

Wheat Disease Update – 16 May 2019
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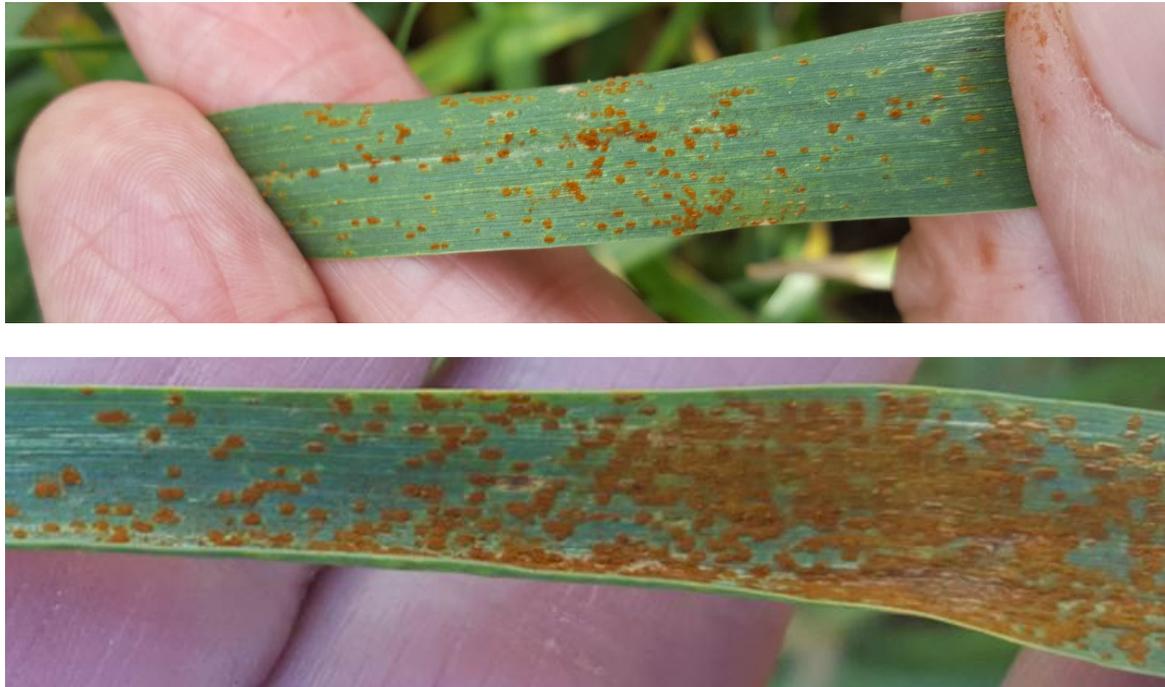
I started this past week on Monday (13-May) at the variety trial **at Chickasha, OK**, where wheat was mostly full kernel watery to milky. Stripe rust was the most prevalent foliar disease, but overall was not extremely heavy in the variety trial. Septoria/Stagonospora was a close second to stripe rust, and actually was more widespread than stripe rust but for the most part was only on the lower and mid leaves. Leaf rust also was present, but overall seemed less than stripe rust. From Chickasha, I moved to **Tipton, OK** in southwestern OK where the wheat was mostly about soft dough. Leaves here were quickly turning and showed a combination of stripe rust, leaf rust and Septoria/Stagonospora. However, varieties and lines with good resistance stood out as shown in Figure 1. On Tuesday (14-May), I was at the field day near **El Reno** in central OK (25 miles west and a bit south of OKC). Wheat here was at the end of flowering to full kernel-watery. Overall diseases were light with Septoria/Stagonospora on lower and mid leaves and some stripe and leaf rust on upper leaves. Powdery mildew also was present, but mostly only on certain varieties. Next, a demonstration was visited near **Minco, OK** (about 20 miles west). This demo was planted quite late (early December), and was mostly at flowering. The foliar disease situation was basically the same, that is, some stripe and leaf rust along with some powdery mildew and Septoria/Stagonospora.

Figure 1. Comparison of wheat lines susceptible (left photo) and resistant (right photo) to foliar diseases in a nursery near Tipton, OK on 13-May-2019.



From Minco, I moved north to the variety trial at **Kingfisher, OK** (30 miles NW of OKC). The explosion of leaf rust at Kingfisher was impressive, and finally fit with my expectations for the occurrence of leaf rust this year. Figure 2 shows flag leaves of the same susceptible variety in the Kingfisher trial on 07-May (upper photo) and 14-May (lower photo). This illustrates just how quickly a rust epidemic can occur if there is a susceptible host and a favorable environment.

Figure 2. Leaf rust on a variety in the Kingfisher variety trial taken on 7-May (upper photo) and 14-May (lower photo).



Finally, there may be some additional diseases to watch for this year given the extended cool and wet spring. This includes several diseases, but primarily bacterial streak (black chaff) and Fusarium head blight (head scab). Dr. John Fenderson (Technical Product Manager; Bayer Crop Science-WestBred) indicated on 9-May that he observed major infections of bacterial streak across central Texas. Dr. Brett Carver (OSU Wheat Breeder) also indicated seeing symptoms consistent with bacterial streak at the field day near Okmulgee in eastern OK earlier this week. As you can see in Figure 3, symptoms of bacterial streak are somewhat similar to Septoria/Stagonospora, and could be overlooked if both are present. However, the head symptoms should be more discernable, and currently I have not seen symptoms such as this across central and western OK.

Figure 3. Bacterial streak (black chaff) as seen on a leaf (left photo) and on a head and awns (right photo). Note the darkened spots on the stem beneath the head and the dark bands on awns. (Photo credits to Dr. Jeff Edwards; Oklahoma State University).



Fusarium head blight (head scab; Figure 4) typically occurs in eastern/northeastern OK every year, and this spring has been favorable for this disease. Wheat heads will be totally or partially bleached and contain shriveled and often pinkish or salmon colored seed. To get more information on head scab, see OSU PSS-2145 (Fusarium Head Blight (Head Scab) of Wheat: Questions and Answers – available at <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-6307/PSS-2145web2013.pdf>) and OSU PSS-2136 (Considerations when Rotating Wheat behind Corn – available at <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-5436/PSS-2136.pdf>). Another outstanding resource regarding Fusarium head blight is the “Fusarium Head Blight Prediction Center” at <http://www.wheatscab.psu.edu/>. At this site there are resources describing the disease as well an assessment tool that can be used to help predict when spraying is critical to help prevent Fusarium head blight.

Figure 4. Fusarium head blight (head scab) of wheat. Photo to the left is a field view (photo credit – Dr. Stephen Wegulo; University of Nebraska); photo to the right is an individual head with a fusarium infected (pink) kernel exposed (credit – Dr. Jeff Edwards; Oklahoma State University).



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