BLACKLANDS IPM UPDATE

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GENERAL:

Some much needed rain was received across the Blackland Prairie with totals ranging from ½" to as much as 3 inches in the Southern portion. Corn and sorghum planting operations are wrapping up, and cotton planters are starting to roll with favorable soil moisture and forecasted temperatures becoming more favorable for cotton growth. Pest activity in wheat is starting to pick up with leaf rust, true armyworms, and stinkbugs being found in area wheat fields. Thanks to the rain and the full moon last week we are seeing a heavy run of true armyworm larvae in some area wheat fields, and populations are heavy across much of the Texas Blacklands. The recent rains should help finish the wheat crop off and get cotton emerged, but soils are drying out quickly was poor subsoil moisture levels and could use another rain soon. The armyworm and stinkbug issues could also impact area corn and sorghum fields. Overall, the area's wheat crop look good, except for the handful of fields that were planted early, or planted to a Hessian fly susceptible wheat variety. Leaf rust activity is starting to pick up in the area fields that have not received a fungicide application. True armyworms are starting to move into area fields in high numbers, and stinkbugs are starting to move in and out of area wheat fields that are finished or wrapping up pollination.

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WHEAT DISEASE:

Leaf rust (**Figure 1**) pressure in wheat had been low up until the rains last week, and has started to increase over the last 7-10 days in fields that have not been treated with a fungicide. Currently, most of these pustules are being found on untreated wheat fields and are present in the lower canopy. This sign of new active leaf rust pustules is a sign that a fungicide application may be warranted to minimize the impact leaf rust has on wheat yields. Thankfully, most of the wheat around Hill and McLennan Counties has reached or passed the flowering stage, and we may only need about 3 weeks of protection to get us past the hard dough stage. Once the crop reaches the hard dough stage, the impact leaf rust can have on yields is reduced dramatically and given that it we are only a few weeks away from many of the fields reaching this stage we can get away with a cheaper fungicide application like propiconazole or tebuconazole.

Powdery mildew is still present in area wheat fields, and fields should be monitored closely. Thankfully, it looks like we should be getting some warmer weather in the area next week that should slow down the activity of powdery mildew. I have seen a few fields that are having powdery mildew infection move up into the middle canopy, but most of the infections I am seeing are not new and active. When looking at powdery mildew, new infections will be white, while older infections will have a more grayish to brown color with black dots (**Figures 2 & 3**). This disease should be monitored closely, and it too can have a significant impact on wheat yield, and fields should be treated if the crop has not reached the hard dough stage and the disease risk infecting the top two leaves of the plant.

Figure 1. Wheat leaf rust. Photo credit: Donald Groth, Louisiana State University AgCenter, Bugwood.org

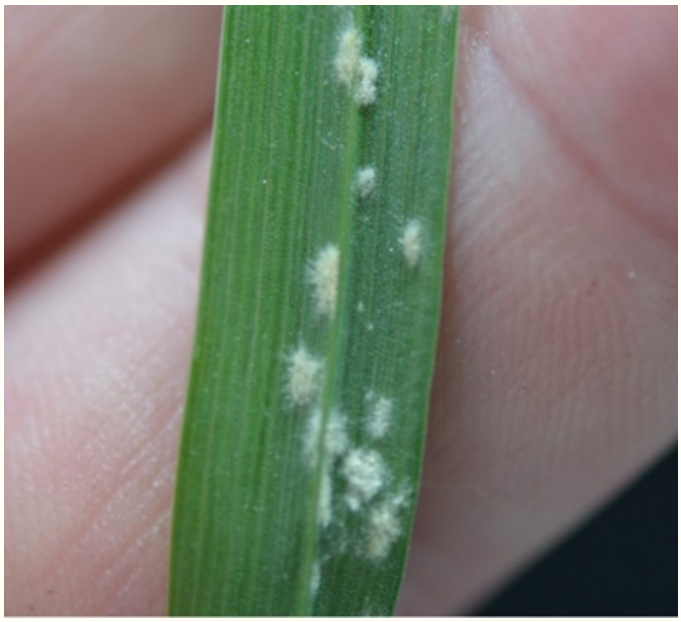

Figure 2. Up close photo of the white mycelial mass produced by the powdery mildew pathogen.

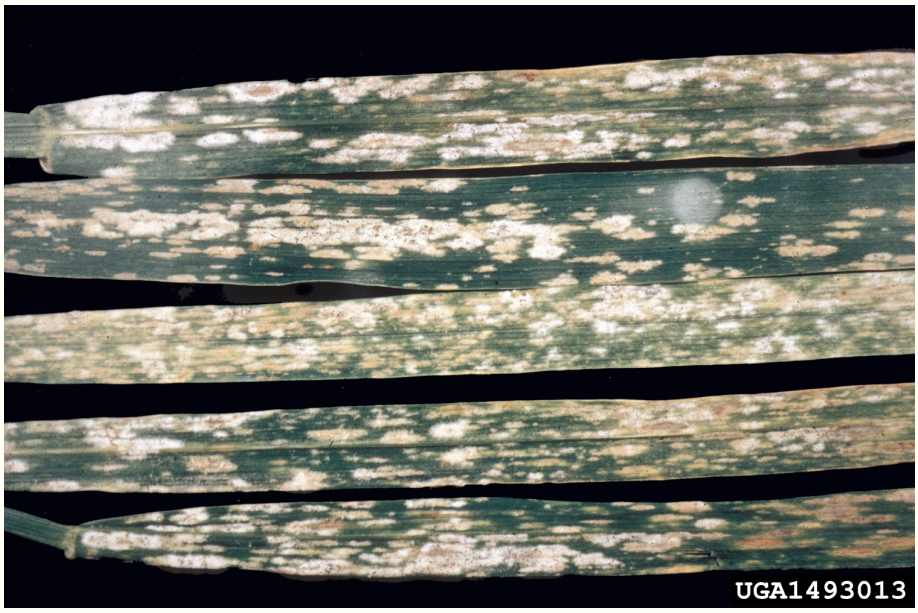

Figure 3. Older powdery mildew infection, note the darker color of the powdery mildew growth. Photo credit: University of Georgia Plant Pathology, Univeristy of Georgia, Bugwood.org

WHEAT INSECTS

Currently our biggest issue in area wheat is the true armyworm. Thanks to cooler temperatures, recent rains, and the full moon last week much of the Blacklands is experiencing a heavy run of true armyworms. True armyworms can be green to brown in color with light stripes running the length of the body and have a tan head capsule (**Figure 4**). The head capsule of a true armyworm lacks the white inverted Y that is present on fall armyworms and have a pattern of narrow lines that looks like a net. This pes prefers dense canopies as the adults lay their eggs in shaded parts of fields, and the larva tend to hide in places where sunlight does not reach. Currently very high numbers have been reported in Falls, Hill, and Milam Counties, and I would suspect surrounding counties will also have issues with true armyworms. When checking fields for true armyworms it is best to look early in the morning or near sunset, as the larvae will hide out on the soil or near the base of the plants during the day. Also, when looking it is important to look under any organic matter that is sitting on top of the soil as they will tend to hide under these to get away from the light. Damage from true armyworm starts as windowpanes on the leaf as the small larvae do not have the mouthparts capable of chewing entire leaves, but as the caterpillar grows it will start to consume entire portions of the leaf. Additionally, the true armyworm consumes about 70% percent of it diet during the last two instars. The current economic threshold for true armyworms in wheat is 4 to 5 armyworms per 1 square foot, however, this threshold was established on cheaper wheat prices and with current wheat prices at or above $7.00/bushel this threshold is like lower and closer to 2 or 3 per square foot. There are a few management options available for true armyworms in small grains including chlorantraniliprole based products (Vantacor and generics; Besiege), pyrethroids, Spinosad, Bt sprays, and malathion. The most economical treatment will likely be one of the pyrethroid based products and should provide good control. Given the crop stage and how close we are to reaching harvestable kernels, I do not see where we would need to utilize a product that will provide a long residual activity.

Figure 4. True armyworm larva. Photo credit: Roger Schmidt, University of Wisconsin-Madison, Bugwood.org

Stinkbugs are starting to show up in some area wheat fields, but currently I have not seen a population that would warrant much concern. There are multiple species of stinkbug that can be found infesting wheat fields including the rice stinkbug, conchuela stinkbug, southern green stinkbug, and multiple species of brown stinkbug (**Figure 5**). Stinkbugs can be found infesting wheat fields from the time the head emerges until the crop reaches the hard kernel stage. They use their piercing sucking mouthpart to feed on the developing kernels, cause light weight kernels and aborted kernels. Kernels that are fed on and not aborted tend to have reduced germination and reduced baking quality. It takes a lot of stinkbugs to justify treatment for them, and the economic threshold depends on the maturity of the kernel ranging from 1-3 stinkbugs per 10 heads (**Table 1**). Stinkbug populations in wheat, much like in row crops tend to be more congregated near field margins with populations typically reducing as you move further into the field. They tend to be transitory in wheat, such that you can see them in high numbers one day, and then a few days later hard to find. Products currently labeled for stinkbug management in small grains are pyrethroids and should provide good control if needed.

Table 1. Economic threshold for stinkbugs in wheat

Growth Stage	Threshold	Is spraying worth it
Flowering to soft dough	1 per 10 head	Yes
Hard dough	3 per 10 heads	Yes
Hard kernel	>3 per 10 heads	Not Likely

Figure 5. Common stinkbugs infesting wheat: rice stinkbug (top left), conchuela stinkbug (top right), southern green stinkbug (bottom left), and brown stinkbug (bottom right). Photo credits: Pat Porter, Apurba Barman, Lesley Ingram, Bugwood.org, and Russ Otten, University of Georgia, Bugwood.org