



Pest e-alerts



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Wheat Disease Update

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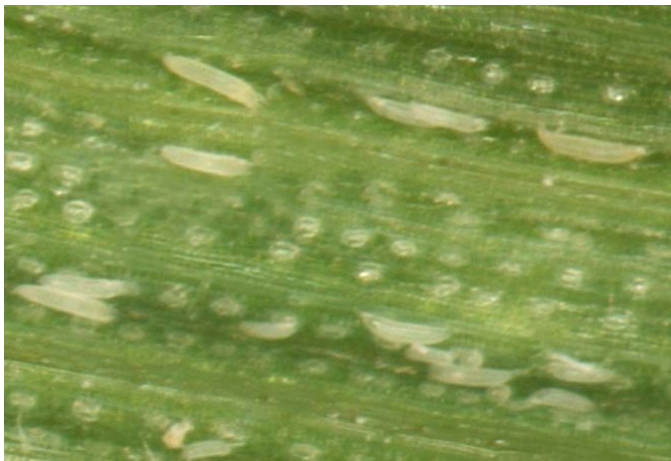


In addition to looking at wheat around Stillwater, field days over this past week took me to south-central OK (near Walters, OK in Cotton Co.), southwestern OK (near Altus in Jackson Co.), and through central OK (near Apache in Caddo Co. and near Kingfisher in Kingfisher Co.). For the most part, wheat ranged from full kernel watery to full kernel milky. In the variety trials I visited, the effects of stripe rust were evident.

Across southern OK, stripe rust was mostly not active (black resting spores present) or only small amounts of yellowish-orange sporulation was present. In central OK and around Stillwater, more active sporulation could be found. However, in all areas the foliage of susceptible varieties (including flag leaves) was mostly yellow/dead unless a fungicide had been applied. Where a fungicide had been applied, the foliage had been protected and was mostly green. In one case (Apache), the fungicide had been applied 1 month ago and a small amount of sporulation was just starting to appear again on the upper leaves. However, the fungicide provided a month of protection and will go a long way toward protecting the yield and test weight even if stripe rust does come in again. Plus, the later incidence of stripe (or leaf) rust once the wheat reaches milk or soft dough is much less damaging than if infection is severe at heading. For more explanation, see Current Report CR-7668 *Foliar Fungicides and Wheat Production in Oklahoma – March 2016* at:

<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-4987/CR-7668web2016.pdf>





Another disease that is making an appearance again in Oklahoma this year is wheat streak mosaic (WSM). This disease, which is caused by the mite-transmitted Wheat streak mosaic virus (WSMV), infects wheat in the fall or spring with symptoms occurring in the spring and becoming more severe as temperature rises. The earlier the infection, the more severe the damage to the wheat. To date, we have had samples test positive for WSMV from across northern OK out towards the panhandle. Many of these samples also test positive for High plains virus and/or Triticum mosaic virus. A couple of the fields I have seen this year have affected the entire field and likely will not be harvested. Often WSM occurs because of the lack of control of volunteer wheat either in the field of production or in an adjacent field. It is critical to control volunteer wheat and other grassy weeds that serve as alternative hosts for both the mite (wheat curl mite) and the virus. Also please note as pointed out by Dr. Mary Burrows in the report below from Montana, that WSM often is more severe in fields that were hailed on during the previous season. Typically, this is related to a flush of volunteer wheat. For more information, see Fact Sheet EPP-7328 *Wheat Streak Mosaic, High Plains Disease, and Triticum Mosaic: Three Virus Diseases of Wheat in Oklahoma* at <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-8987/EPP-7328.pdf>

Wheat foliage showing symptoms of wheat streak mosaic (top), and the wheat curl mites (WCM) that transmit the virus (bottom).



Wheat streak mosaic in wheat growing next to a field in which volunteer wheat had not been controlled in the fall or through the winter.



Wheat infected with both WSMV and HPV. Photo credit to Dr. C. Rush, Texas A&M University.

Finally, I would call attention again to be on the watch for Fusarium head blight (head scab). Wheat in Oklahoma is either close to flowering or has flowered, and the cool/moist weather we have had certainly facilitates infection of heads by Fusarium. For more information on head scab, see PSS-2145 *Fusarium Head Blight (Head Scab) of Wheat: Questions & Answers* and PSS-2136 *Considerations when Rotating Wheat Behind Corn* that can be found at: <http://pods.dasnr.okstate.edu>. Once at that page, type the identifiers (PSS-2145/PSS-2136) into the “search box” located in the upper right area of the screen. An additional resource is the Fusarium Head Blight Prediction Center at <http://www.wheatscab.psu.edu/>. At this site you can read commentaries submitted by specialists from each state but more importantly see if weather conditions in your area have been conducive to development of FHB. The site is easy to use, but is best used with a browser other than Windows Explorer such as Firefox, Chrome, or Safari.



Nebraska: Dr. Stephen Wegulo (Professor/Extension Plant Pathologist, University of Nebraska); April 29, 2016:

“On April 27-28 I looked at wheat fields in eight counties in southeast and south central Nebraska. I found very little disease in growers’ fields. The wheat crop looked healthy and luxuriant due to recent rains that alleviated earlier drought stress. Research plots at Havelock

Farm in Lincoln (Lancaster County), the Agricultural Research and Development Center (ARDC) near Mead (Saunders County), and the South Central Ag Lab (SCAL) near Clay Center (Clay County) had significant levels of fungal leaf spot diseases, powdery mildew, and stripe rust. Stripe rust was at low levels and the ARDC and at higher levels at SCAL with hot spots scattered throughout the research field and as much as 50% severity on some leaves. Wheat growth stage ranged from Feekes 7 to Feekes 10 in the majority of fields. Heads had emerged or were emerging in a few research plots at Havelock Farm.”

Montana: Dr. Mary Burrows (Professor & Extension Plant Pathology Specialist, Montana State University); April 29, 2016:

“Our wheat is enjoying a recent bath and 5” or more of snow in some areas of the state. Frost and nutrient stress are commonplace, but overall the crop looks excellent. Powdery mildew is prominent due to our long fall and early planting of winter wheat, and our varieties are mostly susceptible or ‘highly susceptible.’ It is generally restricted to the overwintering leaves, but has been moving up the crop in some locations before recent rain events. There is a severe outbreak of WSMV where hail swaths decimated the crop July1-4 last year: Hill, Liberty, Chouteau, and Blaine Counties along the HiLine in northcentral Montana. In some areas of Chouteau county, this was the third year of hail. Disease was also favored by two warm falls in a row and an open, warm winter. We also have pockets of WSMV associated with hail and cowboys grazing hailed wheat in Custer and Rosebud counties.”





Kansas: Drs. Erick DeWolf/Romulo Lollato (Extension Wheat Pathologist/Wheat & Forage Specialist, Kansas State University); Apr 25, 2016:

“The wheat crop in central KS is at the heading and flowering stages of growth this week. In the west, the crop is heading in the southwest and approaching flag leaf emergence in the northwest.

Stripe rust continues to be the primary disease of interest for many producers. The disease has been a low levels and restricted to the lower canopy for weeks. However, now that the flag leaves have been out for a while and with some recent rains the situation is changing rapidly. Stripe rust is now moving to the upper leaves in part of central Kansas. This is important because these upper leaves contribute the energy that will be used to fill the grain. The other key development this past week as reports of stripe rust in northwest Kansas. The disease is still at low levels but this represents a significant expansion in acres at risk for moderate to severe yield loss to rust. I am also receiving reports of low levels of leaf rust in central KS. This may multiple the risk of disease loss in some varieties.”

Dr. Richard Grantham - Director, Plant Disease and Insect Diagnostic Laboratory

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