Texas IPM Partners With Nature

Blacklands IPM Update

Texas A&M AgriLife Extension

GENERAL:

Hot temperatures moved in the area over the last week with some of the highest temperatures of the year occurring last weekend through the middle of the week. Thankfully, the rain received last week helped our area corn, cotton and sorghum crop withstand these high temperatures. Corn grain harvest started this week while silage is still be chopped across the area. Our late planted corn should continue to be harvested for southern rust, but most of the late planted corn has reached the dent stage and the risk of economic loss from southern rust. I have seen an increase in incidence and severity in our late planted corn fields around Malone and Irene. Cotton across the area is growing nicely and some of our earliest planted cotton fields are approaching cut out and has a excellent fruit load. The average Node Above White Flower (NAWF) across the scouting program is 6.4, with a few fields right at 5 NAWF and some of our last planted cotton fields around 7.5 NAWF. Cotton insect pest issues are low now, but we need to keep an eye out for boll feeding pest such as bollworms, stink bugs, and Lygus. The area rain has created a great condition for cotton growth, and we need to keep an eye on our field's growth rates and manage accordingly to avoid rank growth.

CORN & SORGHUM:

Corn grain harvest stated this week on some of our earliest planted corn fields, while fields are still being chopped for silage. Our late planted crop is between the late dough stage and the dent stage. Late last week (7/9) I found southern rust (**Figure 1**) in corn around Irene and Malone, and over the last week I have seen an increase in the southern rust despite the temperatures being in the upper 90s and into the triple digits. Late planted corn fields should be scouted for southern rust and treated when at least 50 percent of the plants have 3 to 5 percent of the leaf surface of lower leaves infected with southern rust. Depending on the susceptibility of the hybrid to southern rust fungicide treatment is rarely justified after the crop reaches the dent stage. I have attached a publication form Dr. Tom Isakeit that list fungicides labeled for southern rust in corn and can help you determine whether you need to treat for southern rust.

Figure 1. Southern rust (left) and common rust (right) on corn in Texas. Photo Credit: Tom Isakeit

Sorghum across the area is flowering or past it. There is no sorghum acres in the scouting program, but have bad a few field visits between Bynum and Irene. Fields should be scouted for headworms, stink bugs, and sugarcane aphids. The moth flight that occurred over the 4th of July weekend also coincide with sorghum stating to erect from the boot and starting to pollinate, attracting the corn earworm moths to lay eggs. Sugarcane aphids are present and depending on the level of tolerane the hybrid has to sugarcane aphids there may be some fields that need to be treated to avoid economic loss.

COTTON:

Thanks to last weeks rains our cotton crop has made it through this heat wave with minimal issues. Cotton pest activity has slowed down over the last week, but we need to keep an eye out for insect pest as we move into the boll filling stage. Spider mite issues were reduced thanks to the recent heavy rains and a big beneficial insect population, but if this hot dry weather pattern continues we could soon see spider mites become an issue again. Bollworms are not a major issue in area cotton thanks to a couple of factors, but are being found in some non-Bt cotton that is one of my company sponsored variety trials. Now that we are getting plants with a good boll load stink bugs could soon become an issue, and should stat being scouted for in area cotton fields.

Bollworms are not an issue in the areas cotton crop, but I am finding worms and damage is some non-Bt cotton in between Itasca and Mayfield. There was a large moth flight and egg lay around the 4th of July weekend, but the egg lay in cotton is not what I expected it to be thanks to the growth stage of other crops. When these moths were looking to lay eggs around the 4th of July there was still corn in the area with green silks and most of the areas grain sorghum was starting to flower, this attracted the moths away from the cotton.

Stink bugs and lygus could soon become an issue in area cotton, but since our areas sorghum is still flowering it could be awhile before they really start moving into the cotton crop. Stink bugs and Lygu use their piercing sucking moth parts to pierce young maturing bolls to feed on the developing seeds. This feeding leads to stained lint, hard lock, or the lint not fluffy out when the boll opens, and their feeding damage can both transmit or cause a favorable route of entry for boll rot pathogens to enter the bolls. A sign that stink bugs or Lygus are feeding on cotton bolls is stained lint or wart like growths on the interior boll wall (**Figure 2**). I have seen a few stink bugs in some fields on the west side of Hill County, but I have not seen enough damage to justify treatment. The lush canopies that we have this year is very attractive and conducive for stink bug and lygus issues. Stink bugs should be treated when they are present and 20 percent or more of the bolls sampled have visual internal damage. The economic threshold for Lygus depends on the sampling method, after peak bloom the threshold is 4-6 Lygus per 6 row feet when using a drop cloth, or 15-20 lygus per 100 sweeps when using a sweep net.

Figure 2. Wart like growth on the internal wall of a cotton boll, caused by stink bug feeding.

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Now that cotton fields across the area are reaching peak bloom and starting to set bolls, the plant is at it highest demand for Potassium (K) in the growing season. Over the last week I have started to see plants in multiple fields across the area with a few plants expressing Potassium deficiency symptoms. When in peak bloom the demand for K can be between 3 and 4 pounds of K per acre per day. Symptoms of K deficiency is interveinal chlorosis followed by a reddish discoloration (**Figure 3**) If plants are deficient in K, they will be more susceptible to disease, could defoliate prematurely, shed fruit (small bolls and squares), and fiber quality will be reduced.

Figure 3. Potassium deficiency symptoms in cotton

Soils in our area are typically not deficient in K, but there are a number of factors that can cause plants to become deficient, including soil moisture, root growth, K source in the soil, and fruit load on the plant(s). The amount of water or the lack thereof in the soil around the roots can limit the ability of the plant to bring up water, Potassium, and other nutrients. In waterlogged soil the oxygen concentration is reduced and reduces the ability of the root system to grow and take up nutrients. In dry soils the water becomes bound so tight that the water in the soil profile and any nutrients in the water solution are bound so tight to the clay particles that the plant is unable to absorb the water and nutrients present in the profile. Another reason we can see K deficiencies is an imbalance between the K supply and the demand for K in the plant. As a field starts to flower its demand for K is increasing and becomes highest around peak flowering where fields could take up as much as 4 pound of K per acre per day. This increase in demand for K is from the role K plays in boll filling and the fiber maturation process.

There are foliar fertilizer products that can be used as a K source, but most of these products will only apply about 3 pounds of K2O when applying them at their maximum labeled rate. Even though you applied a 3 pounds of K2O per acre using a foliar feed, does not mean that all 3 pounds will be taken up by the plants. Spray coverage, droplet size, use of wetter/stickers all have affect how much of the foliar fertilizer is taken up by the plants. Another factor affecting the uptake of K by the plants from a foliar fertilizer is the fact that when plants become deficient in K and as leaves age the leaves develop a thick waxy layer that can prevent the K2O from entering the plants. Foliar products can be useful in fields that are showing deficiencies, however their application should be made as soon as the symptoms start appearing, but it is also important to remember that under a goo fruit load the demand for K could be as much as 4 pounds K per acre per day and if you apply the maximum rate and get 100 percent absorbed by the leaves you are only applying enough K for the plants for one day. The use of foliar K fertilizers should be used to provide enough K to the plants so they do not start shedding fruit before the conditions causing the K deficiency is corrected. The reason we are seeing these deficiencies in our cotton is two-fold, the first reason being the fruit load and the second being our drying soil conditions. Most of our area cotton fields have a great yield potential thanks to a low thrips and fleahopper pressure this year compared to years past. This has caused the plant to need more K than it can take up from the soil and have already stored in the plant. The second reason is the drying soil conditions have made it harder for the plant to uptake nutrients, and because of our wet soil conditions early in the season our root systems probably did not go down very deep where most of our soil moisture and plant available K is located now. The heavy fruit load and the rate at which these squares are being set when added with our drying soils has lead the plants to have a demand for more K that what the root system is able to absorb from the soil solution. At this point in the season they only thing we can do is make a foliar K application and hope our environmental conditions correct themselves quickly so they plant can take up what K is available in the soil and avoid multiple trips across the field. Once the growing season is complete soil sampling is the best way to assure your soils have adequate K concentrations and apply fertilizer to field(s) that need more Potassium.

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