

Blacklands IPM Update

GENERAL:

For what we have experienced over the last 6 months our local wheat crop looks good. No major pest issues exist in the fields I am looking at, but have found bird cherry oat aphids, greenbugs, leaf rust, stripe rust, powdery mildew and Septoria leaf blotch present in fields at extremely low levels. As I write this, we are getting rain, and hopefully this is the last spell for a while, so we can get some corn acres in the ground.

Wheat Insects:

Both bird cherry oat aphids (**Figure 1**) and greenbugs (**Figure 2**) have been observed in area wheat fields. These insects were only present in 36 percent of the fields in the scouting program and were predominately bird cherry oat aphids. These aphids are at levels well below the economic threshold and are not a major concern yet, but due to their reproductive capacity it is something we need to keep an eye on. These insects are known to transmit the Barley Yellow Dwarf Virus, and the greenbug also injects a toxin into the leaf causing it to turn yellow and die prematurely. Bird cherry oat aphids do not have an established economic threshold because they rarely cause economic damage, however, if they are abundant and the crop is stressed and/or Barley Yellow Dwarf Virus is being observed in the field, treatment may be necessary. Greenbugs are frequently economic pest of wheat in Texas and there is an established economic threshold for them, this threshold used the plant height and number of aphids per linear row foot (**Table 1**). Differentiating between greenbugs and bird cherry oat aphids is quite easy. The bird cherry oat aphid is olive green in color with a reddish patch around the base of the cornicles (tailpipes), while the green bug is pale green with a darker green stripe down the middle of its back. The tips both bird cherry oat aphids and greenbugs legs and cornicles are black.

Plant Height (inches)	Number of greenbugs per linear foot
3-6	100-300
4-8	200-400
6-16	300-800



Figure 1. Bird cherry oat aphid, notice the brown patch on the back of the aphid. (phot credit: John Jackman)



Figure 2. Greenbug, notice the light green body, with the dark green stripe down the middle of its back. (phot credit Rick Grantham)



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Wheat Disease

The excessive amounts of moisture received over the last 6 months, plus the crazy weather conditions over the last month and a half created extremely favorable conditions for foliar diseases. Current diseases being observed include leaf rust, stripe rust, powdery mildew and Septoria leaf blotch. All of them mentioned diseases are below anything that needs to be sprayed except for one field in the Covington area where powdery mildew was bad enough it needed to be sprayed. Last week (2/11-2/15) stripe rust was found in 45% of the fields, leaf rust in 9%, powdery mildew in 45%, and Septoria found in 63% of the fields in the scouting program. Below is a little information about each of the diseases being found across the county.

Stripe rust is yellowish orange in color and are produced in line parallel to the leaf surface and looks like stripes on the leaves (**Figure 3**). It is easily distinguishable from leaf rust by the color and shape of the pustule or lesion. Stripe rust is favored by cool wet conditions and out of the three rust diseases of wheat it has the lowest optimum temperature for growth. Optimum growing conditions for strip rust is wet weather with temperatures between 50 and 60 Fahrenheit. I am seeing some stripe rust in the variety WB Cedar, and talking with Dr. Clark Neeley the stripe rust in this variety is adult resistance and does not start until after jointing. The rain today and the weather forecast for the next 10 days is favorable for stripe rust growth. There are multiple fungicides labeled to control stripe rust including fungicides from the strobilurin and triazole families, and some fungicides with mixed modes of actions, check the label to ensure that product is labeled for wheat and to control stripe rust.

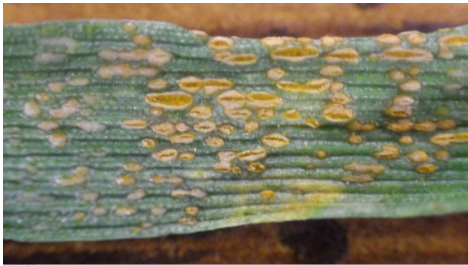


Figure 3. Stripe rust on wheat. Note the elongated pustules that are yellowish to orange in color.

Powdery mildew is another disease being observed in area fields, with one location that was bad enough a treatment was warranted. Powdery mildew is seen as white to grey cottony growth (**Figure 4**). It is typically observed on the upper leaf surface but can be found on any above ground plant part. As fungus matures brown to black dots can be observed within the cottony growth. Powdery mildew is favored by temperatures in between 50 and 70 degrees Fahrenheit and high relative humidity values and declines once the temperature rises above 75-degree Fahrenheit. Some other factors that can lead to powdery mildew growth is dense stands, high nitrogen fertility, and rapid growth. If powdery mildew infections get out of hand, it can cause the plants to lose vigor and impair both grain fill and heading. Control measure for powdery mildew of wheat include resistant varieties, lighter seeding rates to improve air circulation, minimize over fertilization with Nitrogen, and use of fungicides. Much like strip rust, multiple fungicides in both the strobilurin and triazole families as well as mixed family products are labeled to control powdery mildew in wheat, read the label to ensure that product is labeled for both application in wheat and to control powdery mildew.



Figure 4. Powdery mildew growth on wheat leaf with black fruiting bodies present within mycelium mass. Photo credit: Mary Burrows, Montana State University, Bugwood.org.

Septoria leaf blotch, also known as Septoria tritici blotch is a minor disease in this area of Texas and has been observed this year in extremely low levels in a couple of fields. Symptoms of this disease start as small chlorotic spots on the leaves, as the lesion(s) enlarge they become light tan and develop dark colored fruiting bodies within the lesions (Figure 5). These lesions are often long and narrow defined by leaf veins. Septoria infections require extended periods of leaf wetness and is most aggressive when temperatures are cool (50 to 85 F). Disease spread is favored by wet windy weather, and under these conditions can spread rapidly from the lower leaves to the upper leaves. Management options include volunteer wheat management, crop rotations where wheat is planted every 3 plus year, and fungicide applications. Like most foliar wheat diseases, multiple fungicides from both the triazole and strobilurin families are effective at managing Septoria leaf blotch, read the label to ensure that product is labeled for both wheat and Septoria leaf blotch.



Figure 5. Septoria leaf blotch lesions with black fruiting bodies (pycnidia) within the lesion. APS Digital Image.

Upcoming Events

April 12– Wildlife trapping meeting
April 25– Hill County Wheat Tour.