

Wheat Disease Update – 11 April 2020
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Reports from this last week have indicated wheat across much of Oklahoma is at the boot (Feekes growth stage 10) stage with heads just starting to emerge. That is true around Stillwater, at Chickasha (per Dr. Brett Carver; OSU Professor/Wheat Breeder) and across southwestern OK (per Gary Strickland; County Educator; Jackson County). Of course, wheat in northwestern OK and the panhandle is not this far along, but also has made considerable progress.

With the mostly cool and wet weather over the last couple of weeks, foliar diseases also have been observed and reported with increasing frequency. Most prominent among these have been the leaf spotting diseases, namely, Septoria leaf blotch (Figure 1) and tan spot. *Stagonospora nodorum* blotch also likely is there, but to date, I have only isolated the fungus that causes Septoria leaf blotch from samples. These leaf spotting diseases also cause significant yellowing of wheat foliage as more thoroughly discussed in the Pest E-alert distributed on 27-March (<http://entopl.okstate.edu/pddl/2020/PA%2019-11.pdf>). However, what has taken me by surprise and confirmed by multiple sources (Carver at Chickasha and Strickland in southwestern OK) is how high these leaf spotting diseases have moved up the canopy. Around Stillwater, I have seen symptoms of leaf blotch in the mid-canopy with some symptoms on the leaf just below the flag leaf (F-1 leaf). Typically these diseases do not move up the canopy to the flag or the F-1 leaf. If these leaf spotting diseases are up this high in the canopy, a fungicide spray definitely is recommended to protect the flag and F-1 leaves.

Figure 1. Symptoms of Septoria leaf blotch (photo on left and center) and powdery mildew (photo on the right) observed on wheat at Stillwater, OK the week of April 6-10. Although mostly on lower leaves, in some varieties these diseases have moved up into the mid-canopy and occasionally F-1 leaves.



In addition to the leaf spot diseases, an increase in stripe rust also has been observed around Stillwater, at Chickasha (Carver), and in southwestern OK (Strickland). Mostly the increase in stripe rust has been observed as small to large “hot spots” as presented in Figure 2 from Stillwater, but this indicates that stripe rust is present and active in Oklahoma. Powdery mildew also has increased on susceptible varieties and around Stillwater has moved up into the mid canopy on a number of varieties.

Figure 2. A stripe rust “hot spot” in a strip of a susceptible wheat variety (photo on the left) with a close up of a flag leaf (photo on the right) heavily infected with stripe rust in that hot spot.



Often what occurs in Texas is what we will eventually see in Oklahoma when it comes to rusts. Hence, also note what Dr. Amir Ibrahim (Regents Professor & Small Grains Breeder/Geneticist; Texan A&M University) indicated in an update he sent out on 7-Apr. In this update he indicated that,

“Leaf rust is uniform across the naturally inoculated evaluation nursery at Castroville, TX. (Castroville, TX is about 25 miles west of San Antonio, TX). Leaf rust is uniform across the spring wheat. Flag leaves of susceptible spring wheats are covered with leaf rust. Leaf rust was rated 90S on the flag leaf of very susceptible spring wheat genotypes. As of April 6, 2020, ‘TAM 110’ was rated 70S for leaf rust in the upper canopy.”

In summary, multiple wheat foliar diseases are active in Oklahoma with the leaf spotting diseases, stripe rust and powdery mildew all being present to varying levels. The forecast for the next 7-10 days is cool to cold with some moisture likely. These are conditions that will be favorable for all these diseases to continue their activity and enhance their spread. Leaf rust, although not yet a problem in Oklahoma has become severe in south Texas, which typically means we will be seeing its arrival in Oklahoma within the next couple of weeks. Wheat across much of the state is at the boot stage with heads starting to emerge, so if a field has good yield potential now would be the time to consider applying a fungicide to protect against multiple foliar diseases. This is especially true if a susceptible variety has been planted.

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