



PLANT DISEASE AND INSECT ADVISORY

Entomology and Plant Pathology
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Vol. 6, No.8

Website: <http://entoplpl.okstate.edu/Pddl/advisory.htm>

Apr 20, 2007

Wheat Disease Update Bob Hunger, Extension Wheat Pathologist

This update is based on a trip I took Monday (16-Apr) and Tuesday (17-Apr) from Stillwater to the south and west. On this trip I stopped at fields and variety trials/demos near El Reno (Canadian County), Minco (Grady County), Apache (Caddo County), Altus (Jackson County), Granite (Greer County), and then north to fields around Hammon & Leedy (Roger Mills, Custer, and Dewey Counties).

First and foremost – **still no confirmed stripe rust observed in Oklahoma** although it has been confirmed in parts of Texas just south of Oklahoma.

Powdery mildew (PM) is still obvious on susceptible varieties at all the locations I visited, but **leaf rust** was of more concern to me on this trip. The most severe leaf rust I saw was on Jagalene in the Altus area, where in one field there was a severity/reaction rating in the range of 65S-80S on the F-2 and lower leaves, 15-25/MS-S on the F-1 leaf, and no or very few pustules on the flag leaves. I observed lesser severities of leaf rust in the other areas I visited, but the same pattern of leaf rust through the canopy was present everywhere on susceptible varieties, that is, moderate to heavy leaf rust in the lower and mid canopy with a few pustules on the F-1 leaf and no or very few pustules on the flag leaf. **HOWEVER**, with the interspersed periods of rain and dew followed by drying and wind that have been common across Oklahoma for the last 10-14 days



(and more to come), the leaf rust can only increase. Reports I have received from various individuals in northern OK indicate that this same pattern of rust through the canopy is there but that the rust is not nearly as severe as in southern and central OK. Although I mostly looked at Jagger and Jagalene, I also looked at Cutter, Endurance, OKBullet, Overley, and others, but the only varieties I saw of major concern were the Jagger and Jagalene.

In summary, what I saw the last several days were many fields with high yield potential (at least 40-50 bu/A or even more in some cases) with moderate to high levels of leaf rust in the lower and mid canopy. I only saw one field where the wheat was at the flowering stage, with most of the fields I was in ranging from heads about half emerged to heads not quite yet fully in the boot

(this was in the Hammon/Leedy area). Most of these fields had powdery mildew in the lower to mid canopy that had not reached the F-1 or flag leaves if I was in a susceptible variety. Finally, our weather conditions have been (and are forecast to be) favorable for the spread and development of leaf rust, so I strongly recommend considering the use of a foliar fungicide if you have wheat that fits into this scenario.

Remember, foliar fungicides can only protect the yield potential that is present at the time of application, that leaf rust causes the most damage when there are severe levels prior to the dough stages, and that protection of the flag leaf is a good goal to shoot for, that is, apply fungicide before the flag leaf is rusted. Also remember that thorough coverage is critical to fungicide efficiency, and hence, all the labels I have read indicate that aerial application should be done in 5 gallons of water. No fungicide is labeled for application after head emergence, and all fungicides have pre-harvest intervals (PHIs) that indicate how many days are required between application and harvest. For the most part, I believe these are between 35-45 days. You can also refer to the article in the Wheat Production Newsletter (April 4, 2007; volume 3, issue 11) that can be found at: www.wheat.okstate.edu. After going to this web site, click on the “Wheat Management” link and scroll down to the list of “Newsletters” near the bottom where the Wheat Production Newsletters are listed by date. However, for the complete information on a foliar fungicide, be sure to read the label!!

Barley yellow dwarf was the other disease I observed at nearly all the stops I made. However, although the incidence of BYDV was high, the severity was not as bad as many years. Mostly I saw the small circles scattered across fields – sometimes many of these, sometimes not so many. These BYDV spots also have been reported by Gary Strickland (Extension Educator – Jackson County) and Mark Gregory (Area Extension Agronomy Specialist – Southwestern OK), as well as many others who also observed that mostly only discoloration and slight stunting was present that indicates the virus most likely came in from aphids in the late winter or spring rather than last fall. Samples tested in the Diagnostic lab from last week that were collected from near Stillwater (Payne County), near Marshall (Logan County) and near Kingfisher (Kingfisher County) have all been confirmed as BYDV positive.



Other diseases in Oklahoma: Last week several samples from Roger Gribble (Extension Agronomy Specialist – Northwestern OK) and Rick Kochenower (Area Research & Extension Agronomy Specialist – Oklahoma Panhandle) collected in northwestern OK and the panhandle tested positive for wheat streak mosaic virus. I also visited several fields that were in no- or low-till production, and tan spot and/or septoria symptoms were obvious in the field. Finally, I did come across a few spots of what appears to be a root rot in a variety demonstration south of the Altus station. This was the only indication I saw of root rots, and samples were brought back to the lab for evaluation.

OTHER STATES:

17 Apr 2007 (Dr. Ron French-Monar, Asst. Prof. & Extension Specialist, TAMU Agric. Res. & Extension Ctr., Amarillo, TX):

- Was out at some trial plots with Jackie Rudd yesterday (Monday) 10 miles east and 10 miles west of Vernon. We did see some leaf rust and stripe rust.
- 10 miles east of Vernon (Electra)--For leaf rust, 80% on susceptible lines (early planted, fully headed).
- 10 miles west of Vernon--trace to 5% stripe rust, 10-20 leaf rust on susceptible lines.
- Also, powdery mildew is still active on susceptible lines, only in the lower canopy.

11 Apr 2007 (Erick DeWolf, Extension Plant Pathologist, Kansas State University):

We continue to receive reports of trace levels of leaf rust in parts of Central and North Eastern Kansas. Counties with recently confirmed observations include Sedgwick, Reno, Harvey, and Douglas. The leaf rust is still limited to lower canopy and is at very, very low levels (<1% severity). All of these areas have experienced significant freeze injury during the last two weeks, and recovery from this injury is the top concern of producers. It is still too early to tell if leaf rust will complicate the recovery of injured plants. We will continue to monitor the disease picture and let you know what is happening.

Still no reports of stripe rust in Kansas

17 Apr 2007 (Xianming Chen, USDA-ARS Research Scientist, Pullman, WA):

Attached (below) is a stripe rust alert I just issued to the Pacific Northwest growers. The Horse Heaven Hills region is the hard red winter wheat growing area in the south-central part of Washington, just southwest of Tri-cities (Pasco, Richland, and Kennewick). Walla Walla is about 80 miles east of that region.

Wheat stripe rust is developing in Horse Heaven Hills. Today, I was checking wheat fields in the Horse Heaven Hills. Winter wheat crop ranges from stage 4 to 6. Stripe rust was found almost in every checked field. Rust severity ranges from 2 to 10%. With good moisture in soil and favorable weather conditions, stripe rust should develop rapidly from now on in the hard red winter wheat area. Growers in this region should check your fields more closely because major hard red wheat cultivars are moderately susceptible to highly susceptible. Please consider using fungicides when rust severity reaches 10 to 15%. This range is higher than our normal threshold because the crops have not reached to the flag-leaf stage and a little bit delayed spray could protect more of the late stages. However, growers in this region should not wait too long because the good rain a couple days ago and continued moisture conditions provide ideal conditions for rust infection. As the weather is getting warmer, rust will show up quickly.

No rust was found in the Walla Walla area today. However, as stripe rust is significant and continues developing in the Horse Heaven Hills region, growers in the Walla Walla area should start to check their fields, especially for fields grown with cultivars that were susceptible in the past. Growers in other regions should start checking winter wheat fields in two to three weeks.

If the weather conditions continue to be favorable to stripe rust, the Pacific Northwest may have an epidemic. Spring wheat crops may be more vulnerable because many cultivars are susceptible to stripe rust.

As usual, stripe rust developed to 50% severity on susceptible cultivars in our experimental plots at Mt. Vernon, Washington by the first week of April.

Stripe rust situation in other states. Stripe rust is light in California due to drought conditions and has been reported in Louisiana, Arkansas, and Texas, but generally light due to the combination of dry weather and recent frozen temperatures.

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, VP, Dean, and Director for Agricultural Programs, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of Agricultural Sciences and Natural Resources.