



Blacklands IPM Update



GENERAL:

Wheat in the area continues to dry down and I expect to see some fields harvested in the next 10-14 days. The corn crop is progressing along nicely, especially while we have had cool early morning temperatures and very few daily highs above 87° Fahrenheit. However, our late planted corn crop is struggling a little due to low soil moisture in its root zone and hopefully we catch some of the rains predicted for later this week which will also benefit our areas cotton crop during the seedling stage. I have started to pick up on corn earworms and fall armyworms in area corn fields mainly in The cotton crop looks good, but is currently growing a little slow due to the cooler mornings, but has help limit temperature stress to both our corn and cotton crops. Currently in the cotton scouting program I am seeing aphids, thrips and spider mites in all cotton.

CORN:

Corn around the area ranges from about the V2 (2 leaf collars visible) to about the V10 growth stage depending on planting date. Most producers finished up their side dressing and application of AF-36 or Afla-Guard. I have not seen any major issues in the few fields that I am routinely checking, but I have started to pick up some corn earworms and fall armyworms feeding in the whorls of some non-Bt corn the amount of whorl damage I am observing is not alarming since it is in non-Bt corn. If you are seeing excessive amount of feeding in Bt corn, please contact me as I would like to look at the field and potentially pull samples to test for Bt resistance. Currently there are no disease issues being observed in area corn fields, but if we get the moisture we are predicted we could see some disease start showing up in area fields, especially on fields that received hail damage a few weeks ago.

COTTON:

Cotton fields in the area range from just emerging to the second true leaf stage. Cotton across the area is growing a little slow because of the cooler morning we have experienced over the last couple of days prolonging the time fields will be susceptible to economic thrips damage. In the scouting program I am finding thrips, aphids, and spider mites, all of which are causing issues in only a handful of fields in the scouting program. The aphids and spider mites appear to be more common in fields in the Northern and Western portions of Hill County. The main issue in fields in the scouting program currently is thrips, based on the growth stage and recent temperatures.

Thrips populations vary depending on the proximity to drying wheat fields, cut hay meadows, and ditches being cut. There are a few fields in the scouting program that are at or very close to the economic threshold, and these fields either have a field edge with or located near drying wheat fields, cut hay meadows, and/or ditches recently mown. Thrips are small straw brown to black insects that are cigar in shape (**Figure 1**). They feed on the plant by rupturing the plant's cells and ingesting the content for a food source. Their feeding results in crinkling of leaves (**Figure 2**), silver spots on the underside of the leaf (**Figure 3**), and under severe infestation loss of apical dominance or worse death of the plant. Excessive thrips feeding can also delay the maturity of cotton, cause the plant to set square later which can reduce yield and potential lead to harvest issue due excessive moisture delaying harvest operations. Thrips will continue to be a pest of cotton until the field starts setting squares which typically occurs around the fifth true leaf stage. The economic threshold for thrips in cotton is one thrips per true leaf (**Table 1**), for example a field average 2 true leaves with 2 thrips per plant is at threshold.



Figure 1. Adult thrips view under magnification. Photo credit: David Kerns



Figure 2. Crinkling of leaves cause by thrips feeding. Photo credit: John C. French Sr., Retired, Universities: Auburn, GA, Clemson, and U of MO, Bugwood.org



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Table 1. Economic threshold for thrips in cotton

Growth stage (number of true leaves on plant)	Number thrips per plant to justify treatment
Cotyledons	1 thrips
1st True leaf	1 thrips
2nd True leaf	2 thrips
3rd True leaf	3 thrips
4th true leaf	4 thrips

Treatment for thrips is rarely justified once plants reach the 5th true leaf stage or plant start setting squares.

Figure 3. Thrips feeding damage causes the underside of the leaf to develop silver specks where the thrips have feed on the leaf.

Aphids are also being observed in area cotton fields in the scouting program and appear to be worse in fields in the Western and Northern portions of Hill County. In the scouting program aphid populations range from 0.5 aphids per leaf to a high of roughly 2 aphids per leaf and are not a major concern but populations should be considered when selecting an insecticide to apply to combat thrips. Typically, aphids are not a major issue in seedling cotton as they often do not build up to large enough colonies to cause economic damage. Aphids in seedling cotton can sometime be a good thing, as they will act as attractant for beneficial insects that can help keep other pest populations in check. Aphids feed on the plant by sucking phloem sap from the plant robbing it of carbohydrates that would otherwise be used for plant growth. Prolonged and/or heavy aphid populations can cause the leaves to cup downward. Aphids present in cotton also increases the risk of the plant(s) becoming infected with the Cotton Leaf Roll Dwarf Virus, which is a new disease of cotton in the United State of America. The economic threshold for cotton aphids is 40-70 aphids per true leaf in cotton before the first cracked boll and 10 aphids per leaf after the first cracked boll.



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Figure 4. Aphids on a young cotton plant. They will typically be congregated in colonies near the terminal of he plant feeding on the tender plant tissues.

Spider mites have also been observed in some cotton fields in the scouting program at very low levels. Most of the fields I am finding spider mites in are either in the Northern or Western portions of the county. In these fields, spider mites are being found close to field edges, tree lines, and recently killed weedy areas within a field. Spider mites damage causes damage to the plant in two ways, the first is by feeding on the contents of the cells causing the leaf to develop a reddish appearance and eventually turning brown, and secondly causing premature defoliation both of which reduces the rate of photosynthesis leading to reduced energy production that would be used for plant growth or to fill out cotton bolls. The economic threshold for spider mites in cotton has not been fully developed, but in pre-bloom cotton fields should be scouted for leaf damage and fields should be treated to avoid premature defoliation. Luckily, rain is capable of washing spider mites off the leaf and may help reduce the current spider mite populations. Additionally, spider mites are typically favored by hot and dry conditions, and looking at the forecast the predicted weather environment is not favorable for their development, and past weather conditions were not very favorable for their development which could explain why the spider mite population are so low.



Figure 4. Magnified picture of a spider mite. Photo credit: David Kerns



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Figure 5. Picture of spider mites feeding on a cotton leaf with visible damage to the underside of the leaf.

The presence of aphids in seedling cotton is not that concerning for two reasons, first most insecticides used to manage thrips will also control or suppress aphids, and secondly the presence of aphids in the field can attract beneficial insects that can help suppress other insect pest as well. However, if treating for thrips fields scouting should be continued to monitor aphid populations, as most insecticides used to manage thrips will kill our beneficial insect which will allow for aphids populations to grow at a rapid rate. The presence of spider mites this early in the growing season is concerning because of how they develop, the damage they inflict on the plant, and the fact that they are not controlled with common insecticides. In fields that are being treated for thrips and/or aphids it is best to evaluate the population of spider mites in the field and select an insecticide that is soft on the beneficial insect population. If a field with spider mites is treated with an insecticide harsh on beneficial insects, fields should be scouted for spider mite population development to prevent economic damage caused by spider mites.

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