



PLANT DISEASE AND INSECT ADVISORY

Entomology and Plant Pathology
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Vol. 6, No.7

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

Apr 13, 2007

Wheat Disease Update Bob Hunger, Extension Wheat Pathologist

The update below is based on numerous calls I've received this past week, looking at plots around Stillwater, and a trip I took from Stillwater west about 65 miles to Okeene and then southeast to Kingfisher, OK and back to Stillwater on 10-Apr. Drs. Brett Carver (OSU Wheat Breeder) and Jeff Edwards (OSU Wheat Extension Agronomist) have also both been traveling and provided some of the information below, as have numerous producers and county extension staff that have called me during this past week. I've also attached updates from other states related not only to disease, but also to freeze damage.

Powdery mildew (PM) continues to be the most obvious disease around Stillwater and across much of Oklahoma, but **leaf rust** is quickly becoming just as visible in many areas. Brett Carver and I were both at Marshall, OK (about 30 miles west of Stillwater) this past Tuesday (10-Apr) and saw leaf rust severities approaching 90S on mid-canopy leaves of Jagalene with rust also on the F-1 leaf and even a few pustules on flag leaves. The next day, Brett saw similar levels of leaf rust on wheat at the Lahoma Station (about 15 miles west of Enid). The heavier severities were on the earlier planted wheat. In contrast, west of Marshall near Okeene and down by Kingfisher I saw very little leaf rust. On 11-Apr, Jeff Edwards (OSU Wheat Extension Agronomist) severe leaf rust levels on Jagalene and Jagger in the Hinton (about 40 miles west of Oklahoma City) area on leaves below the flag, with flecking on the flag leaf. Additionally, Gary Strickland (Extension Educator – Jackson County) and Mark Gregory (Area Extension Agronomy Specialist – Southwestern OK) have both indicated high levels of powdery mildew and leaf rust on primarily Jagger and Jagalene, with foliar fungicides being applied to many fields. Still no confirmed reports of **stripe rust** from Oklahoma.



In summary, it appears that this was (and still is) a PM year in Oklahoma, but even more importantly is quickly becoming a leaf rust year as well. Not only have high levels of leaf rust been observed, but this is the earliest I have seen these levels of leaf rust this early in the spring. That, plus the abundant periods of free moisture resulting from drizzle, dews, and rain should result in heavy leaf rust. For an example of this free moisture, look at the picture that I took at Okeene on 10-Apr. Nearly all of the wheat I looked at on that day was covered with this moisture due to drizzle/light rain. Based on all of this, I would be sure to be watching and considering the use of a foliar fungicide if you have wheat that has a high



Abundant free moisture on leaf surfaces enhances infection by all wheat foliar pathogens including leaf rust.

yield potential (at least 40-50 bu/A potential) and that is susceptible to leaf rust. 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. For more information on foliar fungicides, 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. In addition to this resource, consult with your County Educator and be sure to read the label of any fungicide that you are considering to use.

Other diseases in Oklahoma: During this past week, indications of several other diseases have been reported or samples have come to the lab for diagnosis. These include several virus diseases such as wheat streak mosaic virus (WSMV), high plains virus (HPV) and barley yellow dwarf virus (BYDV) (see right). Roger Gribble (Extension Agronomy Specialist – Northwestern OK) and Rick Kochenower (Area Research & Extension Agronomy Specialist – Oklahoma Panhandle) have sent in samples of leaves with symptoms of WSMV/HPV, and currently these as well as samples from central OK are being tested for presence of all three of these viruses.



I also have a couple of reports of stunting and yellowing in wheat in southwestern OK that may be associated with root rot. I’m hoping to check this out early next week.

OTHER STATES:

08 Apr 2007 (Gene Milus, Wheat Plant Pathologist, University of Arkansas):

After more than 6 weeks of above-normal temperatures, and with wheat 2 to 3 weeks ahead of normal, winter returned to Fayetteville, Arkansas. My technician turned on irrigation systems to protect plots during the early morning of 6 April when temperatures dipped below freezing for the first time. However, with temperatures forecast to be in the upper teens for the next two nights, I decided that it was not feasible to protect the plots, and my technician drained the irrigation lines to prevent them from bursting. We will mow the plots tomorrow in an attempt to stimulate regrowth. I believe we set an all-time record low temperature for April of 17F (-9C). It did not get as cold in the main row crop area of Arkansas, but wheat and rice crops likely will sustain some damage.

12 Apr 2007 (Gene Milus, Wheat Plant Pathologist, University of Arkansas):

Compared to questions relative to the extent and severity of freeze damage, everything else seems unimportant at this time. Wheat at Fayetteville is just starting to collapse today because temperatures have been cool. I suspect that all big tillers are mortally wounded and will die prematurely. Stripe rust appears to have survived for now on lower leaves in the canopy.

At Hope (30 miles east of Texarkana), temperatures were below freezing for about 5 hours on Sunday morning, and the low was 25F. Some symptoms of freeze damage were evident yesterday, but it was too early to determine the severity. There was a trace of leaf rust, stripe rust in a few plots, and powdery mildew in many plots.

At Lewisville (30 miles SE of Texarkana) and south of here, temperatures barely dipped below freezing for a few hours, and the wheat appeared to be pollinating normally. Stripe rust appeared to be about finished for the season and was producing telia. Night temps had been in the low 70's before the freeze. There was a trace of leaf rust and some mildew.

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

Allan Fritz, KSU Wheat Breeder, reported leaf rust in Barber County (South Central, KS) early this morning. He indicates that leaf rust severity on Jagger and Jagalene of 5% severity on the lower leaves. The bottom line is that leaf rust is on the move in Kansas and locations to our South, and we are likely to see this disease increase during the next few weeks.

The variety Overley is susceptible to some races of leaf rust, but to date these races do not appear to be causing damage in Kansas or Oklahoma.

No report of stripe rust to date.

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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.