Plant Disease and Insect Advisory

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Wheat Disease Update – Oklahoma – 12 May, 2003

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Dr. Hassan Melouk (USDA-ARS peanut pathologist) and I traveled on Tuesday, May 06 from Stillwater to Chickasha to Apache to Ft. Cobb to Kingfisher, Marshall, and then back to Stillwater. Simply put (and to no surprise to anyone), the wheat needed moisture. Generally the wheat was from full berry to just-prior-to-soft dough.

Powdery Mildew (PM). This disease is still apparent, although it mostly seems to be shutting down (due to heat) before it has reached the flag leaves to any great extent. There are exceptions to this on susceptible varieties, where PM has been observed on flag leaves, for example, Phil Pratt observed PM on flag leaves of Jagger in eastern OK near Haskell, and in one plot near Stillwater, PM was observed on the heads of Jagger.

Wheat Stripe Rust. At the variety-demo at Apache, the varieties Above, AP502CL, Custer, Trego, Intrada, and 2137 had no flag leaves left due a combination of stripe rust and drought. Hence, even with moisture I suspect the yield and/or quality from these varieties will be hurt. Other wheats such as Jagger, Cutter, Thunderbolt, and several advanced breeder lines from Oklahoma, which are resistant to stripe rust, were green, but the flag leaves were mostly rolled up by mid-morning when we were there. Varieties with a more intermediate reaction to stripe rust (for example, Ok101, 2174, and 2145) have lost some of the green area of their upper leaves (flag and F-1 leaf) to stripe rust, but still had some green tissue. I would suspect that the hot, dry weather is halting the progress of stripe rust, but Oklahoma certainly will incur some losses from stripe rust this year.

Around Stillwater, I've seen basically the same thing, that is, varieties susceptible to stripe rust are losing their flag leaves due to the stripe rust and drought. Those varieties resistant to stripe rust need moisture, and, if susceptible to leaf rust have mostly scattered pustules (e.g., Jagger).

Wheat Leaf Rust. On varieties resistant to stripe rust but susceptible to leaf rust (Jagger is an example), scattered pustues of leaf rust were observed at Apache, but I didn't see leaf rust severities sufficiently high to be a major concern because of the stage of the wheat's maturity. This is about the same in eastern OK (Haskell), where Phil Pratt observed levelsof 6-7 (on a scale of 1-9) on Above and AP502CL on May 06th, but levels of 3 on Jagger and a trace to 0.5 on 2174. In contrast to this, Rollie Sears (Agripro wheat breeder) indicated that near Nardin, OK (north-central), Jagger had a high leaf rust severity on the lower leaves (60-80S) and was as high as 5-20S on the flag leaves. This was also true in plots just west of Stillwater, where we have a leaf rust trap plot and a fungicide trial (Ken Jackson's trial).

In these two areas, leaf rust has exploded and is in the 80S (7-9 on a scale of 1-9) range for presence of leaf rust. Ken Jackson noted a likely explanation for this, which is that these two trials are located just north of plots that have been routinely irrigated for the last 4 -6 weeks or so. On numerous occassions, winds from the south and south west were observed to be blowing water mist in the direction of those trials. Hence, the great increase in leaf rust and PM severity in these trials. However, based on this and Dr. Sear's report, I would be on the watch for leaf rust in northern OK where much of the acreage is planted to Jagger, especially if some moisture comes to facilitate leaf rust infection and development.

Barley Yellow Dwarf Virus. Symptoms of this virus disease continue to be reported, but the bigger concerns are the drought, the stripe rust and possibly the root rots (see below).

Root rots. Sharp eyespot (caused by *Rhizoctonia*) has been the primary root rot observed. Dr. Melouk and I saw some whiteheads in fields at the Marshall grazing site, but more importantly found many pretty green stems with full, green heads nearly completely girdled by sharp eyespot lesions at the base of those tillers. Hence, I would think that more whiteheads will appear as the wheat is finishing but before it turns completely.

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