FOCUS on South Plains Agriculture

Texas AgriLife Research and Extension Center at Lubbock
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Cotton Insects

Cotton Aphids

Aphids have declined considerably but are still flaring up here and there, especially following pyrethroid applications targeting worms. If you are making a second application for aphids on any particular field, avoid using the same type of insecticide as used in the first application. Aphids are notorious for developing resistance to insecticides, and we do not want to promote selection of resistant aphids by making repeated applications of the same class of insecticide. Most fields previously treated for aphids were treated with Intruder or Centric, and some with Trimax Pro. All of these insecticides are neonicotinoids. Alternatives to these insecticides that I would recommend for aphid control include Bidrin at 8 fl-oz and Carbine at 1.5 oz.

Lygus

Lygus continue to be found and don't think you are out of the woods just because your cotton is cutout and has no squares to protect. Lygus can be just as nasty to bolls up to about 1 inch in diameter. In 2008, we measured a 238 lb-lint reduction due to Lygus feeding on small bolls. Here is a slide of the results.

Bollworms

Bollworms are continuing to hit non-Bt fields. Most of what we are seeing are light to moderate populations, but be careful; these are the ones that will get you in trouble. It is not uncommon to get several egg lays over a week's time that results in a treatable bollworm population. Problem is, by the time you reach your treatment point; you may have difficulty con-

trolling the older/larger worms. Remember the treatment threshold for <1/4 inch long worms is 10,000 worms per acre and 5,000 large worms per acre. In my opinion, pyrethroids are still the best option to deal with the larger worms, but use higher rates, and maximize coverage the best you can by using a ground rig and /or increased spray volume. If you are dealing with larger bollworms you may also consider using one of the "refined" pyrethroids. These are pyrethoids where they have removed the less active chemical isomers and "heated" the chemical up. For instance, Ammo or cypermethrin has been refined to Mustang Max or zeta-cypermethrin. Others include Baythroid, or cyfluthrin to Baythroid XL or beta-cyfluthrin, cyhalothrin to lambda-cyhalothrin or Karate and Proaxis or gamma-cyhalothrin.

August is usually the month when we see our greatest bollworm activity, particularly in our corn growing areas. As the corn matures it is going to be less and less attractive to earworms (bollworms), and any lush cotton in the area will be a candidate as an alternative host. We expect large numbers of bollworm moths to be emerging from non-Bt corn fields anytime now.

If treating a field for bollworms with a pyrethroid that also contains some aphids, be prepared to make a follow-up application of an aphicide in 7-12 days. Alternatively, include an aphicide with your pyrethroid. If your aphid population is 20 per leaf or less, you can use reduced rates of Intruder or Centric. You may also consider using one of the premixes such as Endigo (Pyrehtoid + Centric), Leverage (Pyrethroid + Trimax Pro) or Bidrin XP (Pyrethroid + Bidrin).

Bollgard II and Widestrike. I have heard reports and observed some large bollworms infesting Bt cotton containing the BG2 and WS technologies. I have even seen a few damaged squares and bolls in these fields. If you come across this do not panic. I have yet to see a situation that justified an insecticide application. From what I can tell, these worms are developing on the blooms and getting some size to them (the blooms do not express the Bt toxin effectively). Once they are large they may very well be able to take out a square or small boll before succumbing to the toxin. In Bt cotton, unless you are running > 5,000 large worms per acre and picking up 5-10% damaged fruit, an insecticide application may do more harm (aphid flare) than good.

Large bollworms can develop in the blooms of Bt-cotton

Mites

Moderate to high populations of spider mites are continuing to increase in some fields, particularly in Lubbock Co, but light populations are beginning to pop up in other counties as well. We have several tests out regarding mite control in cotton, but will not have results available until later this week. . (Click here to see more information regarding spider mites published in last week's edition of FOCUS). DLK

Cotton Agronomy

Crop Update

The High Plains crop continues to progress. August has finally produced hot, dry weather. At Lubbock, July was about 13% below normal for cotton heat unit accumulation (click here to view July heat units). The last few days of June and the first 10 days of July did not provide

many days with heat units above 15 per day. For the first half of the growing season, the total heat unit accumulation at Lubbock was about 4% above normal (click here to view May-July heat units).

Additional recent rainfall in some areas such as Hale County has provided some relief; however, much of the dryland crop is going to need some rainfall soon. Some of the early July water-logged cotton still appears somewhat "yellow" in appearance. This is probably due to perhaps a compromised root system and could be nitrogen and/or zinc related (see below). Many of these "yellow" fields in spite of the good soil moisture situation are somewhat stunted and will have lower yield potential than expected. I believe this is generally a result of whether or not nitrogen fertilizer was applied before the rainfall, and the later planted fields seem to me to be more affected.

Overall, in many areas the region entered bloom in good to excellent shape. Irrigated variety trials scattered across the High Plains went into bloom in mid-July averaging 7.8 nodes above white flower (NAWF). This level of NAWF indicates high yield potential in these trials. The somewhat later planted dryland trials began blooming a bit later and were about 7.4 NAWF. These dryland fields will need some help to retain this yield potential, but the overall outlook is good.

Lynn County Zinc Issue

After a mid-season producer meeting in Lynn County on July 16, I traveled west of Tahoka and looked at some "yellow" dryland cotton with some producers and CEA-ANR Bryan Reynolds. This cotton was prebloom (about a week or so away) on that date. After observing the field closely, and determining that nitrogen fertilizer had been applied prior to the early July deluge, it appeared to me that this could be zinc (Zn) related. The plants were fairly "yellow" but didn't exhibit the classic striking interveinal chlorosis (click here to view typical symptoms, and here to view a list of typical Zn deficiency symptoms) that is typical. Unfortunately, I did not have my camera with me that day to capture how this cotton appeared. We have seen Zn deficiencies in Lynn County before (click here ink to view an overview of a 2009 New Home field overview, and here for a close up). Based on Tommy Doederlein's (Dawson/Lynn EA-IPM) soil sampling survey from 2009 in Dawson/Lynn/Eastern Gaines counties, zinc soil test levels were marginal or deficient in many of the 16,500 acres he sampled (averaged 0.15 ppm Zn) (click here to view Doederlein's soil sampling results). The producer had indicated that he had previously not encountered this type of chlorosis in this field. This field had experienced very wet soil conditions for a couple of weeks. Due to lack of adequate rooting in some of these wet dryland fields, zinc uptake or availability problems although perhaps transient, were likely the reason for the "yellowness."

The producer mixed some dry formulated 15% Zn (0.5 lb product/acre) with glyphosate and surfactant and applied about 0.075 lb Zn/acre in the 10 GPA spray volume. This Zn formulation and treatment cost about $4/acre. This Zn application resulted in some spectacular results in terms of response. I'm certainly not going to blame Zn issues for all of the yellow cotton, as nitrogen may also be a problem. On August 4, I took some photographs of the response to the Zn application. Several photographs can be found here. It is interesting that the untreated area had begun to "green up" somewhat by August 4, but unfortunately, the earlier negative effect on yield will likely be substantial. It is likely the Zn uptake or availability problem was reduced by drier soil conditions or perhaps the roots grew into a higher Zn concentrated zone deeper in the soil.

We have taken some plant tissue samples and sent those off for analysis. Ten plants per untreated and treated areas were pulled up and plant mapped. The results of 10-plant averages can be seen here (click here to view plant mapping results). Plant height was nearly 5 inches larger in the Zn treated when compared to the untreated. Nodes above white flower (NAWF) were only 4.4 for the untreated (technically already at "cutout") and were 6.5 for the Zn treated. Total mainstem nodes were also greater for the Zn treated (16.0) vs. only 13.8 for the untreated. The big issue is found in

total fruit. The Zn treated had 13.6 squares, whereas the untreated retained only 3.5. Square retention on 1st position was nearly twice as much (5.9) for the Zn treated when compared to the untreated (3.0). Second position squares were almost all missing on the untreated, whereas there were 5 on the Zn treated. Since this is a dryland field it is difficult to say how much yield increase if any might be obtained, but there is considerable difference at this time in terms of yield potential.

The producer had insufficient dry formulated Zn product to finish the other "yellow" fields and began applying a liquid 10% Zn formulation. This formulation was also applied with glyphosate and surfactant at a 1.5 pt/acre rate. This delivered about 0.2 lb Zn/acre for about $2/acre. We will be watching these fields and plan to do some harvesting to determine ultimate yield differences. With the number of fields in this region with probable Zn issues, it is going to be very important for producers to effectively soil sample the fields in the winter/spring of 2011. The best way to correct these problems is to add a Zn fertilizer source when applying nitrogen or phosphate preplant. **It appears to me that it is unlikely that foliar Zn applications made to cotton currently exhibiting these symptoms at this time will provide much yield improvement, as most are likely at "cutout" now.** RKB

Sorghum Insects

Midge numbers very high on the Experiment Station

I was looking at blooming sorghum on the Experiment Station today and saw very high numbers of sorghum midge adults, in the range of five to eight per plant. Any sorghum that is blooming or approaching bloom should be scouted for sorghum midge.

Midge is only a threat while sorghum is flowering, and the period of vulnerability is 7-9 days for an individual plant, or 2-3 weeks for an unevenly flowering field. Scouting for the tiny, orange-bodied adults should be done in the middle part of the day when temperatures exceed 85 degrees. Midge adults live only one day, but each day brings a new crop of them, so fields should be scouted frequently.

Sorghum midge adult

The economic threshold varies depending on crop price and control cost, but 0.3 to 2.2 adults per head is basically the range. Females lay eggs in flowering spikelets, and the resulting larvae feed on newly fertilized ovaries. No grain develops. Each female results in the loss of approximately 45 kernels. Complete information can be found in Managing Insect and Mite Pests of Texas Sorghum. RPP

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