



# **PLANT DISEASE AND INSECT ADVISORY**

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## **Wheat Disease Update Bob Hunger, Extension Wheat Pathologist**

On April 22<sup>nd</sup> I looked at wheat in the area of Hinton (about 45 miles west of Oklahoma City on I-40), Hobart (south western OK), north to Watonga (central OK), and then along Highway 51 back into Stillwater for about 80 miles. Nitrogen deficiency (as indicated by green “pocks”) was apparent in some fields, but for the most part, wheat looked good along this trip and ranged from in the boot stage to just starting to flower (Jagger field near Hobart). Overall, the wheat looked very good with many fields showing no or very little disease. The diseases I saw included powdery mildew, leaf rust, septoria/tan spot, and barley yellow dwarf virus (BYDV). Of these, BYDV probably was the most significant. I also saw some fields where there was the indication of aphid activity and mummies (Figure 1), but no living aphids. In these fields, there were some widely scattered symptoms of BYDV, but no or very little stunting. I only saw large, widely scattered pustules of leaf rust on lower, yellowing/dying leaves. Powdery mildew, if present, was confined to lower leaves and was no higher than the third leaf below the flag. In one field south of Clinton found tan spot/septoria. This was a no-till field as indicated by the large amount of residue in the field. Tan spot/septoria was no higher than the third leaf below the flag.



**Figure 1. Wheat leaf with aphid feeding spots and two mummies.**

At the variety trial near Homestead, OK (about 80 miles west of Stillwater), I observed a significant amount of flecking on leaves of many of the varieties in the trial (Figure 2). This flecking is quite similar to that caused by leaf rust, powdery mildew or bacteria, and was mostly apparent on the upper leaves while on the lower leaves symptoms more similar to tan spot/septoria were exhibited (Figure 3). Several samples have been received this year exhibiting this type of symptom. The pathogen that causes tan spot or septoria cannot be isolated from these leaves. The “flecks” usually turn into symptoms similar to tan spot/septoria, but as indicated, the pathogen is not there. My diagnosis is that this is “physiological flecking” that has been observed in Oklahoma in the past (called “Woodward fleck” back in the 1980s). The

causes of this vary and can involve among other things, nutrient deficiencies (chloride, zinc, and manganese), genetic factors, and environmental conditions such as when hot and sunny weather follows a cool, cloudy, and moist weather. As stated earlier, pathogens such as leaf rust, powdery mildew, or bacteria can be involved with causing flecks to appear, but in the case of physiological flecking no pathogen can be isolated. Tan spot and septoria are the two most likely diseases with which this can be confused in Oklahoma.



**Figure 2. Physiological flecking on upper wheat leaf (not caused by a pathogen).**



**Figure 3. Lower leaf from plant with physiological spotting on upper leaves. This is not septoria or tan spot.**

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