



Pest e-alerts



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Vol. 15, No. 37

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

11/30/16

Wheat Disease Update – 30-November-2016

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During the first week of November 2016, I reported observing fairly severe leaf rust in rows of Jagalene wheat in Dr. Brett Carver's breeder nurseries here at Stillwater. About that time, leaf rust also was observed in the early planted variety-demonstration nursery planted in Stillwater by Dr. David Marburger. The early planted plots were planted 13-Sep-2016. For this variety-demonstration, Dr. Marburger plants a duplicate, later planted (26-Oct-2016) plot of each variety immediately in front of the early-planted plot. This variety-demonstration nursery has provided an interesting observation of the effect of planting date on leaf rust as can be seen in Figure 1.

With cooler temperatures and light frosts we finally have received over the last 7-10 days, the older leaves infected with leaf rust in the early planted plots have mostly turned yellow. Rust pustules are evident, but chlorosis (yellowing) is the predominate symptom. Across all the varieties (>60), there is a range from nearly all yellow except the youngest leaves, to nearly all green (there is some tip yellowing/burning from the frosts).



Figure 1. Wheat plots in variety-demonstration nursery at Stillwater, OK on 28-Nov-2016 (planted 13-Sep-2016). Note the range of yellowing due to leaf rust in combination with cold temperature. Some yellowing is due to tip-burn from recent frosts/freezes. Yellow leaves are leaf rust-infected. Green leaves are younger leaves and are not leaf rust infected

By comparison, look at the photo below (Figure 2) showing early planted plots (background) and late planted plots in the foreground. Leaf rust is not found in the late planted plots (foreground). If early planted wheat had been grazed, which would be more typical with a mid-September planting date, much of the rank foliage would have been removed and rust would not be nearly as severe as in this variety-demonstration. This is a good example of how planting date can effect disease incidence and severity given an environment favorable for disease such as we have had this fall with mild temperature and occasional rain and dews.



Figure 2. Early planted (13-Sep) wheat plots (background) compared to late planted (26-Oct) wheat plots (foreground). Each pair of plots is the same variety. Note the difference in growth and yellowing due to leaf rust infection. Severely infected varieties have the majority of their leaves turning yellow due to a combination of rust infection and cold (freezing) temperature.

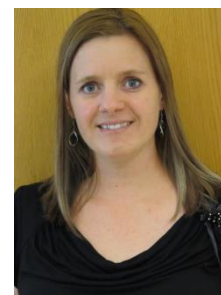
There are a couple of additional points I should make with the photos above. First, not many would plant wheat in early to mid-September for the purpose of grain only. Hence, wheat in the early planted plots would most likely be grazed, which would remove much of the rank foliage and also the rust, and thereby the rust incidence would not be nearly as severe. Wheat in a grain-only mode would look more like the wheat in the late planted plots (foreground plots in Figure 2). Second, we normally would have colder weather earlier than we had this year that would have arrested rust development. Then, newly emerging leaves would be healthy and green. As I have said previously, I am not a proponent of spraying in the fall to control fall foliar diseases such as leaf rust because leaf rust development typically slows and stops once we get to colder temperatures in November-January (basically <60 F with frosts at night). And remember, the primary concern with fall leaf rust is that with a mild winter and sufficient moisture, the rust will survive through the winter and inoculum will be present in fields to start the disease early in the spring. Hence, monitoring of fields through the late winter and early next spring is recommended to see if application of a fungicide to control rust is indicated in the early spring. For all the foliar wheat diseases (leaf rust, stripe rust, powdery mildew, tan spot, and septoria leaf blotch), control in the spring is more critical than control in the fall. I have heard of fungicide being added in with a fall herbicide application to limit disease, but such an application would have needed to have been applied 3-4 weeks ago to prevent the situation as depicted in the photos above. However, I can see where in a year such as this one with a fully susceptible variety that was planted early and not grazed there may be value to an early fungicide application.

BUT ESPECIALLY, watch these fields starting in late February to see if an application is merited because control of foliar diseases in the spring is much more critical than control in the fall.

Greetings from Jana Slaughter

Hello everyone,

It is exciting to be the Senior Laboratory Technician at the Oklahoma Plant Disease and Insect Diagnostic Laboratory (PDIDL). I am married to Greg Slaughter and we are raising two boys Gavin who is five and three year old Jubal. I grew up on a small farm in Southern Colorado near Alamosa where we grew alfalfa and raised sheep. As a teenager, I worked in potato fields identifying and removing plants with viruses. My agriculture education was greatly increased at Oklahoma State University where I earned a Bachelor's of science in Horticulture followed by a Master's degree in Plant and Soil Sciences in 2008. Upon graduation, I moved back to Southern Colorado to work as a crop consultant with Agro Engineering Inc. At Agro, I advised farmers in potato, barley, wheat, canola, and alfalfa production. In December 2012, my husband Greg began working for Charles Machine Works and we moved to Perry, Oklahoma. After living in Oklahoma for a few months, I began working part-time as a lab technician at PDIDL and have been there since that time. In the spring of 2015, I started The Land Steward and serve as crop advisor for producers in the Noble County area. As an advisor, I have assisted with insect and disease management of wheat, canola, soybeans, corn, and grain sorghum. My responsibilities as the Senior Lab Technologist are identifying arthropods and assisting with the diagnosis of plant disease samples sent into the lab. For insect identification we accept images sent to gotbugs@okstate.edu or physical samples sent to NRC 127.



Some tips on sending digital and physical insect samples

- Take a picture next to a size reference such as a pencil, paper clip, or ruler
- Include information about the location where the sample or image was taken
 - Please write your City or County
 - Kitchen sink, bathroom, bedroom, backyard, doghouse, type of plant, etc.
- Put samples in a plastic bag and if they are alive, please double bag the sample
- Include your address and other contact information
- Do not tape the insect down if possible, it squishes and distorts the specimen
- Do not send in an envelope without padding because the specimen will get squished in the mail.

Plant Disease and Insect Diagnostic Laboratory

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