Plant Disease and Insect Advisory

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Wheat Disease Update

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Wet and cool weather continues to provide favorable conditions for spread and development of foliar diseases. This year, we have seen the entire spectrum including powdery mildew, leaf rust, tan spot, and septoria and barley yellow dwarf – BUT, thankfully no stripe rust (although stripe rust is appearing in Kansas; see report from "other state" below). At least in part because of these diseases, there is a lot of yellow wheat in Oklahoma. I say it this way, because I do not believe that all of the yellowing in wheat is a direct result of disease. For example, Brian Olson (OSU Plant Disease Diagnostician) completed running eight wheat samples on Friday (May 04th) for presence of barley yellow dwarf virus (BYDV), wheat streak mosaic virus (WSMV), and High plains virus (HPV). These were from the counties of Payne, Kiowa, Garfield (4), Grant, and Cimarron. All samples were negative for WSMV and HPV, while four of the samples (three from Garfield and the sample from Payne) were positive for BYDV. However, all of the samples except for the sample from Payne County, showed chlorosis and/or necrosis as well as stunting. In all of these samples, there was no indication that root problems were the culprit. Another example supporting this thought was the yellowing I observed this past week at the Canadian County field day south of El Reno (see photos). Fields of Jagalene had lower leaves

killed from powdery mildew and upper leaves yellowing from severe leaf rust on the upper and flag leaves. In a variety such as Bullet, which currently has excellent resistance to leaf rust and some resistance to powdery mildew, the leaves were basically green from top to bottom. However, circular spots of yellow wheat could be observed in the Bullet as a result of BYDV. Also at this field day, yellowing from septoria, tan spot, and possibly spot blotch were all

observed in the tillage study. Hence, I believe that in addition to the yellowing resulting from

the various diseases, extended wet and cool weather must also be contributing to the overall yellowing. Additionally there may be some other factors involved, but I have not been able to specifically identify those.

The other note related to leaf rust, was reported to me this past Friday by Dr. Brett Carver (OSU Professor and Wheat Breeder), who observed leaf rust on flag leaves of Overley in the 20-30S range while in plots at Lahoma leaf rust on flag leaves of Overley was around 05S. Bullet also was showing some pustules on the flag leaves and was rated in the 05 MS/MR range. One other observation that Brett indicated that is difficult to explain is that there appears to be no leaf rust developing on Thunderbolt, which should not be completely resistant to leaf rust by any means.

<u>OTHER STATES</u>:

<u>KANSAS - 03 May 2007 (Jon Appel, Kansas Department of Agriculture</u>:

I observed 2 fields in Kiowa County (SC), Kansas yesterday with stripe rust at trace levels. It is the first I have seen in the state. The fields were at boot stage.

<u>KANSAS - 02 May 2007 (Erick De Wolf, Wheat Extension Pathologist, Kansas State University</u>:

On Wednesday, May 2, we found stripe rust at a wheat variety demo plot in Pawnee County near the center of the state of Kansas. Several varieties had trace levels including Above, Avalanche, TAM110, and Ripper. There was one hot spot about 1 meter across in one plot where severity was high on Flag-1

leaves and some on the flag, too. The wheat was at the boot stage.

Leaf rust was the dominant disease in the plot with up to 5% severity on Flag-1 leaves of some varieties.

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