making a resurgence and numbers were averaging close to 100 aphids per leaf several week ago, they are now very low, averaging less than 10 per leaf. The decline of these populations was due to rain, general predation by lady beetles and other predators, heavy parasitism (as evident by the large



number of mummies), and the occurrence of the aphid killing fungus *Neozygites fresenii*.



*The presence of mummies indicates the activity of aphid parasitoids*



*The aphid killing fungi, *Neozygites fresenii* is common and appears to be most prevalent on aphids infesting the lower leaves*

For the most part I am not as concerned about aphid resurgence as I was several weeks ago, but I am still wary. If you see aphids building in your field prior to first cracked boll, at this time I would not be antsy to pull the insecticide trigger. However, as soon as that first boll cracks we need to be extremely cautious. At that time the aphid action threshold is only 10-15 aphids per 5<sup>th</sup> main stem node leaf. Do not let late season aphids get away from you. One sticky cotton field can stigmatize an entire area as a “sticky cotton” area

([click here for more information on the sticky cotton](#)). If you need to treat for aphids late in the season, and you have previously treated for aphids in that field with Intruder, Centric, or Tri-max Pro, I suggest you use an alternative chemistry for resistance management purposes. We want to avoid treating aphids with the same class of chemistry consecutive times. Frankly, this doesn't leave a lot of choices. In our trials this year, we have observed good efficacy from Bidrin at 8 fl-oz/ac, Bidrin XP at 6.4 fl-oz/ac, and Endosulfan at 1.33 qt/ac. Carbine at 1.5 oz/ac has also been effective, but under certain environmental conditions may be slow to act ([click here to view the results from our 2007 aphid management tests](#)).

If you end up with open bolls and some honeydew accumulation, hopefully a timely rain event will help clean the field up. However, if rain is not in the forecast there are ways to deal with it if you have overhead irrigation. You can raise your emitters on your pivot irrigation systems so that the water is washing over the plant. Research has shown that between 0.75 and 1.0 inch of irrigation applied in this manner will effectively wash off the stickiness ([click here to view washing sticky cotton data](#)).

### Spider Mites

I've noticed patches of spider mites throughout the South Plains. Although light in most fields there have been a number of fields with moderate to very high populations. For a more detailed description of spider mites in cotton, see the August 24, 2007 edition of FOCUS.

Where severe, these populations appear to have declined considerably, although the damage had already occurred. The natural declines I have noticed seem to be due more to the plants being so severely affected that they can no longer support the spider mites. On a brighter note, I have been monitoring several sites with moderate to fairly high populations of spider mites where the mite populations have become stagnant. These populations appear to be being kept in check by



predacious thrips. Where most severe it is obvious that the outbreak of mites was the result of insecticide use targeting other pests; namely pyrethroids targeting bollworms or neonicotinoids (Centric, Trimax Pro or Intruder) targeting aphids. If you observe spider mites at moderate levels and need to treat for bollworms, you might seriously consider using something other than a pyrethroid for worm control. Products such as Steward, Tracer, or Denim would be good alternatives.



*The underside of a spider mite damaged leaf*



*Yellowed and reddened leaves is evidence of spider mite feeding*



*Cotton defoliated by spider mites*



*Spider mite "hot spots" are often noticeable from the road*

The current Texas Cooperative Extension recommendation for treating spider mites on cotton on the High Plains is to treat when the mites begin to cause noticeable damage. This is a pretty loose threshold and subject to a great deal of subjective judgment. On cotton with developing bolls, cotton producing areas that tend to have more problems with mites recommend treating when 30-50% of the 5<sup>th</sup> main stem node leaves show the presence of mites. I think that cotton at or near cutout can tolerate a higher infestation, maybe as high as 85% of the leaves showing the presence of mite damage, and mite control should not be required once open bolls are present. At the point of the season we are currently in, I do not think we will see much yield loss due to

mites, but we may see some delayed boll maturity and reduction in mic.

Based on the "[Suggested Insecticides for Managing Cotton Insects in the High Plains, Rolling Plains and Trans Pecos Areas of Texas 2007](#)" guide, products tested and recommend for control of spider mites include Zephyr, Dicofol/Kelthane, Methyl parathion, Curacron and Comite. However, there are a number of newer miticides that are not listed in the guide because they had not been evaluated for spider mite control in Texas. These include Acramite, Fujimite, Oberon, and Zeal. We have put out several miticide tests this year, evaluating several new and old miticides, as well as some that are current in development ([click here to view mite data](#)). A number of products have demonstrated good efficacy in late season cotton, including Oberon, Zephyr, Comite II and Fujimite. The most striking results I noticed from these tests was the time required to see good results, even from products I thought would be fast acting. Although we were seeing a reduction in the mite populations by these products at 7 DAT, substantial control for some products was not observed until 14 DAT.

### **Cotton Bollworms**

Cotton bollworms have been fairly low from Lubbock south, but late, lush cotton north of Lubbock has seen some fairly high egg lays. Most fields are beyond the bollworm egg lay susceptibility stage. Remember that a boll that has accumulated 450 HUs is considered safe from new bollworm egg lays, but may still be susceptible to established populations.

### **Cotton Pests Around the State**

#### **Rolling Plains (reported by Ed Bynum, IPM Agent, Jones, Mitchell, Nolan, and Scurry counties)**

Moth trap numbers this past week in Jones (near Stamford), Mitchell, Nolan, and Scurry county have been averaging less than 10 cotton

bollworm moths per night. The trap in Jones County, averaged 35 bollworm moths per nights. Generally, with the maturity of most of the cotton, fields should be safe from worm damage. Stink-bugs have been noted in fairly high numbers some late cotton. The stink bugs (Conchuela, Green, and Rice species) may be coming from matured grain sorghum fields. Stink bugs infestations are generally clumped near field margins. Currently, cotton aphids are not a problem, but could build backup before harvest.

#### **Southern Rolling Plains (reported by Richard Minzenmayer, IPM Agent, Runnels and Tom Green counties)**

Cotton has made a lot of progress the past three weeks. Rainfall amounts varied from two-tenths (at my house) to over 2.5-inches (Winters, Wall communities). Most cotton is physiologically safe from bollworm damage.

#### **St. Lawrence Valley (reported by Warren Multer, IPM Agent, Glasscock, Reagan, and Upton Counties)**

Right now, cotton insect activity remains fairly light. There are a few fields that worms could still cause some damage to late bolls, but most are safe now. Cotton aphid populations are down now, but as cotton begins to open, lower populations can cause considerable honey dew on the lint. DLK

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## **Cotton Agronomy**

### **Crop Progress Overview**

After a great month of August, September has been one of "normal" temperatures thus far ([click here to view September temperatures](#)). Recent weather conditions have been cool and cloudy, although for several days we had well above normal temperatures. The 10-day forecast

indicates a slightly higher than normal temperature outlook. Overall heat unit accumulation at Lubbock from May 1 through September 12 has now reached almost 2000. From May 1 through September 12 in other seasons at Lubbock, we had accumulated 2097 in 2004, 2220 in 2005, and 2490 in 2006 ([click here to view LTA and 2004-07 HU accumulation](#)). The long-term average total for Lubbock from May 1 through September 12 is 2157. So, the overall growing season from May 1 through September 12 is about 8% below normal ([click here to view LTA vs 2006 and 2007 HU accumulation](#)). We do have some fields with open cotton at this time; however, most of these are lower yielding dryland.

The September 12 USDA crop report has been released and the 2007 projected yields are available. District 1S has a projected total bales of 3.61 million from 2.6 million planted acres, with 2.48 million harvested. District 1N has a projected total bales of 900,000 from 590,000 planted acres with 540,000 estimated for harvest. This is a total of about 4.5 million bales from just over 3 million estimated for harvest. If this holds true, 2007 could supplant 2006 as the third largest crop (at about 4.1 million bales). We will need a good remainder of September and good October to properly finish many fields. Many areas have received good to excellent rainfall in September and many producers have terminated irrigation ([click here to view LTA vs 2007 rainfall](#)). For a distribution of this rainfall, [click here](#).

### Countdown After Cutout

Many fields are late this year due to later planting dates and a cooler growing season than what we've had for some time. Some fields have recently reached cutout (here defined as Nodes Above White Flower or NAWF=5 on a steep decline). COTMAN uses 850 heat units past bloom as a point at which a bloom can make a "normal" boll. In the High Plains, heat unit accumulations of 750 past bloom will probably make an "acceptable boll" that may not have "normal" lint production and may be lower quality (low micronaire).

We have developed a table that indicates where we are as of September 12 ([click here to view table](#)). It is based on actual Lubbock 2007 heat units for cutout from August 1, and August 10, and August 20 and from September 12 forward, it uses "temperature normals" (30-year long-term average) as projections for each day.

For example, the table shows that for a field that reached cutout on August 10, that bloom was able to obtain 350 heat units (probably safe from *Lygus*) by about August 28. The 450 total, probably safe from a bollworm egg lay, occurred around September 3. If we encounter "normal" heat units from September 12 forward, this boll should obtain good maturity (850 heat units) about October 19.

Based on some irrigation termination projects with COTMAN when using center pivot irrigation (see below), the possible irrigation termination date could have occurred sometime around September 6 (hopefully most fields have terminated irrigation now due to recent rainfall). One can tell that unless we have an outstanding fall, the cotton blooms on August 20th at Lubbock will encounter difficulty in making a "mature boll."

### 2007 Harvest Aid-Guide Available

As mentioned last week, we have now updated the High Plains and Northern Rolling Plains Cotton Harvest-Aid Guide. For more information on new products/changes, see the August 31 issue of FOCUS. The 2007 guide has been posted on the Lubbock Center Web site and is available here:

<http://lubbock.tamu.edu/cotton/pdf/hpcottonharvestaidguide07.pdf>

Several harvest-aid trials are planned at this time. Dr. Mark Kelley will be establishing trials as soon as we find some cotton mature enough for applications.



## Aphid Honeydew Effect on Paraquat Harvest Aid Efficacy

We still have a few aphids out there in some fields. We know that aphid honeydew can potentially cause sticky cotton if we don't get some rainfall to wash off the honeydew from open bolls. Although we have few fields with open bolls out at this time, I want to let our producers know that honeydew contaminated leaves (typically with associated dust entrapment) don't respond very well to applications of paraquat based harvest aid materials.

## September Meetings/Tours/Industry Field Days

Although fall crop tours have begun, we still have several on the calendar, as well as some scheduled harvest aid meetings. Also, industry field days may also be of interest. Here are the ones of which I am aware. For specific information, call Extension agents or industry representatives for more details. RKB

- Floyd County Crop Tour, September 18
- Swisher County Harvest Aid Meeting (Tulia), September 18
- Lynn County Ag Tour, September 19
- Lamb County Harvest Aid Meeting (Sudan), September 19
- Crosby County Crop Tour and Harvest Aid Update, September 21
- Hale County Harvest Aid Meeting, September 25
- Castro County Harvest Aid Meeting (Dodd), September 26
- Mitchell County Ag Tour, October 11

### Industry Field Days:

### Date:

- Americot Field Day, Lubbock Sept. 25, 9:45 a.m.
- FiberMax Field Day, Lubbock Sept. 26 (southern producers)
- FiberMax Field Day, Lubbock Sept. 27 (northern producers)
- Deltapine Field Day, Lorenzo Oct. 3, 10:00 a.m.

## Cotton Market Update

Of course the news this week is the latest World Ag Supply/Demand Estimate, or WASDE Report, that came out yesterday. Along with that we received a new estimate of Texas production by reporting district. The High Plains of Texas, as represented by TASS District 1-N and 1-S, saw the estimate raised 560,000 bales to 4.51 million. That increase combined with the rest of the district estimates to put the Texas upland cotton crop at 7 million bales, the third largest in history. The 900,000-bale increase for Texas was offset by decreases in other states to raise the US total 460,000 bales to 17.81 million. World production was raised 1.26 million bales, which means 70% of the forecasted increase in production will come from Texas. Total world use remained unchanged from last month resulting in increased ending stocks and a world stocks-to-use ratio of 40.4% up slightly from 40.3% last month. Had it not been for a 1.07 million bale decrease in beginning stocks, the ending stocks-to-use ratio would have climbed back over 41%.

The WASDE report appeared to be right in line with what the trade was expecting as the December contract continues to follow the uptrend confirmed last week by the crossover of the 9 and 18-day moving averages. Today the 9-day is set to cross the 40-day average, further confirming the trend to higher prices. Since cotton fundamentals remain flat to slightly bearish, current trends are highly related to the current prices for wheat and soybeans. As Mid-south and Delta farmers harvest their cotton, they will be deciding very early whether to forego next years crop in favor of a wheat/bean rotation, which would need a commitment immediately after harvest. I have read economists comments from the region which would suggest that the current December 08 cotton price doesn't come anywhere near delivering the kind of profitability the wheat/bean rotation has to offer.

This week saw a nearly 2 cent rise in December 07 futures, possibly offering some incentive to get the few remaining 06 bales out of the loan. Loan stocks have begun increasing as the Coastal Bend crop starts to trickle in. The Corpus Christi classing office has only classed 243,348 bales of the approximately 900,000 bales expected. They would normally be close to wrapping things up right now.

Net Upland sales of 100,500 running bales were 64 percent below the prior week and 73 percent under the prior 4-week average. The major buyers were Indonesia (24,000), China (20,400), South Korea (15,100), Mexico (13,500), and Turkey (10,000). Sales of 9,400 for delivery in 2008/09 were for Mexico (5,900) and El Salvador (3,500). Exports of 212,300 were 35 percent below the week earlier and 34 percent under the prior 4-week average. The primary destinations were China (90,400), Mexico (32,300), Turkey (28,900), and Thailand (11,400). Net American Pima sales of 3,800 were primarily for Indonesia (2,100), China (1,500), and India (1,200). Exports of 7,100 were mainly to China (2,100), India (1,400), and Turkey (1,000). Both export sales and shipments slowed tremendously this week taking us below the necessary pace to reach the unchanged USDA estimate of 16.7 million bales.

The decline in certified warehouse stocks halted this week as the number of bales increased slightly to 479,908 as of the close of business yesterday. A few years ago we would have said this was an overly oppressive number of stocks, but in the context of where it has been in more recent times, it is a more reasonable number. JAY

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## Small Grains Agronomy

### Recurring Questions in Grain Sorghum

#### When can I stop irrigating grain sorghum?

I initially addressed this topic in the 12<sup>th</sup> FOCUS edition on August 17<sup>th</sup>. As I noted then,

as a rule of thumb if good soil moisture is still available to the plant—at least 1-2”—then terminate near soft dough. The sorghum seed will proceed through grain development from watery ripe to milky ripe to mealy ripe then begins to firm at soft dough on to hard dough. Then physiological maturity occurs at black layer, the appearance of a black dot on the tip of the seed. This usually occurs about 10-12 days after soft dough under warm conditions. Overall, grain sorghum usually takes about 30-35 days from flowering to physiological maturity.

Since my first comments, I also note to producers that you must be sure to check many heads and check the whole head. Some difference in maturity will be observed on each head as seeds at the tip could easily be 7 days older than seeds at the bottom of the head. Sorghum flowers at the tip first then moves down, and there could be as little as four days difference in flowering and pollination for a small head to as much as nine days for a large head.

#### Can I use the color of the grain sorghum head to determine irrigation termination?

Not reliably. You still need to do a hands on check of the heads. Turnrow observations of sorghum fields do not tell you how much soil moisture is still available, which could be from none to an amount that is more than twice what you may apply in one irrigation. Head coloration may vary depending on hybrid as some ‘red’ sorghums are not as red as others.

My observations over the past couple of weeks suggest in general when the seed in the head begins to take on an orange or reddish tint, the seed is most likely at the milk stage. As a field turns color such that you readily observe it while driving down the road then the sorghum grain tends to be in the mealy stage to perhaps just entering soft dough. But this is not a reliable means of deciding to irrigate again unless you check for available soil moisture and the seed stage of growth.

Seed moisture at black layer is ~25-35%, but harvest must be below 20% moisture with drying required. Grain can be harvested without drying at 13 to 14% grain moisture to avoid dockage (depends on delivery point).

#### Why do I have sorghum ergot?

Sorghum ergot is a fungal disease that only affects unfertilized ovaries. It produces a sticky honeydew of droplets on infected seed. Once pollination and fertilization occur the individual seed will not develop sorghum ergot. Sorghum ergo is largely a concern only on seed production fields.

Sorghum ergot usually does not develop until nighttime temperatures drop to 55 F, but this year I have already received several reports. Wet weather can contribute to the disease incidence. The disease can also more likely be found when there is Johnson grass in the area or when there is big difference of maturity within the same field.

#### Can I spray a fungicide to control ergot?

If you have a seed production field your seed contractor may have guidelines to follow. Texas A&M plant pathologist Dr. Tom Isakeit notes that there is usually little benefit to spraying fields with sorghum ergot. In the past, several fungicides including Tilt received Section 18 exemptions for spraying, but these Section 18 labels have not been pursued for several years. Dr. Isakeit notes that generally it is best to wait for the crop to dry down.

For more information on sorghum ergot consult the Texas A&M information at <http://sanangelo.tamu.edu/agronomy/sorghum/15179.pdf>

#### Can I safely feed sorghum/sudan that has ergot to cattle?

Yes. There is no negative effect on the animal.

#### Will wheat drill OK into standing grain sorghum stubble?

It makes sense, especially if the ground is not listed, to drill the wheat directly with the rows of sorghum stubble. When combining the sorghum make sure the trash coming out of the combine is spread as far as you can lest the wheat not be planted well right behind the combine. Don't mow the stubble off at any time. I don't like the idea of tillage to get rid of the stubble if you can drill it well, and I discourage breaking the stubble under 'to increase organic matter' (which this doesn't measurably do). The wheat should come up through the sorghum stubble which will gradually collapse and hit the ground. Any stubble that might be in the way in June of next year will pass harmlessly through the combine. Because a few of the drill rows will indeed end up on the sorghum crowns, a drill with near no-till capabilities will succeed better.

If your ground is listed then seeding wheat could give differences in stand, enough that some folks won't take the time to reset tension of drill rows on beds vs. furrows. If you can't drill well on the uneven ground then you may need to smooth the field. No till drills might be needed to cut through the stubble, however, if it is incorporated.

#### Can wheat be planted behind Milo Pro (propazine) herbicide?

Yes. The rotation restriction from propazine application to drilling wheat and other small grains is only 120 days. In contrast atrazine is not labeled for rotation to wheat even the following year (the label is vague about wheat drilling in the fall the year after atrazine is applied).

#### **Wheat Grain**

Contract prices for 2008 wheat grain are about \$0.50/bu below the July 2008 futures placing current contracts for 2008 new crop about \$5.30-5.40/bushel.



### Beardless Wheat and Grain Yield

Beardless wheats in general (Longhorn, Lockett, WeatherMaster 135, TAM 109, Russian beardless) have demonstrated as a class about a 10-20% reduced grain yield potential vs. good grain yielding bearded wheats (TAM 110, Jagalene, Dumas, TAM 111, etc.) for both irrigated and dryland wheat production.

If you know you are going to grain, choose a grain type wheat (i.e., bearded). If you know you might go to grain, you may still be better off going with a bearded grain wheat.

Having a beardless wheat, however, gives you important options for baling after boot stage (no awns) or grazing after boot stage. A new beardless wheat variety Texas A&M has tested in the Texas High Plains for three years has consistently produced better grain yield of ~10% vs. other beardless wheats. The variety is Deliver from Oklahoma State. Here are some yields from Brent Bean's and my data, which except for singling out the Gaines Co. irrigated data, include 3-6 test sites per year for both irrigated and dryland: [See results for TX High Plains, 2005-2007 \(all date in bushels per acre\)](#). Deliver test weight is consistently about 1 lb. per bushel higher than Longhorn.

Simply don't know if you may go to grain or bale? Then Deliver might give you a more comfortable option. Again, if grain only is your goal then grain varieties like Dumas, Jagalene, and TAM 111 are top choices for irrigated, and TAM 111, Jagalene, TAM 112, TAM 110, Cutter for dryland.

Here are additional comments from Brent Bean, Extension agronomist, Amarillo: "I have been recommending that people switch to Deliver vs. Longhorn. Not only does Deliver have better yield potential than Longhorn, but it also does not have high temperature dormancy so you can plant it earlier, and it reaches hollow stem stage a little later which might be an advantage from a grazing standpoint."

At last report Gayland Ward Seed near Hereford carries Deliver and Scott Seed, Hereford may also carry it.

### Old NK 812 Wheat Variety & Grain Yield

This 20+ year old wheat variety is still a favorite among many wheat producers in Terry, Yoakum, and Gaines counties. Several producers have maintained the seed as best they could, though it is subject to gradual contamination over time. Producers have long felt that NK 812 performed well in the sandy loams, loamy sands, and sugar sands in much of the region. Past forage trial observations in Gaines Co. noted longer leaves and perhaps better ground coverage with NK 812, but one-time hay harvest yields were below average.

When NK 812 is put in side-by-side tests with other wheat varieties—using Gaines Co. farmers' seed—NK 812 yields have been low. From the Gaines Co. trials harvested in 2004-2006 come these results:

#### Gaines County Irrigated (bushels/acre)

|                | 2004-2006          |
|----------------|--------------------|
| <u>Variety</u> | <u>3-Year Avg.</u> |
| NK 812         | 39                 |
| Cutter         | 51                 |
| Dumas          | 51                 |
| Jagalene       | 53                 |
| TAM 111        | 54                 |
| Trial Avg.     | 46                 |

NK 812 has produced good yields in individual years, sometimes 70 and 80 bushels/acre, but what could the potential be in the same environment with the improved varieties noted above? I suggest producers still planting NK 812 try several bags of some of the noted improved varieties. CT

# FOCUS on South Plains Agriculture

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