

Wheat Disease Update – 4 June 2020
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This likely is the last disease update from Oklahoma until preparation starts for planting in the late summer. Harvest is definitely underway across central and southern/southwestern OK, and Josh Bushong (Area Extn Agron Spclst – northwestern and northeastern OK) indicated wheat is quickly turning across northern OK as well. Dry conditions in northwestern OK and the OK panhandle have limited diseases in those parts of OK, and with wheat quickly turning, diseases should not be a factor from here on. The one exception to this would be if head scab was occurring at a high incidence, but to date I have had only one report of just light scab in the northeastern part of Oklahoma.

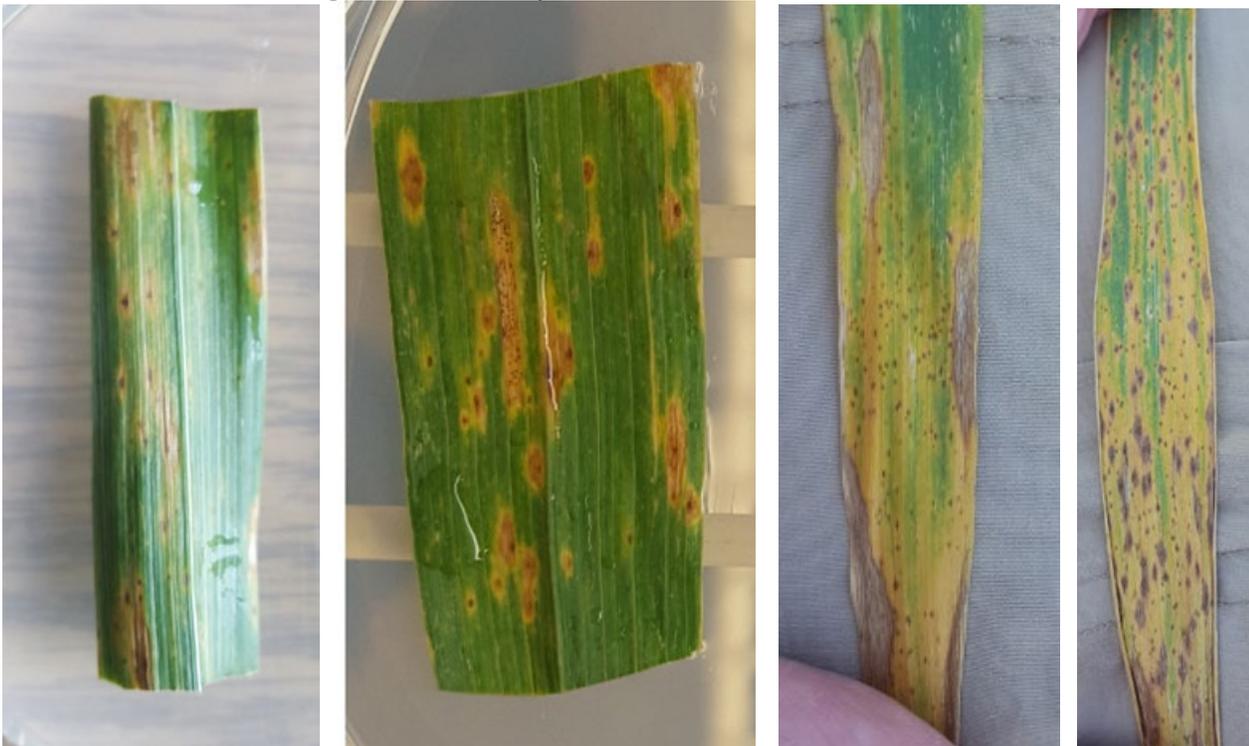
One report of interest that has come is the occurrence of dark brownish/black to dark bronze-colored heads in mature wheat (Figure 1). Although at a low incidence (Figure 1, left photo) these heads are noticeable and have been observed across multiple varieties by Gary Strickland (Extn Educator; Jackson Cnty; southwestern OK), Dr. Amanda de Oliveira Silva (Asst Professor & Small Grains Extension Agronomist) and Dr. Brett Carver (Regent's Professor/OSU Wheat Geneticist & Breeder), and myself. These heads, which typically are sterile or only have small and shriveled grain, seem to be most common in areas where freeze was most damaging, and likely are related to that environmental cause (i.e., freeze).

Figure 1. Darkened heads at low incidence in mature wheat in a field in southwestern OK. Cause likely is environmental; most likely related to freeze. [photo credit: Gary Strickland; Extn Educator; Jackson Cnty]



I also want to follow-up on the widespread occurrence of splotchy browning and spotting of wheat leaves that was observed across many varieties over Oklahoma this year. I collected and plated numerous leaves from such plants, and the best I can determine is that much of this browning was caused by Septoria leaf blotch (and to a lesser extent, tan spot). Freeze and drought also likely contributed in some cases. Figure 2 shows my reasoning for this. The first four photos are examples of the splotchy browning and spotting of leaves. Some leaves would be almost entirely brown/necrotic. Upon plating and incubating these leaves, I often would not find any pathogens after two days in alternating light dark, which is needed to induce sporulation of the tan spot fungus. However, if I kept these leaves for a longer time (6-10 days), I often would find a high incidence of pycnidia indicative of Septoria leaf blotch forming over the leaves (bottom photo in Figure 1). Oozing from these pycnidia contained spores of the fungus that causes Septoria leaf blotch. Occasionally I also would find sporulation of the fungus that causes tan spot as well as the fungus that causes spot blotch. Also mixed in and often overgrown were many secondary, non-pathogenic fungi that are taking the opportunity to grow on the dead leaf tissue. As a result, I am attributing the widespread leaf browning observed this year to be primarily the result of Septoria leaf blotch.

Figure 2. Various “types” and “degrees” of leaf browning/yellowing/spotting observed on wheat across northern Oklahoma during mid to late May.





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