South Dakota
Cooperative Extension Service

Blights & Insights

Vol. 2, Issue 2: May 5, 2010

A Regular Update from our Plant Diagnostic Laboratory, SDSU Plant Pathologists & CES Educators in the field.

A summary of observations & disease management info for the field & garden.

Early Wheat Diseases Developing in Central South Dakota

by Larry Osborne, SDSU Extension Plant Pathologist
Marie Langham, SDSU Wheat Virologist
Michael Moechnig, SDSU Extension Weed Specialist
and Bob Fanning, SD Cooperative Extension Agronomy Educator

partial programming support provided by:

SOUTH DAKOTA WHEAT COMMISSION
P.O. BOX 549 • PIERRE, SD 57501 • (605) 773-4645

Reports of some early season wheat diseases have been cropping up in Central and South Central South Dakota. The winter wheat there is well on its way toward jointing stage and many producers are out scouting to see if an early season fungicide is going to be warranted. While we can't say that there is an epidemic, it's likely that anyone with small grain residues under their wheat this spring might have a fair bit of tan spot (Figs. 1 & 2) to deal with – especially on susceptible varieties like 'Arapahoe' and 'Alice'.

Figure 1. Tan spot lesions on spring wheat lower leaves. Photo © SDSU Extension Plant Pathology

Figure 2. Tan spot lesions on winter wheat seedlings. Photo © Bob Fanning.

Even 'Wesley' seems to be experiencing more tan spot than expected, however that could be some misidentification of wheat streak symptoms by some of our contacts in the field. On a highly susceptible variety, WSMV can produce some striking yellow symptoms on the leaves. Figure 3 below shows a good mosaic pattern indicating that there is likely some virus at work. We'll be testing it to see if it is indeed wheat streak, or perhaps one of the newer strains such as *high plains virus* or perhaps *triticum mosaic virus*. I did find what appears to be a wheat curl mite (fig. 4) tucked into the leaves of the wheat sample (fig. 5).

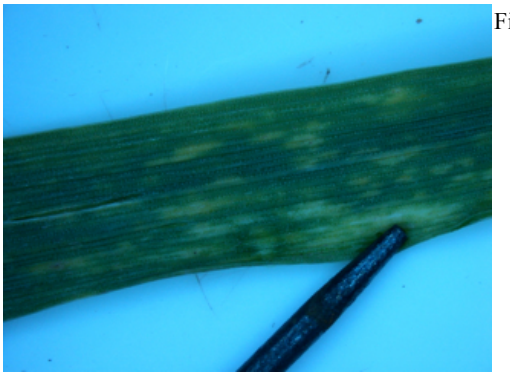

Figure 3. Mosaic symptoms, likely caused by the wheat streak mosaic virus. Photo © SDSU Extension Plant Pathology

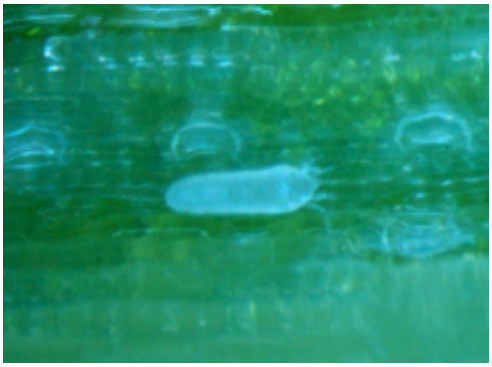

Figure 4. Wheat curl mite, vector of wheat streak mosaic and other viruses. Photo © SDSU Extension Plant Pathology

There's not much that can be done for the virus at this point but to keep in mind that the infected fields will be a good source for inoculum for weeds, corn, and subsequent wheat crops. Growers will have to work hard to keep the green-bridge from harboring mites after harvest this summer.

As for the tan spot, consider a couple of things before applying an early season fungicide. First, consider that the crop needs to be at some risk for the fungicide to pay for itself. Second or third year wheat with residues on the ground are at higher risk, especially if there is some rainfall occurring. Also, there is some increased risk of crop injury from herbicide-fungicide tank mixes so take care when you treat. The bromoxynil-containing products (e.g. Wolfpack, Huskie, Bronate) tend to produce some yellowing in cold weather, and we think this can be worse when certain fungicides are in the tank-mix.

Figure 5. Winter wheat sample submitted to the SDSU Plant Diagnostic Clinic for virus testing and disease ID. The sample was infested with wheat curl mites, tan spot, and wheat virus(es), likely wheat streak mosaic virus. Photo © SDSU Extension Plant Pathology

Some agronomists are also suggesting reduced rates of insecticides along with all these other products – be cautious! Tank-mixing can produce some unintended results sometimes and young wheat is tender – it needs all of the energy it can muster to put down strong roots! Tan spot or insect feeding can reduce that energy but so can crop injury! In fact, by stunting or burning the wheat, the root system will often be set back, leaving the crop open to drought and nutrient stress later on in the season. If you have a so-called 'defensive' variety in the field (resistant to various pests), then these inputs are often best used only when risk is high for a problem to occur. Keep scouting and use those products wisely to bolster your bottom line!

Last thing – leaf & stripe rusts are brewing in the southern U.S. If these south winds keep blowing, we might be in for some higher-than-normal incidence of those diseases this year. There are reports of early, though very low levels in KS and NE. We'll keep you posted through news releases and various websites. There are estimates of varietal disease resistance listed on the SDSU 2010 Small Grains Variety Recommendations (EC-774) which can be found at your local county extension office or on-line at: http://agbiopubs.sdstate.edu/articles/EC774-10.pdf . The varieties 'Art' and 'Overland' have been reported to be affected by the stripe rust in Nebraska but it's too early to say how they might perform overall.

Some Selected Resources:

SDSU Extension Plant Pathology Small Grains Page:
http://plantsci.sdstate.edu/planthealth/sm_grain/index.cfm

SDSU Extension Publication FS952: SD Wheat Fungicide Recommendations, L. Osborne and J. Stein.
http://agbiopubs.sdstate.edu/articles/FS952.pdf