



Pest e-alerts



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Wheat Disease Update

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Fall 2011 was relatively “quiet” in terms of wheat diseases. In November we received several samples that were diagnosed with root rot on the young plants. Examples included samples from Roger Gribble (Northwest Area Extension Agronomy Specialist) and Cori Woelk (Extension Educator; Kay County). *Fusarium* [dryland root (foot) rot] was isolated from the sample submitted by Gribble

from Kingfisher County, and *Bipolaris* (common root rot/spot blotch) was isolated from the sample submitted by Woelk. In both cases, symptoms were consistent with diseases caused by these pathogens.

Another submitted sample was diagnosed positive for wheat streak mosaic. This sample came in mid-Dec from Rick Nelson (Extension Educator; Beaver County in the OK panhandle). In addition to exhibiting symptoms indicative of WSM, wheat curl mites were found and it tested positive for WSMV (negative for BYDV and High plains virus).

There have been no observations of significant rust or powdery mildew in Oklahoma to date. On 07-Dec I did observe very small, “old” leaf rust pustules on the lowest/oldest leaves of Jagger and OK Bullet wheat planted in the variety demonstration at Stillwater. This was in the early planted (20-Sep) demonstration; no rust or powdery mildew was observed in the late planted (14-Oct) demonstration.

An interesting sample was submitted by Gribble in early Dec from Blaine County that consisted of plants from two areas in the same field. One sample exhibited BYD-like symptoms and tested positive for BYDV (negative for WSMV and HPV). The other sample exhibited circular-to-diamond-to-elliptical tan-colored lesions with water soaking and slight halos (see Fig 1). Jen Olson isolated three cultures of the fungus *Alternaria* from this sample. DNA isolation and

sequencing indicated two of these cultures were a saprophytic species of *Alternaria*, but the third shared the same DNA sequence with *A. infectoria*, which is associated with causing black point of wheat (not *A. triticina*, the cause of Alternaria leaf blight). This culture was sent to the USDA-APHIS-PPQ for official identification, and results indicate that the fungus is not *A. infectoria* or *A. triticina*. It is another species of *Alternaria* which is most similar to *A. ethzedia*, a pathogen of *Brassica* including canola. At this point we are not sure if this new *Alternaria* sp. is a pathogen to wheat or if it is a saprophyte. We currently have inoculated wheat seedlings in the lab to see if symptoms can be reproduced, and will continue to monitor the field.



Fig 1. Wheat leaf spots possibly caused by the fungus *Alternaria*.

Arkansas (Dr. Gene Milus (Small Grains Pathologist, University of Arkansas), Jan 6: “I’ve only been in plots at Fayetteville and did not see anything which is normal. Talked with folks from downstate who said they have not heard of any reports. It should be good weather for stripe rust if there is any around.”



Kansas (Dr. Erick De Wolf, Wheat Plant Pathologist, KSU), Jan 9: “I was out looking at volunteer wheat in a series of counties in North central and Northwestern KS this past December. This area of the state had more rain in the summer and fall months than many areas of the state and was more likely to have volunteer wheat. I was able to find a number of fields with volunteer wheat with the help of county agents. Several of these fields had severe symptoms of wheat streak mosaic (WSMV) and other viral diseases. The lab testing for these samples indicates that WSMV was the most common virus but HPV and TriMV were also present. Many of the fields also had symptoms of wheat leaf rust. This is not uncommon for KS in December. In many years this leaf rust will not make it through the winter, but if mild temperatures persist we could see some overwintering in northern KS.”

Texas (Dr. Robert Duncan, Asst Prof & State Small Grains/Oilseeds Extension Specialist, Texas A&M), Jan 6: “I have only found very low levels of leaf rust in a few of our forage trials around College Station.”



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