

# BLACKLANDS IPM UPDATE

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## GENERAL:

Our first round of triple digit temperatures came this past week, and you can tell that is taking a toll on the crops throughout the area. Corn leaves are starting to curl in the afternoon and cotton leaves are starting to droop during the heat of the day. This is a response of these plants to reduce moisture loss, and thankfully most fields I have seen have their leaves back to “normal” first thing in the morning. If leaves do not return to “normal” overnight it is a sign of drought stress, but if they just temporarily curl or droop it is just the plant trying to conserve the moisture it has. Corn silage harvest is in full swing, and some yield reports have been very good for our area. Fleahoppers are finally down, and cotton is finally starting to bloom indicating that we will soon be out of the window for fleahopper damage in the area. However, in cotton other insects are starting to pick up including aphids, stink bugs, spider mites, and bollworms. With the depleting soil moisture profile and fruit load, cotton fields are starting to express symptoms of Potassium deficiency. Sorghum looks good across the area, but insects remain active. Stink bugs and head worms remain an issue in our later planted or later maturing sorghum hybrids, and the sorghum aphid is finally starting to infest area fields.

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## SORGHUM:

Sorghum throughout the area is variable in growth stage, with some fields starting to reach the hard dough stage, and other fields or portions of fields just now starting to head out. Fields that are just now starting to head out, or areas of fields that are just now coming into pollination are at great risk for heavy sorghum midge infestations. Looking at some late emerging heads this week I was finding some midge and was average about 0.25 midge per head, which is close to the economic threshold for 4,000 lbs/acre milo. Insecticide including pyrethroids, Spinosad, and methomyl can be used to control sorghum midge, and if a pyrethroid or methomyl is used other pest like sorghum aphid and spider mites should be watched closely after application as these products will kill the beneficial insects in the field.

Stink bugs have reached the economic threshold in multiple fields across the area, with a mixed species of mostly greens, conchuela, and rice stink bug, with a few brown stink bugs (**Figure 1**). I am finding fields that are ranging from 0.5 to 1.5 stink bugs per head, which is just below to just above the economic threshold for stink bugs in milo with a 4,000-pound yield potential. Pyrethroids can provide great control of stink bugs in sorghum, but there is known resistance to pyrethroids in rice stink bug populations along the Texas Gulf Coast, so if your field is primarily infested with rice stink bug another insecticide options is dimethoate. Dimethoate may be a more viable option for stink bug management this year as there are spider mites present in some area fields lower in the canopy, and dimethoate can provide suppression of spider mites, where a pyrethroid would cause their populations to blow up following application. If your field is at threshold for stink bugs, and headworks are near the threshold however, an application of Besiege would be the better option as the chlorantraniliprole plus lambda-cyhalothrin in Besiege would provide good control of both pests.



**Figure 1.** Rice stink bug (left) and Conchuela stink bug (right) are two common stink bug pest of sorghum. Rice stink bug picture provided by Pat Porter, Texas A&M AgriLife Extension Service

Head worms are present in area fields and should be monitored closely. Their populations this year are variable across the area and within fields. The economic threshold for head worms in sorghum with a 4,000-pound yield potential ranges from 0.3-1.5 large ( $>1/2''$ ) worms per head. Pyrethroids can be effective for heartworm control when populations are predominantly sorghum webworm, but if your head worms are mostly corn earworm, it is not recommended to use a pyrethroid based insecticide for their control as we have documented pyrethroid resistance in corn earworm populations in Texas. For head worm populations that are mostly corn earworm or fall armyworm, the best product to use would be something with the chlorantraniliprole active ingredient like Vantacor, Shenzi, or Besiege.

Sorghum aphid is starting to be found in area sorghum fields (**Figure 2**), and thankfully their populations are currently below the economic threshold. This pest could soon reach the economic threshold, with our hot and dry weather pattern, and field should be monitored closely. If your field is infested with sorghum aphids it is highly recommended to check the field at least every three days so you can get an insecticide application on the field in a timely manner once their population reaches the economic threshold. Fields that are in the latter stages of grain maturation are less susceptible to economic loss than those fields that are currently heading out or flowering. Fields should continue to be monitored for sorghum aphid up until harvest, to avoid excess honeydew creating harvest issues. The economic threshold for sorghum during the flowering and grain maturation process is 30% of plants infested with 50 or more aphids, and once the crop is approaching black layer an application is warranted with there is excess honeydew with active colonies. Sivanto applied at 4 oz remains the best insecticide option for sorghum aphid, but transform could be used as well but it does not provide the length of residual as Sivanto. If you are making an application at or near harvest to avoid sticky sorghum malathion could be a cheaper option to provide a quick knockdown with a short preharvest interval.



**Figure 2.** Sorghum aphids found in a Hill County sorghum field.



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## COTTON:

Cotton across the area is progressing nicely given the current weather pattern, and fields are finally starting to bloom across the area. Fleahopper populations have subsided, and most of the acres in the area are no longer at risk of economic fleahopper damage. Insect pests remain active in area cotton including aphids, spider mites, and bollworms. Another issue starting to show up in some area fields is Potassium deficiency (**Figure 3**), and the only way to really manage this problem in crops is to alleviate moisture stress through rainfall or irrigation if available. The overnight temperatures staying mostly in the mid 70S could lead to some pollination issues, as high nighttime temperatures can lead to pollen sterility.



**Figure 3.** Potassium deficiency symptoms in cotton.

Aphids are present in some area cotton fields (**Figure 4**), and currently are not widespread across the area or within fields. The current aphid populations I am seeing are well below the economic threshold of 40-70 aphids per leaf. They can be found feeding on various parts of the plant including underside of leaves, stem, bract or square, on the actual square, and even in the terminal of the plant. Their feeding can cause leaves to cup downward and/or droop, and square and small bolls to be shed from the plant. Chemical options for aphids in cotton include Sivanto, acetamiprid (Intruder Maxx), Bidrin 8EC, and Carbine 50WG. Centric and imidacloprid are two neonicotinoid products like Sivanto and Intruder, but at best will only provide some suppression of the aphid populations. When spraying for cotton aphid application volume can significantly impact the performance of the insecticide, as aphids can at time be in the mid to lower canopies, when cotton get a dense canopy, it is hard to get good coverage of the middle and lower canopy with less than 10 Gallons per acre.



**Figure 4.** Aphids feeding on the underside of a leaf and the terminal of a cotton plant.

Spider mites are present in field margins in some area fields, and with the hot and dry weather could soon blow up and start moving deeper into fields. Signs of spider mite infestations include reddening of the upper leaf surface (**Figure 5**), and discoloration and webbing on the lower leaf surface (**Figure 6**). Fields should be treated when roughly 40% of the plants are infested with active spider mite colonies. Field margin treatment could potentially be used to reduce the amount of product needed, and to keep the spider mites from moving deeper into the field. Thankfully, in cotton we can use abamectin based products which can provide great control.



**Figure 5.** Redding of the upper surface of a cotton leaf caused by spider mite colony.



**Figure 6.** Discoloration of the lower leaf surface and webbing caused by spider mite infestation.

Bollworms could soon become a major issue in our area, if what is happening in Brazos Bottoms is an indication of what is going to happen here. If you have listened to our IPM Audio Update, you know that David Kerns, Extension Entomologist, and others are finding worm damage in not only non-Bt cotton, but also in 2-gene cotton such as the Bollgard II and TwinLink trait packages. I have a trial where I am monitoring the efficacy of Cotton Bt trait packages and checking the test on Friday (30 June) I was finding live worms up to 3-days old and damage in only the non-Bt plot. Eggs were abundant in all trait packages and moths were still active in the field. Our next full moon is this coming Monday July 3rd and we could see a fairly heavy moth flight that night. Going forward we need to keep a close eye on our cotton for bollworm damage and populations. This includes checking terminals for worms and damage, as well as bolls and squares throughout the plant canopy. Also take the time and check underneath and in bloom tags, as bollworms will get trapped in blooms and feed on bloom before moving on to feed on bolls (**Figure 7**). For fields planted with a variety that is only two gene (Bollgard II and TwinLink) it may be beneficial to spray based on egg lay, especially if there are 20% or more plants with a bollworm egg. When counting eggs, count all the eggs you see and divide by the total number of plants inspected, infestation can be more than 100%. In our three gene cotton or in two-gene cotton that was not sprayed on egg lay, the economic threshold is 6% fruit damage (square and bolls). The best treatment for bollworms is the chlorantraniliprole active ingredient found in Vantacor, Shenzi, Besiege and others. If the only issue in the field is cotton bollworm, then either Vantacor or Shenzi are the best options as they contain only chlorantraniliprole and will preserve our beneficial insects. However, if stink bugs are also close to the economic threshold and application of either Besiege or Elevest would be a better fit as they contain the chlorantraniliprole active ingredient as well as either lambda-cyhalothrin (Besiege) or bifenthrin (Elevest) which can provide good control of our bollworm and stinkbug populations.



**Figure 7.** Cotton bollworm feeding within a dessicating bloom.