

TEXAS COOPERATIVE EXTENSION
SOUTHERN BLACKLANDS
PEST MANAGEMENT NEWS
WILLIAMSON AND MILAM COUNTIES

VOL XXIV NO. 11

July 8, 2004



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GENERAL SITUATION

The weather has finally changed to a more seasonal weather pattern with some isolated afternoon thunderstorms. Although day time high temperatures are still a little milder than normal. Soil moisture is still good, but it does not take long this time of year to go from being saturated to dry, which usually takes place in less than 2 weeks time if no additional rain falls.

The grain crop continues to make good progress. Much of the grain sorghum is at medium to hard dough stage and the corn is drying down rapidly.

GRAIN SORGHUM

Most grain sorghum is past being susceptible to insects. However, there is some grain sorghum that has not reached this point. Growers with this less mature sorghum should continue to monitor it through at least the medium dough stage for insect pressure.

COTTON

Cotton ranged from first bloom to full grown bolls. Additional small boll shed has occurred to some degree in all fields of cotton over the past 7-10 days. It is unfortunate that so much fruit loss has to occur, but I believe it is better to get the moisture this time of the year than to not get it at all. Since it is timely, I have included an article from Dr. Robert Lemon addressing this fruit shed issue which is placed at the end of this section.

Cotton fleahoppers range from 0-21 per 100 plants checked.

Cotton aphids remain very light in all but a small number of fields. Aphid levels in those fields are light to moderate. The parasitic fungus, neozygites fresenii, that attacks aphids has been found in some areas where aphids are being found. This fungus, which spreads by airborne spores, kills cotton aphids within three days after infection. Entire field populations are reduced from peak levels to nearly complete elimination normally within 5 days. These fungus outbreaks usually occur between late-June and early - July. Usually cotton aphid levels will not resurge during the remainder of the season that an outbreak occurs.

Boll weevil punctured squares have only been found in one field this week. This is a field on the edge of town in Taylor that has always been a weevil “hot spot”. All other fields have been clean of punctured squares.

Cotton bollworm/tobacco budworm egg counts range from 2-60 per 100 plants checked with most fields averaging 6-14 eggs per 100 plants. The main concern this week has been with the worms themselves. Worm counts range from 0-34 per 100 plants checked. Fortunately, the majority of the worms were small at the time of inspection.

Counts of over 20 small worms per 100 plants were found in a couple of transgenic B.t. cotton fields. Many, if not most of the worms being found in the B.t. cotton are being found lower in the plant canopy, generally around blooms, bloom tags, and/or small bolls. The worms in this part of the plant will have a better chance to survive than those being found in squares in the upper portion of the plant. It is worth noting that there is a trend of finding less worms in the Bollgard II cotton than in the Bollgard cotton, which is to be expected.

Followup monitoring of fields sprayed with full-label rates of pyrethroids late last week showed up to 60% reduction in worms in those fields. In some cases, this was enough to lower the population below thresholds, but in other fields additional worm applications were required. Budworm moth trap catches have been fairly low compared to bollworms numbers, but it is suspected that there is a mixed population of worms in these fields.

As soon as the results of some of the bollworm pyrethroid resistance monitoring that was conducted late last week are analyzed and made available to me, I will disseminate through the Pest Management Program Participants and through the local ag distributors.

The bottom line is, the pyrethroids by themselves are not the best choices for worm control at this point. A pyrethroid tank mixed with product such as Curacron 8E, Lannate 2.4 LV or Larvin

3.2 F should provide better control than using pyrethroids alone. In addition, some of the other newer products that can be used stand-alone or tank-mixed with other labeled products for resistant bollworm/budworms include Intrepid 2F, Tracer 4SC and Steward 1.25 SC and Denim.

There have been a number of beet armyworm (BAW) egg masses and recent hatch outs found this week. However, only a very few of the worms have been found. This is probably mostly due to the control that the Bt cotton is providing.

Beneficial insect levels are somewhat increasing, at least in many fields. We are seeing more minute pirate bugs in many fields. Also, aphid parasites have been found at moderate levels where higher levels of aphids are found.

June 29, 2004

Fruit Shed in Cotton
Dr. Robert Lemon
Professor and Extension Cotton Agronomist

Much of the crop in the Southern Blacklands is approaching cutout and most folks are seeing lots of small boll shed. This is a perfectly normal occurrence, especially when the plant has a fairly good fruit load. Couple fruit load with cloudy weather conditions (and heavy rainfall), and it creates even more stress on the crop.

Boll shedding is a natural process that the plant uses to adjust its fruit load to match the supply of available nutrients and carbohydrate supply. Cotton fruits shed because an abscission zone forms between the fruiting branch and the boll stem. In the abscission zone, enzymes loosen the connection between cells allowing the weight of the small boll to break the connection, and the boll sheds. The weakening of the abscission zone is controlled by the balance of plant hormones -- ethylene (the active compound in Prep, Finish, CottonQuik, etc.) abscissic acid (which promotes abscission) and indole acetic acid (which inhibits abscission). Under environmental stress, or good fruit loads, the balance of these hormones swings toward ethylene and abscissic acid and the boll (or square) will shed, undergoing the same process that we see from the application of a defoliant.

The susceptibility of fruit shed is dependent upon age. Large squares, blooms and medium sized bolls are fairly resistant to environmental shed. Therefore, under environmental stress and good fruit loads the plant will shed small bolls and small to medium sized squares. Cotton plants produce sugars (carbohydrates) in the leaves that feed the developing fruit. If the plant can not supply enough carbohydrates to meet fruit demand, then the plant sheds fruit. The supply of sugars is reduced under low light conditions, water stress (too dry or too wet), extreme temperatures and nutrient deficiencies. Even moderately cloudy days are detrimental because cotton needs full sunlight to maximize photosynthesis. In addition, cloudy conditions with warm temperatures cause the plant to consume even more stored reserves which are not available for boll fill. Generally, the majority of fruit that is shed arises from the upper nodes and from the second and third positions on the fruiting branch. This occurs because these are the youngest

