



Cotton Newsletter, August 2011, Volume 2 Number 2

The cotton newsletter serves to present relevant information and news items for the benefit of growers and stakeholders in the cotton industry within New Mexico. Contributions, comments, and any other information are welcomed from growers and others interested in cotton production in NM. In case you want to share any information, please get in touch with John Idowu (email: jidowu@nmsu.edu; phone: 575-646-2571). If you are interested in previous editions of the Cotton Newsletter, please feel free to download at <http://aces.nmsu.edu/ces/ifcpm/cotton-production.html>

Cotton Management – Spider Mites in Cotton

At least two different species of spider mites have shown up this summer in cotton planted in south-central New Mexico—two-spotted (*Tetranychus urticae*) and carmine mites (*Tetranychus cinnabarinus* or *T. telarius*). You may need to scout for these insects and control them if necessary.

Damage symptoms

Foliage of infested cotton plants may appear dry or with dull olive green color; some damaged leaves may look yellowish or even reddish. Closer examination may reveal very tiny white dots or ‘stipples’ on the upper side of the leaf. Damage is subtle initially but becomes very eye-catching when infested leaves curl, wither and drop. Early infestations of spider mites are often spotty, both within a field and around the edges of fields; they may develop first near weedy field margins, along the edges of dusty roads or in cotton rows next to other potential host crops. Leaf damage and loss not only slows plant growth, but also reduces the amount of carbohydrates available to developing squares and bolls. Without these essential nutrients, the struggling plant will lose part or all of its crop and you’ll see fallen squares and bolls between the rows. Unchecked, spider mites can totally defoliate and kill plants in heavily infested areas of a cotton field. Pima cotton is supposed to be less susceptible to spider mites than upland varieties, but don’t count on it, keep an open mind and scout.

Newsletter Highlights

**Cotton Management
(Spider Mites in Cotton)**

**Update on the
Glandless Cotton Trial
(Pest Monitoring)**

Description

Spider mites bodies are oval, off-white with a dark gray blotch on either side for two-spots and dark reddish purple for carmine mites. They crawl slowly on 4 pairs of short legs—one feature that probably earns them the ‘spider’ part of their common name. Spider mites can penetrate individual cells in the leaf, sucking up the contents. This damage is permanent and cumulative, producing noticeable symptoms. Spider mites usually colonize the protected underside of cotton leaves, with the largest spider mites measuring about 0.3 mm long.

The head is not well defined but it includes another shorter pair of leg-like palps immediately adjacent to the minute mouthparts. If the mites have been on the leaf for a while, you may expect to see not only the shiny, nearly transparent spherical eggs (almost as large as the mites) but also the delicate, whitish transparent cast skins, left behind by the younger mites after they molt. Both species will produce strands of very thin silk throughout and over their colonies, another feature associated with ‘spiders.’ When spider mite numbers are high on a severely damaged or dying plant, the pests often surge to the top of the canopy which they cover with silk webbing.

During the growing season spider mites are almost always present in weeds and crops, gardens and landscapes, but not necessarily in damaging numbers. However, persistent hot, dry summer weather not only favors spider mite survival and reproduction over that of their natural enemies, but also stresses host plants, reducing their resistance to infestation. In the heat of summer, spider mites can complete a generation in less than a week, hatching from those pearl-like eggs to 6-legged ‘larvae.’ Larvae soon molt through two ‘nymph’ stages, to finally become 8-legged, reproductively active adults and this corresponds to 5 life stages in less than 7 days.

Control

Early identification of problem is critical to controlling spider mites in cotton. Scouting to discover which part of the field is most affected can help in planning effective control strategies. In some cases, a heavy rainfall can solve the problem, in which case, the mites are physically washed off the plants. However, the rainfall pattern in our region is unpredictable and chemical control with miticide is often necessary. It is important to read the label of any miticide chosen to control spider mites. Most labels will advise thorough coverage of foliage, due to the small sizes of the pests, silk production and their habits of colonizing the undersides of leaves, plus cracks and crevices in buds and around bolls. Generally, the use of pyrethrins, pyrethroids or organophosphates is not recommended for spider mites. While short-term mite control may occur with these products, there can be a rapid resurgence of the pests that can quickly exceed pre-treatment levels of spider mites.

Strongly consider rotation of miticides as part of a resistance management program for these pests. Spider mites in your area may be resistant to some products, and continued or frequent use of these active ingredients or others with the same mode of action will make the problems worse. In California, cotton growers are urged to use a particular miticide (i.e. active ingredient) only once per season, and, if a second application is needed, switch to a different miticide (i.e. active ingredient). The following year, switch again to still another miticide with different mode of action if mite control is necessary to prevent resistance of pest population to active ingredients. Currently, almost 200 insecticide/miticide products are labeled for ‘mites’ on ‘cotton’ in New Mexico. Read product labels carefully to know the mode of action, application rates, when to apply and how to apply, in order to achieve effective pest control.

For a more detail information about the spider mites, please check the website below:

<http://aces.nmsu.edu/ces/ifcpm/documents/spider-mites-in-cotton.pdf>



Spider mites eggs skins



Spider mites on webbing



Carmine mite

- Dr. Carol Sutherland, Extension Entomologist, NMSU & State Entomologist, NM Dept. Agriculture.

Update on the Glandless Cotton Trial

The glandless cotton evaluation project in New Mexico funded by the Cotton Incorporated has continued for the second year. Two research sites (Las Cruces & Artesia, NM) and three growers' sites (La Union, Anthony & Hagerman, NM) were chosen for 2011 trials. Trials at the research stations and farmers' sites were planted in April/May of 2011. The season started with a prolonged period of low soil temperatures in April, forcing planting at some locations to be delayed till early to middle May. Establishment stands at all sites have been satisfactory and there has been no major problems affecting the growth of the glandless cotton, except for a hail storm damage at the Hagerman site earlier in the season. In addition to variety evaluation trials, another trial, to monitor insect pressure in the glandless cotton was set up in Las Cruces and Artesia, NM. Field pest is being scouted every week to compare pest pressure between the conventional and the glandless cultivars.

Pest Monitoring Results

Las Cruces

Sampling started shortly after emergence. Thrips injury (predominantly western flower thrips) was present early at very low levels in both the convention and the glandless varieties, but this does not appear to be of any economic concern. Cotton bollworm and beet armyworm injury is currently being assessed. Both are sporadic but could cause economic damage. General trends are that there is greater damage to squares in the glandless than the conventional cotton, and beet army worm damage is slightly higher than that of bollworm. Square damage for the glandless cotton was ~10% for beet armyworm and ~7% for bollworm. Square damage for the normal variety was ~3% for beet armyworm and 4% for bollworm.

Artesia

Insects being evaluated in Artesia include beet armyworm, cotton bollworm, thrips and lygus bugs. Surprisingly thrip counts in an Artesia field trial were significantly higher in the conventional rather than the glandless cotton plots, with more than three times as many thrips on glanded plants.

Beet armyworm, on the other hand, does produce more damage in glandless cotton as was evident in 2010 field trials. Field to laboratory trials being conducted this year, indicate beet armyworm larvae grow larger when they feed on glandless compared to conventional glanded cotton. Fourth instar larvae were 2.2 times larger feeding on glandless compared to glanded cotton. Bollworm larvae also grew more when fed with glandless cotton. Fourth instar larvae were 50% larger when fed glandless cotton squares.

Higher beet armyworm damage in glandless cotton which is very apparent in the field may be due to a preference of this pest for the glandless cotton leaves. Greater damage in glandless cotton may also be due to the female moths laying more eggs in glandless cotton plants. Trials to identify specific mechanisms controlling the beet armyworm damages on glandless cotton are in progress.



Glandless cotton in Anthony (11 weeks after planting)

Cotton Prices

Cotton Monthly Prices A Index*

Month	Price (cents/pound of lint)
September 2010	104.73
October 2010	126.55
November 2010	155.4
December 2010	168.2
January 2011	178.9
February 2011	213.1
March 2011	229.6
April 2011	216.6
May 2011	165.5
June 2011	167.1

*Source: National Cotton Council of America

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