



# Blacklands IPM Update



## GENERAL:

A full week of dry and excessively hot temperatures has taken a toll on the areas corn crop and is not helping the cotton crop as it is trying to set fruit. Corn in the middle of the week was starting to show signs of both high temperature and moisture stress by leaves curling early in the day. Some area corn fields in our lighter soils west of Interstate 35 are having leaves stayed rolled throughout the entire day and not uncurling overnight, indicating that drought and temperatures are really hurting yield. Most of the cotton in the area is in the third week of squaring, but there are a few outliers that either started blooming this week or just started squaring this week. Fleahopper remain an issue in the area but are not very variable across the area with some areas needing to be sprayed again this week. Cotton aphids are also being found in cotton fields around the area but are currently not at a level that would justify treatment. Spider mites have not been found in area cotton since early May, but the current weather pattern could lead to some fields being infested with spider mites that may quickly need treatment. Hopefully, we can get a break from the excessive temperatures and even catch an area wide soaking rain, as if not cotton in the area may start to kick fruit (mainly squares and young bolls) as they start adjusting their fruit load to the limited resources they have. Another impact this hot and dry weather will have on the areas cotton crop is nutrient deficiencies due to low soil moisture in the root zone, not allowing for nutrients to be taken up by the plant.

## COTTON:

Cotton around the area was finally to look like a good crop, as a dry and extremely hot weather pattern moved in this week, and the weather forecast does not show any break in this pattern. Insect pest remain active in the area, and scouting should continue for a number of pests to avoid yield loss from an issue that is manageable. Cotton fleahopper (**Figure 1**) numbers are variable across the area, with some fields getting sprayed again for fleahoppers. The good news as in these fields that were treated for the second or third time for fleahoppers the numbers have started to go down. Two weeks ago, I was finding fields that were infested with fleahoppers as high as 60%, and our economic threshold is only 10-15% infested. Going forward once the field starts to bloom, we typically consider the field no longer susceptible to economic loss from fleahoppers. However, if a field enters bloom with less than 75%-80% square set, it is recommended to manage fleahoppers until peak bloom is reached. The fields that are just now coming into the squaring stage due to late planting, or replant situations are at the greatest risk for extreme yield loss from fleahoppers and should be watched closely as our pastures start drying down. Silver leaf nightshade and horsemint are two wild plants that fleahoppers also love to feed on, and as our pastures and ditches start drying down those fleahoppers will be moving and looking for new host. So far this year we are seeing great control of fleahoppers with treatments of acephate at 4 oz plus imidacloprid, Centric at 1.5-2.0 oz acre, acephate at 4 oz plus bifenthrin. Due to the current hot and dry weather pattern I would not recommend the acephate plus bifenthrin shot as this is basically asking for a flare up of aphids and/or spider mites with our current weather conditions. Other treatment options that look good in a local efficacy trial 4 days after treatment include PQZ at 1.6 fl. oz., Transform at 1 oz, and acephate at 4 oz mixed with Sefina at 3 fl. oz.

Aphids (**Figure 2**) are being found in a bunch of fields in the area, and it is a pest we need to keep in mind when treating fields for other insects from this point in the season forward as their number can increase rapidly as fields get stressed from low soil moisture and high temperatures. If we need to treat for fleahoppers it is recommended to at least include imidacloprid with any insecticide that is going to kill the beneficials as it will provide some suppression of the aphid population. Other products that could be used include mixing 3 fluid ounces of Sefina with acephate to manage aphids and provide some residual for fleahoppers, Centric which will provide suppression of aphids, and even Transform. Spider mites are not being found currently in area cotton but could quickly become a widespread issue if we do not get a reprieve from the current weather pattern soon.



**Figure 1.** Adult cotton fleahopper, photo credit: Salvador Vitanza



**Figure 1. Aphids on the underside of a cotton leaf,** photo credit: John C. French Sr., Retired, Universities: Auburn, GA, Clemson, and U of MO, Bugwood.org

The hot and dry weather is also reducing our fields yield potential, as under both moisture stress and heat stress the plant will begin to shed fruiting positions. Additionally, the depleting soil moisture conditions will lead some nutrient deficiencies like Potassium that will not be corrected until we get another rain event. Some people may look to foliar feeding to help correct these nutrient deficiencies but going that route can be costly and may not lead to a yield benefit. There are two problems with foliar feeding that can make it costly and potentially not lead to a yield benefit, the first is foliar feeding needs to start before you can visually see the deficiency symptoms, and the second is typical foliar feeding application rates will only provide the plant with enough of a nutrient for a single day of growth. During 2021 I conducted a Foliar Potassium trial where we applied two different foliar K products at various rates applied at peak bloom and saw not benefit from the applications. This may have been from the continued rains late in the season, but the best way to correct a nutrient deficiency is by correcting what is causing the deficiency. For Potassium, the cause is typically dry soils not allowing the plant to take up the Potassium it needs.

## **CORN:**

Corn is in the middle of kernel development with some area fields already reaching the dent stage, but a bulk of the corn in the area is in the dough stage of kernel development. At this time our major pest of concern includes diseases like southern rust, charcoal rot, and Aspergillus ear rot (**Figure 3**) and aflatoxin contamination. Given the weather pattern we had this year Aspergillus ear rot and aflatoxin contamination is likely going to be high this year, especially in fields that were not treated with an atoxigenic product like Afla-Guard or AF-36 Prevail. For those that did apply one of the atoxigenic Aspergillus products, understand that you may still see aflatoxin this year, but their application will reduce the accumulation of aflatoxin in the grain. Some management options we have this late in the growing season include scouting fields for Aspergillus ear rot and harvesting the more severe fields first and as early as possible, and second set up the combine to remove the small light weight kernels that are likely highly contaminated with aflatoxin.



Charcoal rot (**Figure 4**) is not new, and I actually saw some last year in the Malone area. This disease will infect the vascular tissue of the plant and lacerate the tissue within the stalk causing yield loss and reduce stalk strength. Charcoal rot infected plants can be found easily since infected plants will die sooner than those plants within a field that are not infected. When you slice up the stalk from the crown, the vascular tissue will have a grayish-black mass of fungal growth including mycelium and spores, along with very little pith between the xylem and phloem tissues in the stalk. At this point in the growing season, there are no management options to reduce the impact charcoal rot will have on yield.

Southern rust (**Figure 5**) is another late season corn disease that we can see occasionally in the area when we have warm weather. Southern rust creates a round pustule that is orange in color and should not be confused with common leaf rust which forms an elongated pustule that is a dark red in color and does not cause economic yield loss. Thankfully, I have not received any reports of southern rust infections around the coastal bend, Brazos River bottoms, or the southern Blacklands. We do need to keep an eye out for this disease in are corn as it can lead to some significant yield losses, but treatment for the disease is rarely justified after the plants reach the dough stage.



**Figure 3.** Aspergillus ear rot, photo credit: Gary Munkold, Bugwood.org



**Figure 4.** Corn stalk showing symptoms of charcoal rot. Photo credit: Gary Munkold,



**Figure 5.** Rust diseases of corn, left- southern corn rust, and right- common corn rust. Photo credit: Tamra Jackson-Ziems, Bugwood.org

I have been asked by a few producers in the area about spider mites, and much like in cotton there is no doubt that our current weather pattern is perfect for spider mite populations developing in area corn fields. Thankfully, once the field reaches the dent stage, which most of the corn is not far from, spider mites will not cause a significant yield loss. One issue I see with spider mite infestation in area corn this year stem from the crops yield potential, and the cost of control. The products labeled for spider mites in corn are not cheap, and if we have a very optimistic prediction of yield of 90 bushel/acre or less some of these products may not pencil out. If you do have a spider mite infestation in your corn and are wondering if you should treat it will likely be on a field-by-field basis depending on the fields yield potential and growth stage. If one of your fields has spider mites and you are wondering if you should spray, please do not hesitate to contact me or your local AgriLife Extension County Office for help determining to treat the field or leave it alone.

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