



Pest e-alerts



*Entomology and Plant Pathology, Oklahoma State University
127 Noble Research Center, Stillwater, OK 74078
405.744.5527*

Vol. 19, No. 9

<http://entopl.okstate.edu/pddl/pddl>

3/20/2020

Wheat Disease Update – 20 March 2020

Bob Hunger, Extension Wheat Pathologist
Department of Entomology & Plant Pathology
Oklahoma State University - 127 Noble Research Center
405-744-9958

It's been wet across most of Oklahoma except in the far northwest and panhandle. Overall, the wheat crop is looking good, but foliar diseases appear to be building in southern Oklahoma and Texas. On 17-March, Dr. Amir Ibrahim (Regents Professor, Small Grains Breeder/Geneticist, Texas A&M University, College Station, TX), reported that he, “. . . visited the naturally inoculated Rust Evaluation Nursery at Castroville, TX on March 17, 2020. The nursery is about 196 miles from Texas A&M main campus in College Station. Wheat growth stages range from Feekes 6 (first node detectable at base of stem) to 10.5 (ears fully emerged but not yet flowering). Stripe rust does not seem to be active due to warming temperatures. Leaf rust is moving up the canopy of susceptible wheat (Figure 1).”

Figure 1. Leaf rust on the mid canopy of Jagalene hard red winter wheat at Castroville, TX (far southern Texas) on 17-March-2020. (photo credit: Dr. Amir Ibrahim, Texas A&M University)



Foliar disease incidence also is increasing in south-central OK as reported by Josh Anderson (Senior Research Associate, Noble Research Institute, Ardmore, OK), who indicated he was starting to see more diseases late last week (12-March; Figure 2)

Figure 2. Diseases and pests observed by Josh Anderson (Senior Research Associate, Noble Research Institute, Ardmore, OK). **Left photo** – Leaf rust on triticale. **Center photo** – Stripe rust on wheat. **Right photo** – Aphids (most likely bird cherry-oat) in lower canopy of wheat or triticale



By contrast, Dr. Brett Carver (Wheat Breeder/Geneticist, Oklahoma State University) visited one of his trials near El Reno in central OK and found nothing but green, lush wheat – no diseases.

Around Stillwater, no leaf rust has been seen, but a very few leaves infected with stripe rust were observed on 6-Mar-2020 by Dr. Amanda de Oliveira Silva (Small Grains Extension Agronomist; Oklahoma State University) in her variety demonstration strips just west of campus (Figure 3). These are early-season infections of young wheat plants, and at this incidence do not indicate severe stripe rust is on the horizon. The stripe rust pathogen requires moisture and cool temperature to infect, produce spores and spread, and with this low in Oklahoma and apparently in Texas as well, it is unlikely that stripe rust will be a significant disease in Oklahoma this spring. Amanda also noted a few spots of powdery mildew in her variety demo. This disease is favored by high humidity and cool temperature, and could continue to spread with the type of weather we currently are experiencing. However, I have not had other reports of powdery mildew from across the state and have not seen it elsewhere around Stillwater.

Figure 3. Stripe rust as observed by Dr. Amanda de Oliveira Silva (Oklahoma State University) in the Stillwater variety demonstration strips on 6-Mar-2020



Samples submitted to the Plant Disease and Insect Diagnostic Lab have increased as several samples were received this week for diagnosis. These samples represent a mixture of symptoms including those caused by abiotic (wet soil/cool temperature, nutrients, etc) and biotic (leaf spot diseases and possibly barley yellow dwarf) factors. To date, all these samples tested for viruses (*Wheat streak mosaic virus*, *High plains virus*, and *Barley yellow dwarf virus*) have tested negative. Other samples have leaf spots on the older/lower leaves, but I have not been able to isolate the fungi that cause tan spot or Septoria/Stagonospora leaf blight. Hence, I suspect that most of the spots on the lower/older leaves of these samples are the result of these leaves aging and dying and then being colonized by weakly pathogenic fungi such as *Alternaria*, *Bipolaris*, or maybe even *Ascochyta*. I'm sure tan spot and Septoria/Stagonospora are out there, but the field to look for these leaf spot diseases would be a no-till field with abundant wheat straw from the previous year.

So, in summary, it appears that foliar diseases including powdery mildew, leaf spot diseases (especially in no-till fields with wheat residue), and stripe rust are present in Oklahoma. Their increase during the coming weeks will depend on a favorable environment with mild temperature and moisture. Leaf rust has not yet been reported, but likely will make an appearance in the not-to-distant future as it is now beginning to be observed in south Texas.

Disease and Insect Diagnostic Laboratory

The pesticide information presented in this publication was current with federal and state regulations at the time of printing. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow label directions. The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, and Title IX of the Education Amendments of 1972 (Higher Education Act), the Americans with Disabilities Act of 1990, and other federal and state laws and regulations, does not discriminate on the basis of race, color, national origin, genetic information, sex, age, sexual orientation, gender identity, religion, disability, or status as a veteran, in any of its policies, practices or procedures. This provision includes, but is not limited to admissions, employment, financial aid, and educational services. The Director of Equal Opportunity, 408 Whitehurst, OSU, Stillwater, OK 74078-1035; Phone 405-744-5371; email: eeo@okstate.edu has been designated to handle inquiries regarding non-discrimination policies: Director of Equal Opportunity. Any person (student, faculty, or staff) who believes that discriminatory practices have been engaged in based on gender may discuss his or her concerns and file informal or formal complaints of possible violations of Title IX with OSU's Title IX Coordinator 405-744- 9154.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources.