FOCUS on South Plains Agriculture

Texas A&M University Agricultural Research and Extension Center at Lubbock
1102 E. FM 1294, Lubbock, Texas 79403
(806) 746-6101 http://lubbock.tamu.edu

Cotton Insects

Small Grains Agronomy

Texas Cooperative EXTENSION
The Texas A&M University System

Cotton Insects

Cotton Aphids

Aphid populations are beginning to resurge

Along with some cooler temperatures, we are beginning to see a bit of a resurgence of cotton aphids. The fact that many of these aphids are the darker colored forms is a bit concerning, but I'm not ready to panic by any stretch of the imagination. We still have a lot of lady beetles and other beneficials in most fields and these will hopefully keep the aphids from building up. Right now we need to monitor the aphids closely, especially in fields that still have lush tender

growth and where we have treated bollworms with pyrethroids or other broad-spectrum insecticides. Remember that an insecticide application may be justified once that populations average 50 aphids per leaf; however, once we begin to see cracked bolls you might consider lowering that threshold substantially. When open bolls are present, some states recommend treating aphids when they average as little as 5-10 aphids per 5th main-stem node leaf. I can't emphasize the importance enough for keeping aphids out of cotton with open bolls. We cannot afford to have the High Plains cotton crop stigmatized as "sticky"; so keep an eye on these aphid populations.

Greg Cronhom, IPM Agent for Hale and Swisher counties and I conducted an insecticide efficacy test on aphids in early August near Hale Center (click here to view the data). This test was treated on August 7. The site had a high number of lady beetles, and when we took our 3 DAT (days after treatment) evaluation it was evident that the population was crashing. In the untreated at 0 DAT we were averaging 121 aphids per leaf, and by 3 DAT, we were averaging 32 aphids per leaf. Although the population was crashing we were able to see some statistical differences among the treatments. At 0 DAT (no insecticide sprayed yet), some plots notably had more aphids than most of the others, namely the Bidrin XP plots. Thus, to begin with, this treatment was somewhat at a disadvantage relative to most of the other treatments. After 3 days, all of the treatments had fewer aphids than the untreated. Among the insecticides, Carbine at 1.5 and 2.3 oz/acre, Intruder at 0.75 oz/acre, Bidrin at 8 fl-oz/acre, and Bidrin XP at 6.4 fl-oz/acre [Bidrin XP is a combination of Bidrin and Discipline (bifentrhin), each product was applied at 6.4 fl-oz/acre] all had fewer aphids than Trimax Pro at 1.5 fl-oz/acre. Centric at 1.5 oz/acre fell in the middle and did not differ any of the other insecticides. All treatments included COC at 1 % v/v. As one would expect, the best control was on the upper portion of the plant, especially for Trimax Pro and to a lesser degree Centric. I wouldn't condemn Trimax Pro based on these results. For Trimax Pro, Centric, Intruder, and Carbine I like to give these products at least 3 days before evaluating activity; under certain conditions these product can be a little slow, and perhaps for Trimax Pro in this test, that may have been the situation. It was unfortunate that the population crashed before we could determine if Trimax Pro would have kicked in or not. Regardless, at this point if you are going to use Trimax Pro for aphid control I think you should stick with the 1.8 oz rate until more data are available.

Spider Mites

We have been picking up small patches of spider mites in cotton since early August, but in past few weeks they have really taken off in some fields, particularly around Idalou and up towards Petersburg. We are supposed to have mite problems during hot, dry years, yet this year it's been wet and fairly cool; what's the deal? I'm not sure, but it could be that some of the neonicotinoid insecticides (Centric, Intruder, Trimax Pro) that we used for aphid control in late July and early August may have flared the mites. In a number of horticultural crops, neonicotinoids have been implicated in flaring mites. There is some speculation that the flaring of mites by these types of products is not due to the destruction of natural enemies, but stimulation of mite reproduction, or an increase in host nutritional suitability; but I am not convinced. Regardless, it does happen and I suppose it is possible in cotton as well.

The spider mites we are encountering this year appear to primarily be the carmine spider mite. This spider mite is very similar in appearance and biology to the twospotted spider. Both prefer hot dry conditions, both spin webs, and feed on the underside of leaves. The immatures, eggs and adult male mites for carmine and twospotted spider mites are almost indistinguishable. There are some slight physical differences evident under high magnification, but most separation of these species is done by looking at the adult fe-

males. Adult female carmine spider mites are dark blood red to bright red in color; whereas the two-spotted spider mite adult female is yellowish green in color.

Adult female carmine spider mite

Whether you are dealing with twospotted spider mites or carmine spider mites, damage and management is the same. Spider mites feed on epidermal cells on the underside of cotton leaves. The mites penetrate the cells with their stylets and remove the cell contents. This mechanical injury to the cells results in light colored punctures that, when the feeding is severe, cover large areas of the leaf. Feeding results in water loss and drying of the damaged leaves. Photosynthesis is reduced due to damage to the chloroplasts. The first sign of spider mites damage is a light tan or yellowish russeted or bronzing discoloration of the underside of the leaves, particularly at the junction of the main leaf veins. As damage increases it will be evident as the tops of the leaves become reddened.

The population density of the mites, duration of infestation and environmental factors all affect the potential damage to the crop. When spider mite feeding is severe, defoliation and a total loss of squares and fruit may result.

The underside of a spider mite damaged leaf

Cotton defoliated by spider mites

Yellowed and reddened leaves is evidence of spider mite feeding

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 5th main stem node leaves show the presence of mites. Mite control is generally not required once open bolls are present.

Similar to aphids, spider mite populations will often crash, usually due to predation by other mites, minute pirate bugs, thrips, or infection from mite killing fungi. In the spider mite infestations I have looked at this week I have noticed quite a few thrips feeding on spider mite eggs. Insecticide applications targeting other pests; most likely broad spectrum insecticides such as pyrethroids targeting bollworms, can reduce the beneficial insect population resulting in an "explosion" in the mite populations. If mites are common in your field and you need to treat for bollworms, seriously consider NOT using a pyrethroid, but go with a softer chemistry such as Steward, Tracer or Demin. These should not flare aphids or mites, and Denim may in fact offer some mite suppression.

If you need to treat for mites, much like aphids, good coverage is essential. Apply the miticide by ground if possible and use at least 10 gallons of spray per acre; more if possible. If going out by air, do not use less than 5 gallons of spray per acre. Additionally, the inclusion of COC will enhance control. 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 have not been evaluated for spider mite control in Texas. These include Acaramite, Fujimite, Oberon, and Zeal. I have evaluated these products on twospotted spider mite or similar mite species in other crops in Arizona and found all of these to have good activity. We are working on evaluating a number of new miticides on cotton this year, but as of now we cannot make definitive recommendations.

Lygus

Lygus have been picking up in number is some areas. Clyde Crumley, IPM Agent for Gaines County reported finding a field with 25% of the plants infested with *Lygus* nymphs; Clyde suspects that nearby peanuts may be the source of the *Lygus*. Monti Vandiver, IPM Agent for Parmer and Bailey counties reported a field that was running about 12 *Lygus* per 100 sweeps, and that this population appeared to be about 50% nymphs. At this time we are not concerned with square loss, but we are concerned with damage to the soft bolls.

Black sunken lesions on bolls indicate Lygus feeding

Successful penetration of the carpal wall by Lygus results in stained lint

Deciding when to treat *Lygus* in late cotton is difficult, and currently we do not have much information on which to base a decision. However, try to base your decision on *Lygus* counts along with the appearance of damaged bolls. If you are picking up 15-20 *Lygus* per 100 sweeps (sweep net), or 2-3 *Lygus* per 3 ft-row (drop cloth), or 12-15 *Lygus* per 100 plants (visual inspection), and *Lygus* damaged bolls are common, then you may consider treating. Keep in mind that these thresholds are only educated guesses and that we currently have no data to support them.

Cotton Bollworms, Fall Armyworms and Beet Armyworm

Over the past week, bollworm numbers have declined in most areas, although there have been incidences where fields have required treatment. For the most part they are a chronic problem where we can find 2000 bollworms per acre fairly constantly yet do not exceed the threshold. Bollworms need to be scouted for carefully; inspect the terminals, squares, white and pink bloom, bloom tags, and bolls as well. Essentially, to really find all the worms on a plant, you have to do a whole plant inspection. This is especially important on Bollgard I varieties where the Bt titer tends to be lower in the blooms and worms feeding on these may sneak by. Treatment for may be justified when counts average 10,000 or more small (1/4 inch or less) larvae per acre, or 5,000 larger larvae per acre. However, on cotton that is physiologically behind, you may consider a somewhat lower threshold.

There have been a few fall armyworms and beet armyworms around, but we have not seen high numbers of these yet. DLK

Cotton Pests Around the State

Central Blacklands (reported by Marty Jungman, IPM Agent, Hill and McLennan counties)

The insect of most concern is the brown stink bug with some leaf footed bugs and green stink bugs. Bollworm egg and larvae counts are light. Cotton aphids and spider mites are light. We need to maintain beneficial insects to keep cotton aphids and spider mite levels low. No boll weevil punctures found. No beet armyworms were found.

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

Worm infestations are still a major concern across the area. Bollworm/fall armyworm larval numbers have been up to 7,875 per acre and damage to bolls and squares has been substantial in some non-bt cotton fields. Several fields have been treated and the level of control has been good to marginal. The level of control has been mostly related to the size of the larvae at application and application coverage. Cotton aphids are on the decline.

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

Cotton aphids seem to be declining over the area as a general rule. Heavy rainfall, hotter temperatures and high numbers of natural enemies have all contributed to the decline. The heavy boll load and the fact that much of the cotton is in physiological cut-out may also impact aphid populations since nitrogen has shifted from vegetative growth toward filling the bolls. Bollworm larval counts ranged from 0-24 treatable worms per 100 plants and egg counts ranged from 0-5 eggs per 100 plants. Egg counts are way down this week. We have been monitoring larval infestations for the past two weeks in Bollgard, Widestrike and Bollgard II cotton varieties and have yet to find any significant damage. Stinkbug egg masses and stinkbug nymphs were found in several cotton fields this week.

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

Rainfall last Friday ranged from 0.3-3 inches with the western side receiving the least. Insect activity remains fairly light. We are seeing some medium to large worms from previous egg-lay, but egg-lay is low at this time. Bollworms eggs are ranging from 0-2,000 per acre, small worms 0-3,000 per acre and medium worms 0-3,000 per acre. Cotton aphids are variable among fields, but below threshold.

Small Grains Agronomy

Fall Small Grains for Forage

Seed Quality

Extension suggests that, particularly for fall forage production, producers choose wheat seed with a minimum germination of 85% and a minimum test weight of 58 lbs. per bushel. Oklahoma research suggests that these two factors are correlated with fall forage production. Wheat seed supplies may again be short this year so it is wise to determine as soon as possible where you can get your seed. If you have questions, have your seed tested. You as a producer deserve to know the quality of your seed.

Beardless Wheat, Grazing, and Grain Yield

Beardless wheat is popular for grazing and baling due to the lack of awns on the grain. Varieties include Longhorn, Lockett, TAM 109, Deliver (2004 release from Oklahoma State) and numerous traditional Russian beardless selections such as Weathermaster 135, Winmaster, Eldorado, HG-9, Abilene Ag, etc. Texas A&M research in 2000-2003 showed that these wheats do not yield more forage than traditional grain wheats. Fur-

thermore, there were no consistent differences among beardless wheat varieties for forage yield. Having beardless wheat gives you the option, however, of grazing out or if necessary, baling after heading.

With Fall 2007 prospects for high wheat prices, if you anticipate going to grain then Extension recommends you choose a grain type bearded wheat. Results from Texas A&M in the High Plains suggest on average a 10-15% yield reduction for beardless wheat as a class vs. a basket of popular wheat grain varieties.

Optimum Seeding Dates for Wheat Forage Production

Where producers are in need of small grains forage for early fall grazing in October, a few wheat fields have already been seeded. In many years when producers know they will need early fall grazing for stockers, they might be better suited to plant sorghum/sudan, which is heat tolerant and water use efficient, in the summer for fall grazing. The downside of early planting of small grains is two-fold: 1) wheat and other small grains are cool-season grasses, and they don't establish as well or perform as well in the heat; 2) excess moisture use is required the earlier the wheat is established. Early moisture use on dryland wheat in particular can curtail forage yields later in the fall. I estimate that wheat drilled on August 24 vs. September 7th could use at least 1" and perhaps up to 2" more moisture through the fall without necessarily the associated increase in yield you might expect.

Target seeding dates for optimum small grains forage production in the South Plains roughly follows these dates:

Sept. 1 for northwest counties
~Sept. 7 for the Lubbock area
~Sept. 14 for the Lamesa area.

An additional reason to not rush wheat planting is that some wheat varieties (beardless Longhorn is one) have some dormancy for germination in warm soils, and they may not grow well at this point.

Seeding Rates for Wheat Forage Production

Higher seeding rates are particularly important for fall forage production. Extension recommends at least 100 lbs./A and up to 120 lbs./A of seed for full irrigation wheat forage production. For dryland—though satisfactory results can be achieved even below 50 lbs./A—we recommend a minimum of 60 lbs./A and we believe 75 lbs./A may be a good choice. These seeding rates may not affect spring grazing as much. Regional research has suggested that it is difficult to plant too much seed especially where significant fall forage production is a major goal.

Texas A&M 'Top Pick' Varieties for Wheat Grain Production

Next week I will discuss the results of 2007 High Plains wheat grain yield trials as well as Extension's current suggestions on wheat grain varieties that have proven performance in our trials. Optimum planting dates follow the above dates for wheat forage by 4-6 weeks. If you are already making decisions on grain varieties for Fall 2007 planting contact Calvin Trostle. CT

FOCUS on South Plains Agriculture

Fair use policy

Editors

Michelle Coffman, Associate Editor
David Kerns and Patrick Porter, Co-editors

SEND US A COMMENT BY E-MAIL

Contributing Authors

David Kerns, Extension Cotton Entologist
Calvin Trostle, Extension Agronomist

Photo Credits

Lygus boll lesions: University of Georgia

Useful Web Links

Applied Research Reports (Goldmine)

Texas High Plains ET Network

Irrigation at Lubbock

IPM How-To Videos

Lubbock Center Homepage

Texas Agricultural Experiment Station Home

Texas Cooperative Extension Home

Plains Cotton Growers

County IPM Newsletters

Castro/Lamb

Dawson/Lynn

Crosby/Floyd

Gaines

Hale/Swisher

Hockley/Cochran

Lubbock

Moore

Nolan/Scurry/Mitchell/Jones

Parmer/Bailey

Terry/Yoakum

Texas Agricultural Experiment Station
THE TEXAS A&M UNIVERSITY SYSTEM

Texas Cooperative EXTENSION
The Texas A&M University System