

Wheat Disease Update – 5 March 2020
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Although wheat in Oklahoma is coming out of dormancy, wheat diseases remain mostly absent over much of the state. The only disease I observed around Stillwater today was wheat soil-borne mosaic/wheat spindle streak mosaic in a few of the susceptible varieties in the variety demo. This virus disease is not a problem in Oklahoma or the central plains due to effective and durable genetic resistance in nearly all wheat varieties planted in the central plains for the last 4 decades. However, susceptible varieties such as those developed in states where these virus diseases do not occur (e.g., Colorado and the Texas panhandle) will still occasionally show symptoms if planted in central OK as in Figure 1. Around Stillwater, I also found some scattered individuals and small colonies of bird cherry-oat aphid in the lower canopy of early planted wheat strips. I did not find any foliar diseases.

Figure 1. Symptoms of wheat soil-borne mosaic/wheat spindle streak mosaic in susceptible wheat varieties in the Stillwater variety demonstration strips. **Left photo** (2-28-2020 Stillwater variety demo; late planted) - notice the yellowish appearance in the center strip (susceptible variety) compared to the strip on the right (resistant variety). **Center photo** (2-28-2020; STW variety demo; early planted) – notice the yellowish color in the two strips compared to the more solid green color in the strip to the far left (resistant variety). **Right photo** – a mosaic pattern due indicative of wheat soil-borne mosaic.



Across Oklahoma, the only report I've received of wheat foliar diseases has been from Josh Anderson (Senior Research Associate, Noble Research Institute, Ardmore, OK) in south-central OK near Ardmore. In early to mid-February, Josh reported finding tan spot in a no-till wheat field (see 2-11-2020 update; <http://entopl.okstate.edu/pddl/2020/PA%2019-3.pdf>). On 2-28-2020, Josh found powdery mildew in an

OSU Elite trial near Ardmore (Figure 2). As you can see in Figure 2, there not only is powdery mildew, but also there appears to be an aphid or two on the back leaves.

Figure 2. Lower wheat leaves with powdery mildew observed by Josh Anderson, Noble Research Institute, 2-28-2020.



Finally, as reported by Dr. Amir Ibrahim (Regents Professor, Small Grains Breeder/Geneticist, Texas A&M University, College Station, TX), stripe rust has made an appearance in south Texas (Figure 3). Dr. Ibrahim reported that at Castroville, TX,

“I visited the naturally inoculated Rust Evaluation Nursery at Castroville, TX during March 3-4, 2020. Wheat growth stages range from Feekes 5 to 10. Stripe rust is present in very susceptible types such as ‘Patton’ soft red winter wheat and ‘TAM 110’ hard red winter wheat. Leaf rust is not present at this point. Leaf rust is usually heavy here and uninform around mid- April.”

Dr. Ibrahim also reported that at Uvalde Texas,

“Uvalde seems to be the first location to detect wheat stripe rust in Texas. Wheat growth stages range from Feekes 6 to 10.1. Stripe rust at Uvalde is higher and more uniform compared to Castroville. The forecast calls for 48 to 62o F night temperatures and stripe rust will continue to be active.”

Figure 3. Stripe rust as observed by Dr. Amir Ibrahim (Texas A&M University) near Castroville, TX (photo on the left) and near Uvalde, TX (photo on the right).



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