

## IN THIS ISSUE

### Cotton Crop Overview

### Cotton Monitoring

### Cotton Insects

- Fleahoppers no longer a concern
- Lygus bug numbers very low
- Bollworms remaining below threshold
- Pink bollworms not a problem this year
- Beet armyworms staging in the Rolling Plains
- Aphids could develop the next 2 weeks
- Boll weevil eradication watch

### Cotton Diseases

### Peanut Diseases

#### NEWSLETTER CONTRIBUTORS

James F. Leser, Extension Entomologist-Retired  
Randy Boman, Extension Agronomist  
Jason Woodward, Extension Plant Pathologist

## COTTON CROP OVERVIEW

### **Weather conditions remain hot and dry.**

There have been some spotty showers but for the most part if you don't have sufficient irrigation water your fields are suffering. We are approaching records for the number of 100-degree highs. I believe that is 26 in recent years (29 in 1934) and we should hit 20 today. A slight cooling trend is in store beginning Saturday but it won't last. Face it folks, the area is in for a hot, dry season.

Dryland acreage abandonment is probably approaching a million acres by now maybe 1.3 million with more fields expected to yield below an acceptable level unless rains come

soon. Even then there are fields beyond salvage, at hard cutout. If you have fields at about five nodes above white flower (NAWF=5) and have limited water, it may not pay to irrigate in this situation. Fields with NAWF=7-9 will benefit greatly with continued watering. Some of these fields have fantastic yield potential (5 plus bales). Unfortunately, there is not enough water in most systems to



keep up with the water demands of our crop at this time. Some wells have already lost suction. Some producers are wondering just how much their wallet can stand. A tough year all around. But at least the insect situation is not contributing to the woes of producers.

Most cotton is blooming by now with the earliest fields at peak bloom. If your fields are not blooming by now you will have a low yield potential. Fields with limited irrigation capacity will have trouble holding on to all their fruit, especially 2<sup>nd</sup> and 3<sup>rd</sup> positions. First positions are generally safe. If we ever do get into a rainy, cloudy period, expect considerable boll shed. **JFL**

## COTTON MONITORING

Monitoring fruiting is an important management consideration. First position fruit

## COTTON INSECTS

is very quickly counted, and is generally adequate for “getting a handle on the crop” (see [Figure 1](#)). At early bloom, up to 80% of the harvestable crop will be on the plant in the form of squares and blooms. We like to see at least 80% square retention going into the first week of bloom. Many times, High Plains fields will enter blooming with square retention greater than that. Plant mapping can be used to help monitor the progress of the crop and determine some important crop factors.

Important plant mapping data at early bloom are:

1. Total 1st position squares present and missing (retained squares / total square sites = % square retention). Square retention goal is 75 - 85% 14 days after early bloom.
2. Total 1st position bolls present and missing (retained bolls / total boll sites = % boll retention).
3. Nodes above white flower (NAWF). To determine NAWF see [Figure 2](#).

Nodes above white flower at first bloom gives an indication of crop vigor and yield potential. Typically, NAWF should be high at first bloom and then decrease as the boll load ties down the plant, and mainstem node production rate slows or ceases. For the High Plains region, greater than 8 NAWF could be considered excellent, 6-7--- reduced yield potential possible unless adequate irrigation is quickly initiated or rainfall obtained, 4-5 or less---cutout imminent on more determinate varieties. Of course with so many varieties and many of the picker types being more indeterminate than many of our older stripper types, their ability to hang in there without cutting out is certainly worth consideration. Water (rainfall, irrigation) is the key with these variety types. In many years, we can enter bloom in irrigated fields at 8 or so NAWF. Many fields that were stressed for moisture may have a short bloom period due to few NAWF at early bloom. Copied from July 22, 2005 FOCUS newsletter. **RB**

High acreage abandonment, high temperatures and low rainfall amounts have kept most insect problems on the back burner. Thrips were a problem but not for an extended period. Cotton fleahoppers never did get any traction and I doubt that more than a handful of fields got treated. Lygus bugs have kept a low profile in cotton as well as in alternate weed hosts. This insect rarely becomes a pest until sometime in August or not at all. Bollworms have moved into the area but remain at lower numbers. Beet armyworms are staging in the Rolling Plains but have yet to have much impact up here. Aphids are still few and far between and pink bollworms---well they just aren't an issue this year. And finally, boll weevil numbers are almost nonexistent across our area. Heat and the eradication program are to be given equal credit.

**Cotton fleahoppers were not a problem** this year. Except for some very late fields, fleahoppers can no longer be considered a pest. Fleahoppers will continue to graze on new pinhead-sized squares but these will be unimportant to overall yield determination. These tiny square thieves can now be counted on to help us with pest problems. They will prey on other pests such as bollworm eggs.

Our square sets have been especially good this year where weather has not affected our crop.

Wind and blowing sand have taken their toll on some squaring fields but insects have had little impact on squaring. Most irrigated fields that avoided major weathering problems have square sets 80% or above.



**Fleahopper feeding on egg**

**Lygus bug (western tarnished plant bugs) numbers are low** in both cotton fields and alternate weed hosts. There is little threat at this time for movement of any consequence into cotton adjacent to weed hosts. Alfalfa could still pose a late season problem source. Remember that Lygus bugs are generally not much of a threat until later in August and into September.

Remember too that bolls are still vulnerable to damage and hence yield loss and fiber quality reduction until at least 350 Heat Units have accumulated past white flower.



**Lygus damaged boll**

**The bollworm activity continues** in mostly the southern areas of the High Plains. Eggs continue to be found and later small worms but few of these make it past ½ inch size (5 days old). Heat, along with some natural enemy activity has not allowed any of these low-grade infestations to pass treatment levels. Caterpillar infestations have remained below our nominal threshold of 10,000 ¼” or smaller larvae per acre. Highest counts have rarely exceeded 5,000 per acre and 0-2,000 per acre is more the norm.

We are of course talking about non-Bt varieties. Bollgard I varieties will handle infestations we are experiencing now. If numbers climb to a more acute level, then only the Bollgard II varieties will provide sufficient protection.

The threshold in Bt cottons would be about 5,000 medium caterpillars per acre. These are 3/8” long or larger. This threshold would be the same for non-Bt varieties too. Remember that

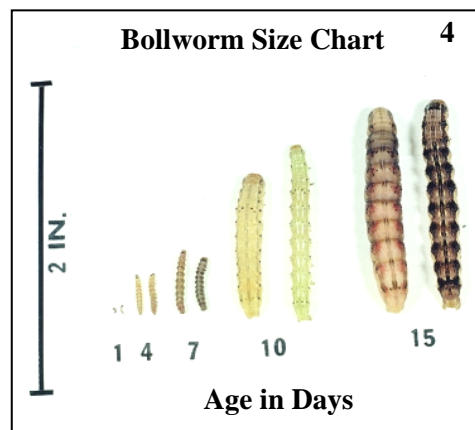
as caterpillars increase in size above ½”, their damage potential also increases and the yield savings from spraying decreases.

Bollworm survival will increase as cotton grows taller and the canopy closes, affording some shading from the excessive heat. If we enter a rainy spell, survival will also increase. So be on your toes.

Pyrethroids are still the best bet but efficacy will be more in the 85-90% range than the 95% plus range we were used to. Coverage is not an issue in most fields this year because of the smaller stature of most of our cotton and the skippy stands found in many fields. But if pyrethroids do get used, watch out for the development of aphid infestations over the following two weeks.

I am again providing [insecticide-rating charts](#) this year for not only caterpillars but also a whole host of other potential pests. These are national rankings that research and extension cotton entomologists from across the cotton belt compile at a meeting in October each year. I have not received the 2005 updated ones as yet. My only criticism is that we tend to get better performance out of these foliar insecticides than our friends to the east and west of Texas.

I don't expect much influence from bollworm migrations this year. There has not been much infestation development to the south of us this year and time is running out for any southern influence.



**Pink bollworm numbers remain well below** last year's numbers caught in traps thus far. Highest trap counts were found in Gaines, Reagan, Upton, Bailey and Yoakum counties through this week. The

remaining counties from Swisher and Castro counties to the north, down to Tom Green and Runnels to the south, have been capturing less



than 5 per night (the nominal threshold for pre-boll cotton). It looks like the pink bollworm problem that increased the last 3-5 years is fading into the sunset again.

Once bolls are present, you must base treatment decisions on infested bolls, not trap numbers.

To determine if a boll is infested you must break it open and look at the inside of the carpal or boll wall. Look for a tiny wart; some associated stained lint and a worm that may be very small, almost clear at first and thread-like in size. Later they grow to a size easily found and attain their characteristic pink color. Don't confuse the wart produced by Lygus bug feeding with that of a pinkie. They are very similar but of course no larvae will be found. For more pink bollworm information see [Pink Bollworm Management Tips I](#) in the Crop Production Guide Series of FOCUS and [Pink Bollworm Management In Texas](#).



**Pink bollworm wart and larvae**

**Beet armyworms appear to be staging** in the Rolling Plains area to the south and east, at least according to the trap records provided by the Texas Boll Weevil Eradication Foundation.

Some egg laying activity has been observed in our area cotton fields but larval numbers have remained low. This has surprised me as I expected more activity this year with our hot, dry



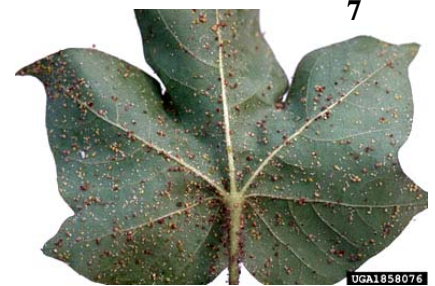
**BAW "hit"**

conditions and less than thrifty crop. The early infestation detection threshold for treating fields is 2 active "hits" (hatching egg masses)

per 100 row feet inspected. Later in the season when larval infestations have developed and spread out, the remedial threshold is 20,000 small larvae per acre with at least 10% of the inspected plants infested. Intrepid is still my first choice for beet armyworm control.

**Aphid infestations remain below radar** in our area. In fact, aphids have not been much of a problem across the entire state.

To be sure, one can find infested plants in many of our fields but infestation numbers remain very low in most cases and



**Aphid infested leaf**

infestations remain mostly in the terminal area. Once aphids spread out from the plant terminal, one can expect the potential for damaging infestations to increase dramatically. The treatment level for aphids in cotton with maturing bolls is 50 or more per leaf on average. It usually takes 10 or more days at this lower level to influence boll size and final yield. Intruder is still my primary insecticide for this pest.

**Boll weevil trap catches are almost nonexistent** in the High Plains area this week and for the

year. Last year by this time we had sprayed over 124,000 acres in the Permian Basin zone but less than 15,000



acres this year. The St. Lawrence zone caught only 9 weevils the past week versus 167 last year for the same period. It looks like we have pretty much eliminated the weevil as a pest of High Plains cotton from Lubbock north and are well on the way in the southern areas.

**Average number of boll weevils caught per trap inspection and sprayed acreage through July 9. Number of boll weevils caught for the week ending July 9, 2006.**

High Plains Zone	2005	2006	Sprayed acres	Total weevils caught this week
Permian Basin	0.0405	0.0005	14,466	16
Western High Plains	0	0.00002	0	0
Southern High Plains	0.00004	0	0	0
Northern High Plains	0	0	0	0
Northwest Plains	0	0	0	0
Panhandle	0	0	0	0
St. Lawrence	0.5159	0.0014	6,070	11

**Average number of boll weevils caught per trap inspection and sprayed acreage through July 16. Number of boll weevils caught for the week ending July 16, 2006.**

High Plains Zone	2005	2006	Sprayed acres	Total weevils caught this week
Permian Basin	0.0345	0.0043	14,516	8
Western High Plains	0.00001	0.00002	299	2
Southern High Plains	0.00004	0	0	0
Northern High Plains	0	0	0	0
Northwest Plains	0	0	0	0
Panhandle	0	0	0	0
St. Lawrence	0.3952	0.0125	6,714	9

**The Valley is experiencing an increase in weevil numbers the last 2 weeks, partly because of the one month moratorium on**

spraying, partly because of rain delays to spraying but mostly because the crop is mainly open and no longer attractive to weevils in most fields. **JFL**

## COTTON DISEASES

**Verticillium wilt continues to be a major problem** this season despite high temperatures. The soil borne fungus *Verticillium dahliae*, causal agent of Verticillium wilt, is indigenous throughout the High Plains. The pathogen survives in the soil and may persist for many years as specialized structures (microsclerotia), which germinate in response to cotton root exudates. The fungus establishes itself on the root surface and penetrates deep into the root where it spreads, ultimately plugging the vascular system. Although infections occur in root and progress through the stems, foliar symptoms are observed first, as a result of blocked water channels.

Early foliar symptoms consist of chlorosis or yellowing between the veins, whereas, necrosis and/or defoliation may occur as the disease progresses.

Diagonal cuts of infected stems reveal dark streaks of discoloration through the center of the stem. This vascular discoloration may look continuous when cut longitudinally, and may be confused with Fusarium

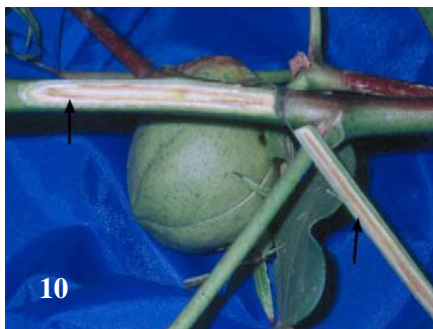


**Early foliar symptoms**

wilt. Therefore, proper disease diagnosis is required to confirm which pathogen you are dealing with.

Due to the nature of the disease and the fact that no corrective materials can be applied to plants exhibiting symptoms, management decisions should be made prior to planting.

Control of Verticillium wilt requires an integrated approach. The cornerstone of any management strategy is to use the most resistant or tolerant varieties available. Avoid excessive irrigation, as increased moisture leads to cooler soil temperatures. Cultural practices such as maintaining adequate nitrogen levels and the use of raised beds to improve drainage can also impact disease development. Minimizing the movement of soil out of infested areas into areas free of the pathogen will restrict spread of the disease. Finally, avoid rotation with peanut, which can increase populations of the fungus in the soil. If you have any questions regarding Verticillium wilt please contact personnel at the Lubbock Center. **JW**



**Vascular discoloration**

early in the morning. As the disease progresses, infected stems have a bleached appearance and become shredded ([photo 12](#)). Small, black, irregular-shaped structures (sclerotia) may be produced on or within infected tissues ([photo 13](#)). Currently, two fungicides (Omega 500F, 1.0-1.5 pints/acre; and Endura, 10.0 fl oz/acre) are labeled for control of Sclerotinia blight.

In addition to Sclerotinia blight, reports of other fungal diseases have been received from the area. According to Clyde Crumley (Gaines County IPM Agent), low levels of foliar diseases such as, early leaf spot ([photo 14](#)), and pepper spot ([photo 15](#)); as well as the pythium and Rhizoctonia pod rot complex ([photo 16](#)) are also being found. Fungicide applications are required to minimize the damaging effects of these pathogens. Products, rates, timing, methods of application, as well as cost differ depending on which disease problem(s) you are facing and the products required for control. For more information on which products are labeled for control of the aforementioned diseases consult the Peanut Disease and Nematode Control Recommendations website at (<http://stephenville.tamu.edu/pp/pdncr/index.html>), or contact personnel at the Lubbock Center. **JW**

## PEANUT DISEASES

**Peanut diseases flaring up in the west Texas production region.** Despite the hot dry conditions we have been experiencing over the past few weeks, cases of Sclerotinia blight have been reported in areas of western Gaines County. Sclerotinia blight, caused by the soil borne fungus *Sclerotinia minor*, typically occurs mid-to late-season. However, symptoms can occur following periods of cool (65-70°F) temperatures, and high soil moisture or relative humidity. With forecasts calling for ‘cooler’ temperatures over the next few days, producers with peanuts planted in fields known to be infested with Sclerotinia blight, should pay close attention. Symptoms associated with the disease include a yellowing and/or wilting of lateral branches. Affected tissues are often covered with a fluffy, white moldy growth ([photo 11](#)); which is most commonly observed

## PHOTO CREDITS

1. Boman, Randy. Texas Cooperative Extension.
2. Sterling, Winfield. TAMU
3. Smith, Ron. Auburn University. UGA 1410025. <http://www.ipmimages.org/>
4. Anonymous
5. Univ. California Management Guidelines. [Cotton Pink Bollworm](#)
6. Smith, Ron. Auburn University. UGA 1858047. <http://www.ipmimages.org/>
7. Smith, Ron. Auburn University. UGA 1858076. <http://www.ipmimages.org/>
8. Clemson University. UGA 1233021. <http://www.ipmimages.org>
9. Wheeler, Terry. Texas Agricultural Experiment Station
10. Kaufman, Harold. Retired from Texas Cooperative Extension.
11. <http://plantpathology.tamu.edu/Textlab/Fiber/Peanuts/atlas-toc.html>
12. <http://plantpathology.tamu.edu/Textlab/Fiber/Peanuts/atlas-toc.html>
13. <http://plantpathology.tamu.edu/Textlab/Fiber/Peanuts/atlas-toc.html>
14. <http://plantpathology.tamu.edu/Textlab/Fiber/Peanuts/atlas-toc.html>
15. <http://plantpathology.tamu.edu/Textlab/Fiber/Peanuts/atlas-toc.html>
16. <http://plantpathology.tamu.edu/Textlab/Fiber/Peanuts/atlas-toc.html>

FOCUS on Entomology newsletter, is published by  
Texas Cooperative Extension  
Route 3, Box 213AA  
Lubbock, TX 79403

Fair Use Policy for FOCUS information:

We do not mind if others use the information in FOCUS for their own purposes, but please give FOCUS the appropriate credit when you do. Images may or may not be copyrighted by the photographer or an institution. They may not be reproduced without permission. Call 806-746-6101 to determine the copyright status of images.

James F. Leser, Editor  
Michelle Coffman, Associate Editor & Graphic Designer

For more information call or e-mail:  
806-746-6101 or [m-coffman@tamu.edu](mailto:m-coffman@tamu.edu)

Educational programs conducted by Texas Cooperative Extension serve people of all ages regardless of socio-economic level, race, color, sex, religion, handicap or national origin. References to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas Cooperative Extension is implied.