



Pest e-alerts



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Wheat Disease Update – 21 February 2017

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I indicated last November that **leaf rust** was severe in many wheat varieties that had been planted early (mid-September) in Dr. David Marburger's variety demonstration strips here at Stillwater. As we moved into December and January, there were two severe cold spells along with drought that caused significant death of the rank foliage. Many of the burned/dead leaves were infected with leaf rust, and killing of these infected leaves stopped the spread of leaf rust to new/young foliage. The burning of the foliage in these plots was quite noticeable in mid-January (Figure 1A). Last week I examined these plots to see if leaf rust had overwintered, and sure enough, viable leaf rust pustules were present on some of the newer/younger leaves (Figure 1B).

1A



Figure 1. (A) Severe leaf burn of wheat in mid-January, 2017

1B



(B) Leaf rust pustules as observed on leaves in mid-February in the same plots in (A).

Hence, leaf rust has overwintered in much of Oklahoma and inoculum to start this disease in the spring will come not only from within the state, but also from Texas where widespread, moderate levels of leaf rust have been reported (see report below from Texas). The two recent widespread rain events also will support the further infection and spread of leaf rust in Oklahoma, but weather through March and April still will be the ultimate determiner as to how severe leaf rust becomes in Oklahoma in 2017. However, be sure to start checking your wheat over the coming weeks for the presence of leaf rust (especially if you have a moderately susceptible to susceptible variety). I can't imagine any spraying is needed at this time for leaf rust, but you should stay alert for the presence of this disease as we proceed into March and April when conditions for leaf rust infection and spread typically become more favorable.

The other rust that can greatly impact yield in Oklahoma is **stripe rust** (Figure 2). Typically if stripe rust is going to be a problem in Oklahoma we start to see "hot spots" in fields from late February into early March. Note that often early season stripe rust infections do not typically show the striping pattern associated with stripe rust but rather pustules tend to occur more in clusters as depicted in Figure 3. Reports of moderate to severe stripe rust also typically are coming in from Texas by this time in years when stripe rust is severe in Oklahoma. However, no stripe rust has yet been reported in Oklahoma this year, and reports indicate stripe rust is sparse in Texas (see below). This is good news in terms of the likelihood of stripe rust in Oklahoma, but continue to watch for stripe rust when looking for leaf rust.



Figure 2. Early season infection of stripe rust. Note that in contrast to later season stripe rust infection, early season infections do not show the "striping" typically associated with stripe rust.

Other foliar disease to watch for include tan spot, septoria leaf blotch, and powdery mildew (Figure 3A-C). These diseases (especially tan spot and septoria leaf blotch) are more likely to occur in no-till, continuous wheat fields. If sufficiently severe in a no-till field, spraying for these in March may be beneficial but only if young wheat plants are severely spotted with one of these diseases. For additional information regarding early season foliar wheat diseases and possible control with an early fungicide application please see our fact sheet (PSS-2138) that discusses split application of fungicides at www.wheat.okstate.edu



Figure 3. Wheat diseases typically observed in no-till, continuous wheat fields include (A) Tan spot; (B) Septoria leaf blotch; (C) Early season powdery mildew.



Reports/excerpts of reports from other states:

Texas: Dr. Clark Neely; Assistant Professor & Extension Small Grains and Oilseed Specialist; Texas A&M University; Feb 14, 2017: Weather conditions have been drier this

fall and winter than the previous two years, which is having a positive impact on wheat rust presence across the state. This time last year, producers were dealing with widespread reports of stripe rust in their wheat fields due to wet conditions. This year, stripe rust has been reported in a few locations throughout Central and South Texas, however, pressure appears lighter overall and observed mainly in highly susceptible border plots ('TAM 111') in research trials. A few reports of very light stripe rust in producer fields in the central Blacklands was reported also. Light pressure was reported in an Ellis County trial and trace amounts were found in trials near Thrall and College Station. No stripe rust has yet been found in South Texas (Uvalde, Castroville, Corpus Christi), Northeast Texas (Greenville), or the Rolling Plains. Though inoculum is currently low, forecasted weather conditions appear to be favorable for further development beginning this weekend through mid-week as a large percentage of the state is expected to receive an inch or more of precipitation and coincide with cooler temperatures. Therefore, producers in the Blacklands should keep an eye on wheat fields over the next couple of weeks to watch for further stripe rust development.

Meanwhile, leaf rust is present in much of Southeast Texas. Research plots in Thrall, College Station and Wharton all show moderate leaf rust pressure so far. Light levels of leaf rust are also reported in producer fields in Hill and McLennan Counties with a single severe case reported in 'TAM 304' that was sprayed with a fungicide. With plenty of inoculum present, this disease is likely to spread once temperatures increase in the coming weeks, though moisture conditions throughout the spring will influence the degree and speed to which it will increase. As of two weeks ago, leaf rust was not observed at Uvalde or the Castroville nursery and recent reports indicate little to no leaf rust further north in Northeast Texas and the Rolling Plains.

Plant Disease and Insect Diagnostic Laboratory

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