

GENERAL:

Mother nature strikes again and brought almost two inches of rain in some parts of Hill County and brought corn planting to an abrupt halt. The rain has also created a favorable environment for both stripe rust and powdery mildew which is starting to show up in the Covington area. The weather forecast for the next seven days appears favorable for continued development of both stripe rust and powdery mildew, and fields should be scouted to apply fungicides in a timely manner to prevent economic yield loss. I have also observed tan spot and wheat spot blotch in a few fields in the scouting program, and given the past weather conditions and future weather conditions fields should be scouted for these diseases especially if the field is wheat behind wheat or has grassy weeds in the field.

WHEAT:

Stripe rust (**Figure 1**) was first observed in Hill County in one field in the Malone area roughly two weeks ago and has since been found in more fields as far north as Covington and as far east as Milford. Stripe rust in these fields are not widespread across the field but is severe enough in places to warrant a fungicide application based on the weather forecast. Stripe rust is favored by temperatures between 50 and 64°F and needs the leaf to be wet for roughly 6 hours to infect the plant. Over the last several weeks the wheat canopies in the scouting program have remained wet with dew late into the day which has helped facilitate the stripe rust infection in these fields. Spore of stripe rust are spread long distances by wind currents and spread locally by rain and heavy dew. Stripe rust will remain an issue in the area until our temperatures consistently reach about 75°F.



Figure 1. Stripe rust pustules on wheat leaves found in Hill County.

Powdery mildew (**Figure 2**) has been found on one Hill County wheat field in the Covington area. It has surprised me that I haven't seen powdery mildew until the week when we look back at the weather pattern it has been favorable for disease development for some time. Looking forward, the predicted weather will be favorable for continued growth and development of powdery mildew. Powdery mildew infections can be identified by white powdery fungal growth on the leaf, and sometimes stems of wheat. As the powder mildew grow ages, these fungal masses will develop a grey color with black dots which are fruiting bodies that will be able to last until a new susceptible crop is planted and the environmental conditions are favorable. Infection and disease development is favored by temperatures ranging from 59 to 71°F, high humidity, and dense stands. The fungus does not require the leaf to be wet for an extended period for infection to occur unlike leaf rust and stripe rust. The application of high Nitrogen rates can make fields more susceptible to powdery mildew, and N encourages excessive plant growth and tillering of wheat. This excessive plant growth and tillering leads to a dense canopy that creates high canopy humidity that favors the development of many fungal pathogens including powdery mildew.



Figure 2. Powdery mildew symptoms observed in wheat from Hill County, Texas.

There are several fungicides available for wheat and other small grains to combat both stripe rust and powdery mildew. The timing of application for fungicide targeting powdery mildew and rust should be made based on the susceptibility of the variety to these diseases, if future weather conditions appear favorable for powdery mildew or stripe rust, and fungicide selection should be based on the fields yield potential and the market value of the crop. There is varietal differences among hard red winter wheat on their susceptibility to stripe rust and powdery mildew, while most soft red winter wheat varieties express some level of resistance to powder mildew and stripe rust. To determine your varieties susceptibility to powdery mildew and/or stripe rust please refer to the Wheat Variety Characteristics Table published in the 2019 Texas Wheat Variety Trial Results book. This book can be found online at varietytesting.tmu.edu/files/wheat/2019/2019-wheat-publication-1030.pdf

Blacklands IPM Update is a publication of Texas A&M AgriLife Extension IPM Program in Hill & McLennan Counties.

Authors:
Tyler Mays, Extension Agent-IPM Hill & McLennan Counties
Zach Davis, County Extension Agent-AG/NR

126 South Covington Street
P.O. Box 318
Hillsboro, Texas 76645
Phone: 254-582-4022
Fax: 254-582-4021
Mobile: 979-482-0111
Email: Tyler.mays@ag.tamu.edu