

FOCUS on South Plains Agriculture

Texas AgriLife Research and Extension Center at Lubbock
1102 E. FM 1294, Lubbock, Texas 79403

Cotton Insects

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Headworms treatable in some fields

Cotton Insects

Cotton Aphids

Although I thought this week would see an expansion of the aphid outbreak, it seems the lady beetles had other plans in mind. Some fields are still being treated, but the aphids in many more fields have crashed due to predation. We have yet to see aphid outbreaks in the counties north of Lubbock to any great extent, and it looks like most of the cotton in that area has healthy populations of beneficials. However, we are still early in the aphid season and all of our cotton needs to be closely monitored. Please refer to the last two weeks of FOCUS for more details on the aphid outbreak and management. (View the [July 16 edition](#) and the [July 23 edition](#) of FOCUS).

Lygus

Lygus continue to be found throughout much of the High Plains over the past two weeks. Pay particular attention to cotton that has a dense canopy, and even closer attention if this cotton is near recently cut alfalfa or disturbed weedy habitats. I wrote fairly extensively on Lygus in [last week's edition of FOCUS](#).

Also be on the look out for a "new" plant bug. This bug is an *Adelphocoris* sp. (positive identification is pending). It isn't necessarily new, but we have just recently become concerned that it may cause damage similar to Lygus. Where detected last year, we found bolls that appeared to be damaged by Lygus, yet few Lygus were present in the field and these Adelphocorids were plentiful. Additionally, similar species are notable cotton pests in other parts of the world. Hopefully, we can determine exactly what it is doing in cotton this year.

The adult is black with light orange markings and may be confused with a cotton stainer. The nymphs look similar to Lygus nymphs but have a red head, antennae, legs, and abdomen.



Adelphocorid adult



Adelphocorid nymph

I have been picking up this insect in Swisher, Hale and Lubbock counties, but I suspect it is much more widespread. So far they haven't been numerous this year but they are reproducing in the cotton. If you encounter Adelphocorids in your cotton, until we have more information we are recommending that you sample and treat them as you would Lygus. Lastly, if you happen upon a good sized population of this bug, we would like to collect them for our experiments. Please call David Kerns at (806) 746-6101.

Bollworms

Bollworm egg counts appear to have dropped off this week. We are probably in-between moth flight and we will undoubtedly see more bollworm activity in a week or two. ([Click here](#) to see more information regarding bollworms published in last week's edition of FOCUS).

Spider Mites

In one short week we have gone from hearing reports of mites in central Texas and southwestern Oklahoma, to finding fairly good infestations in cotton in Lubbock County. Spider mite infestations usually begin on field edges, often near dusty roads. Usually spider mite outbreaks are associated with dry conditions, but I think this is a misnomer for the Texas High Plains. It seems that in the years we get mites our conditions are fairly wet and they seem to follow aphid infestations. I think the reason we see mites during wet years is because of the abundance of weeds to host the early-season mite populations and to serve as a "green bridge" into cotton.

Spider mites feed by piercing plant cells with their mouthparts and sucking the contents. This damage usually occurs in clusters and damaged clusters appear as white or yellowish specs on the leaf, termed stipules. Specking damage is termed Phase I damage. As feeding increases and the mites persist, the damage spreads and the leaf takes on a reddened appearance (Phase II damage) and eventually necrosis develops. Cotton photosynthesis has been correlated with this damage and

appears to sharply decline when Phase II is reached; about 20 mites per leaf.



Spider mites on cotton

In Texas, one of the key predators of mites in cotton is western flower thrips. Although a pest of early season cotton, western flower thrips can effectively prevent mites from reaching damaging levels. The population of thrips, particularly immature thrips, should be monitored when mites are encountered. Because of the importance of predators in mitigating mite outbreaks, it is important that care be taken to avoid killing them when treating for other pests such as cotton aphids, fleahoppers, bollworms or Lygus.

In cotton, mites should be scouted by sampling 40 to 60 leaves from 4 or more regions of the field. Pull leaves equally from the top, middle and lower portions of the plant canopy. A 10X hand lenses will be necessary to see immature mites and eggs. Additionally, scout for mites by looking for areas with cotton that has speckled or reddened leaves. Mite hot spots can often be easily detected from a distance, and while mites may be numerous in these spots, they may occur in very low numbers in the remainder of the field.



Damage first appears as white to yellow colored specs (Phase I damage), often along the leaf veins (top), but will develop into reddening of the leaf as damage intensifies (Phase II damage) (bottom)

The current action threshold for spider mites has not been fully evaluated, but the recommended spider mite action threshold can be used as a general guide. Prior to bloom, cotton should be protected from spider mite induced defoliation. After bloom, it is essential that the leaves responsible for boll filling be protected from spider mites. Research has demonstrated that cotton should be protected from severe spider mite damage for 650-750 DD60s beyond cutout or NAWF + 5. Since spider mite outbreaks usually occur along field margins or in hot spots, treating only those infested areas may be a means for reducing costs.

Spider Mite Action Threshold

Treat when 50% of the plants show noticeable reddened leaf damage and the mite population is increasing.

Spot treat when infestations are relegated to small areas.

Cease sampling and treating when
NAWF = 5 + 650 - 750 DD60s

Consider alternatives to the pyrethroids for managing pests, such as bollworms and lygus, or neonicotinoids (Intruder, Centric and Trimax Pro) for aphids when mites are present. Maximize insecticide coverage when treating for mites. Drop nozzles and high spray volumes can greatly enhance mite control. Products that have proven effective in controlling mites in cotton in the Texas High Plains include: Oberon at 4 fl-oz/ac, Portal at 16 fl-oz/ac, Comite II at 2.25 pt/ac, and abamectin 0.15 EC (Epi-Mek, Agri-Mek, Zephyr, Abba, Zoro and probably others) at 8 fl-oz/ac. DLK

Cotton and Peanut Diseases

Verticillium and Fusarium

Verticillium wilt is still evident in many area cotton fields. Disease development may subside with the onset of hotter temperatures; however, symptoms are quite apparent throughout the region.



Verticillium wilt in cotton

The pathogen that incites Verticillium wilt can also infect peanut.



Verticillium wilt in peanut

Symptom expression in both plants is a result of the fungus plugging the vascular system of plants. This is characterized by dark, necrotic flecks in the vascular tissue. More pronounced symptoms can be observed during boll or pod fill, as plants will not be able to adequately transport water and nutrients from the roots. Dr. Terry Wheeler has been monitoring Verticillium wilt development, and notes "that disease incidence has increased 3-fold from a few weeks ago; however, levels are similar to what were observed at this time in 2009". I have received numerous calls with people inquiring about in season management options. While changes to cultural practices can be made to minimize losses in cotton ([see publication on verticillium wilt](#)), the application of chemical fungicides and/or foliar fertilizers **will not correct or cure the disease**. If Verticillium wilt is occurring in fields without a prior history of the disease, soil assays may be needed to quantify fungal populations so that future management strategies might be implemented. It is best to collect soil samples during the winter as this is when the current year's inoculum will be detected.

Damage resulting from Fusarium and/or root-knot nematode can still be observed in many areas south and west of Lubbock.



Fusarium wilt on cotton



Southwestern rust on cotton, top of leaf



Root-knot nematode on cotton



Southwestern rust on cotton, bottom of leaf

Other cotton diseases that have been reported within the past week include Bacterial blight and Southwestern rust.



Bacterial blight on cotton

Symptoms of Bacterial blight include small, dark green, water-soaked lesions that are first visible on the underside of leaves. These le

sions, which have an angular appearance, are delimited by the veins within the leaf. As individual lesions coalesce and become necrotic, infected leaves will defoliate prematurely. In addition, lesions may develop on the bolls, resulting in the rotting of lint. There are no chemical management options available for Bacterial blight. The disease is currently managed through the use of resistant or immune varieties. [A list is provided here](#). Southwestern rust is caused by the fungal pathogen *Puccinia cacabata* and is a relatively new disease on the Southern High Plains. The disease routinely occurs in portions of far west Texas (i.e. the Trans Pecos area), and was first reported from fields in Gaines Co. by IPM-EA Manda Cattaneo in July of 2009. Symptoms of Southwestern rust include bright yellow to orange colored delineated with a maroon border on the upper leaf surface. Raised, yellow to orange structures (aecia) containing spores can be found on the

lower leaf surface. While the disease has been observed in portions of Gaines and Terry County this season, disease incidence is rather low and instances of severe defoliation are rare. Unlike other rust diseases, **the spores produced on infected cotton leaves cannot re-infect cotton.** The epidemiology of Southwestern rust is complicated; however, the presence of an alternate host, specifically grama grasses (*Bouteloua* spp.), is required for disease development in cotton. The re-infection of cotton can only occur when rainfall primes the production of spores on the grama grass, which will infect cotton. Severe yield losses associated with this disease has been reported, but are sporadic in nature. The forecasted weather conditions (hot and dry) will help to slow the spread of this disease. While fungicides have been effective at controlling this disease in other cotton production areas, **it is unlikely that fungicide applications will be warranted in this case.** If you have any questions regarding these or any other disease issues, please contact Jason Woodward @ 806-632-0762, or via e-mail jewoodward@ag.tamu.edu. JW

Sorghum Insects

Headworms over threshold in places

I was going to write about how sorghum headworms were easy to find. Just as I was finishing my draft text, Brant Baugh's Lubbock County IPM newsletter arrived in my in-box. I can't do any better than this, so I won't try.

From the Hub of the Plains Pest Management Newsletter, July 30, 2010:

"We are finding economic infestations of head worms in program grain sorghum fields at this time. The economic threshold is ranging from one per three heads to one per head depending on your number of heads per acre. What we are currently finding is one worm per 20 heads or one worm per head. Basically you either have an acute population or none at all. Most of the larvae we are finding are sorghum

head worm (corn earworm, cotton bollworm) with a few fall armyworms mixed in. To scout for this pest, find a good clean one to five gallon bucket and thrash the heads inside the bucket and count the worms. Base your decision to treat on the number of ½ inch size worms or larger. You will see very high mortality on worms less than ½ inch in size so do not base your decision to treat on small worms. Refer to "[Managing Insect and Mite Pests of Texas Sorghum](#)" to find tune your threshold. Labeled products include Baythroid 2E at 1.3 to 2.8 oz./a; Karate 1E or Warrior 1E at 2.56 to 3.84 oz./a; Asana XL at 5.8 to 9.6 oz./a and Mustang Max at 1.75 to 4.0 oz./a and Lorsban 4E at 8 to 32 oz." Brant Baugh



Corn earworm on sorghum yesterday



Fall armyworm medium larva yesterday

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