

PLANT DISEASE AND INSECT ADVISORY

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Wheat Disease Update Bob Hunger, Extension Wheat Pathologist

Fall infections of wheat leaf rust: Over the last two days I have received phone calls related to fall infection of winter wheat. These reports have been severe leaf rust on Jagger in fields located in Comanche County and around the Custer-Caddo County line. As in the past, the question of the need to try to control these fall infections with leaf rust have been asked.

When looking at a field severely infected with leaf rust, discoloration is evident (Figure 1). Closer examination reveals infected plants with the lower/older leaves yellow and covered with rust pustules, but the youngest 2 or 3 leaves green and healthy (Figure 2). As temperatures drop in late October and November, the older rust-infected leaves will die and new infections are greatly slowed and inhibited because of the lower temperatures. As a result, there should be a break in the infection cycle and a significant lowering of the rust incidence as new, healthy leaves continue to be produced. Perhaps a more major concern with fall infection 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 in the spring. Hence, monitoring of these fields next spring is recommended to see if application of a fungicide to control the rust is indicated.

To summarize, controlling leaf rust on wheat in Oklahoma in the fall is of questionable economic return and is not recommended. This is not only my conclusion, but also the consensus of colleagues from Arkansas and Kansas. Grazing can help reduce the level of rust spores (inoculum) in the field, and as colder temperatures set-in, spread of rust from infected to healthy (new) leaves should be greatly slowed.

Other disease reports: The only other wheat disease found so far is common root rot (caused by *Bipolaris sorokiniana*) on wheat seedlings from Grant County in north-central OK. This was indicated by stunted, yellowing seedlings that exhibited discoloration of the sub-crown internode (Figure 3.). Isolation from these sub-crown internodes on media in the lab revealed the spores indicative of the fungus (Figure 4) that caused this disease. Common root rot will kill seedlings resulting in uneven stands, but usually this occurs in localized areas of the field and not over the entire field. Often, the surviving plants will be able to compensate for the loss of some seedlings, but if the stand is extremely reduced, I have known of instances where replanting was done. Quite often another fungus, *Fusarium*, also is associated with these early season/seedling root rots, but I say no indication of *Fusarium* in this sample.

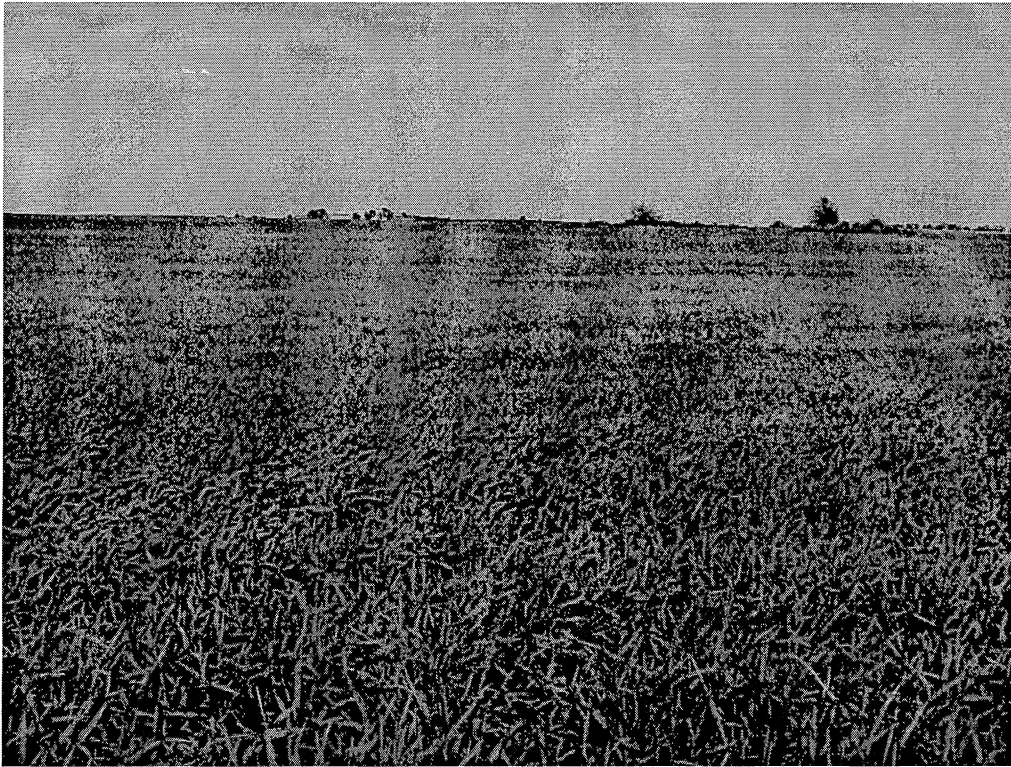


Figure 1. Wheat field in November showing discoloration due to leaf rust.



Figure 2. Leaves of leaf rust-infected plants showing rust pustules (note the presence of healthy younger leaves).



Figure 3. Discoloration of the sub-crown internodes (SCIs) of wheat plants due to common root rot. Note creamy-white color of the SCI of the seedling on the left.



Figure 4. Spores (conidia) of the fungus that causes common root rot.

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