



Pest e-alerts



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Wheat Disease Update – 01 May 2017

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The last three days of last week were spent in southwestern (Altus), central OK (Apache & Chickasha) as well as here around Stillwater. Wheat I saw at those locations ranged mostly from milk to soft dough, with some even approaching medium dough. I'm not sure about wheat in northern OK and over into the panhandle. The Panhandle is of particular interest with the far western parts of it receiving significant snow (up to 6-12 inches I heard on weather reports around Boise City).

Flag leaves on wheat across southwestern and in central OK are mostly gone as a result of rust (both stripe and leaf, but primarily leaf rust I think), wheat streak mosaic, and barley yellow dwarf. I saw little active stripe rust, but did see more active leaf rust. An abundance of leaves showed rust telia, but again, mostly leaf rust (I think). I also saw scattered white heads in wheat at Altus. Examination showed dark lower stem internodes and splitting of stems revealed cottony fungal growth in the lowest internode with a reddish/pinkish color indicating *Fusarium* root rot as the most likely cause (Figure 1). A sample of white plants with mostly sterile heads was brought to a field day at Apache, OK in central OK; examination revealed take-all as the likely cause (Figure 2). Barley yellow dwarf was present at all locations, but seemed more prominent at Chickasha.

Figure 1. (A) Scattered white heads often indicate root rots. (B) Lower stem internodes can be examined for discoloration and lesions that help to diagnose root rots and also split and examined for fungal growth. (C) Low internodes also can be split and examined for fungal growth inside the stem. In this photo (C), the reddish/pinkish color indicates involvement of the fungus *Fusarium* that causes dryland root rot (photo credit: Dr. Bob Bowden; USDA-ARS; Manhattan, KS).

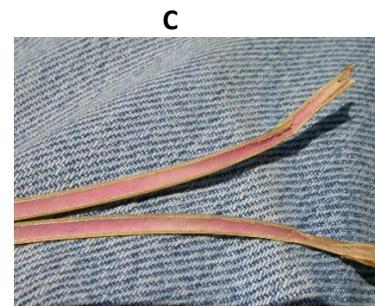
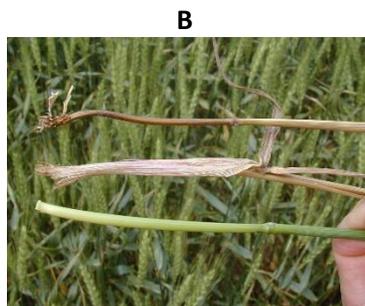
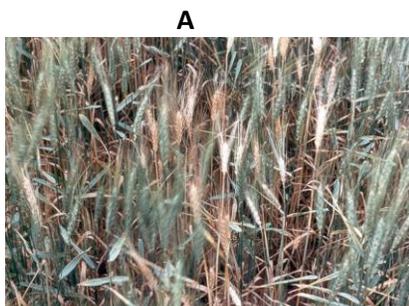


Figure 2. Take-all of wheat as indicated by white heads/plants in the field (A) and dark growth on the lower stem (B).



As in my last update, *Wheat streak mosaic virus* (WSMV) continues to be found and reported across a large area of western Oklahoma. The cool wet weather will likely help manage infected plants to continue to mature, but yields definitely will be significantly impacted. For more information on mite-transmitted wheat viruses such as WSM, please see OSU Fact Sheet EPP-7328 (*Wheat Streak Mosaic, High Plains Disease, and Triticum Mosaic: Three Virus Diseases of Wheat in Oklahoma*) available at <http://pods.dasnr.okstate.edu/docushare/dsweb/HomePage>

Reports/excerpts of reports from other states:

Dr. Stephen Wegulo, Professor/Extension Plant Pathologist, University of Nebraska, April 27, 2017: “Late this afternoon, April 27, I found a significant amount of stripe rust in my wheat fungicide trial plots at UNL’s Havelock Research Farm in Lincoln, Lancaster County, in southeast Nebraska. Incidence was moderate to high and severity on some leaves was greater than 50%, but mostly trace to 10%. Leaves at all levels of the canopy from low to high have stripe rust. Earlier in the afternoon, I did not find stripe rust at Mead, just 35 miles north of Lincoln; however, I suspect it is just a matter of time and it will be there. Growth stage at Mead and Havelock ranges from Feekes 7 to Feekes 9. Yesterday, April 26, Jenny Rees, UNL Extension Educator, found trace to low levels of stripe rust on wheat in Nuckolls County in south central Nebraska. Therefore, to date stripe rust has been confirmed in the Panhandle, south central, and southeast regions of Nebraska. Favorable (cool, wet) weather is forecast over the coming days. Growers are encouraged to scout their fields and be prepared to apply a fungicide to protect the flag leaf.”



Dr. Erick DeWolf, Wheat Extension Pathologist, Kansas State University, May 1, 2017: “The April 24 to May 1, 2017 period has been a critical week for the Kansas wheat crop. Multiple freeze events and snowfall in much of western region of the state dominate the concerns. What about the impact of the freezing temperatures on the development of disease? Unfortunately, the freezing temperatures are unlikely to kill the stripe rust and leaf rust that were already established in our fields. The frequent rains may stimulate additional disease development in areas of the state that escaped the freeze events.



A look at the weather during the past two weeks indicates that conditions were conducive for continued disease development in central and southeastern regions of the state. Many areas of central Kansas had between 12 to 44 hours of favorable temperature and humidity conditions. The southeast region experienced more than 50 hours of temperature and humidity that were favorable for stripe rust.

Observations from the field indicate that stripe rust has moved to the upper leaves of wheat in some parts of central Kansas. Stripe rust is now severe in some fields that were not protected with fungicides in southeast Kansas. The disease had moved to the upper leaves in this region of the state a few weeks ago. Stripe rust was also detected at low levels in the middle or low canopy in new parts of north central and northwest Kansas. Leaf rust was also reported in some additional counties this week with more activity farther west than we had seen to date. Leaf rust was still restricted to the lower and middle canopy in most fields but there are a few locations where the disease has moved to the upper leaves.

The reports of disease moving to the upper leaves in central Kansas and additional reports of disease further west are cause for concern. However, the concerns about freeze injury and damage done by recent snow complicate the decision to apply a fungicide to manage rust or other diseases. Growers in areas that escaped the freeze should be considering fungicide applications to prevent further development of stripe rust and leaf rust in susceptible varieties. Growers that are uncertain about yield potential because of damage from recent freeze events and snowfall should be more cautious. Growers with wheat that is at the flag leaf emergence or boot stage of development may have 10-14 days to make their final decision about fungicide applications for this year. Where possible, growers should wait to see how the crop recovers before investing in a fungicide application.”

Plant Disease and Insect Diagnostic Laboratory

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