Understanding Stripe Rust in Wheat

- Stripe rust appears as long yellow stripes on leaves, and can cause significant yield and quality loss in wheat.
- Mild winters and cool, wet spring conditions favor the development of stripe rust.
- Planting tolerant wheat products is an economical control method of stripe rust, fungicides may also be used for disease management.

Symptoms
Stripe rust, also known as yellow rust, is a foliar disease of wheat, caused by the fungus Puccinia striiformis f. sp. tritici, and can cause significant yield and quality loss.

Initial symptoms of stripe rust appear as small, yellow spots or flecks around infection sites, and occur within 7 to 10 days of infection. These spots form chlorotic streaks that will eventually develop into long stripes of yellow-colored spore-bearing pustules (urediniospores) (Figure 1). As the plant matures, the infected tissues may become brown and dry. Under severe conditions, symptoms can appear on wheat spikes and stems; which may lead to significant yield loss. Yield reductions of 40 percent or more can occur if the pathogen becomes established before heading.

Diagnosis and Management
Wheat fields should be monitored when favorable conditions are present. A hand lens is useful, but not necessary, to observe the small yellow uredinia and yellow rust spores. Yellow powder from spores can easily be wiped off onto hands and clothing.

Planting tolerant wheat products is an economical and effective control method. Because predominant rust strains change regularly, tolerant products should be closely monitored. Foliar fungicides can be used to control stripe rust in susceptible wheat products, and should be applied at boot stage. Fungicide products containing a strobilurin can be used before infection. If the disease is already present at the time of application, a fungicide belonging to the triazole class is recommended. Under extreme disease pressure, a combination of tolerant wheat products coupled with fungicides is the best management option. Remember, fungicide products should always be used according to label directions.

Sources:

For additional agronomic information, please contact your local seed representative. Developed in partnership with Technology, Development & Agronomy by Monsanto. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. ©2017 Monsanto Company.

Figure 1. Stripe rust symptoms. Photo courtesy of Alfredo Martinez, University of Georgia

Figure 2. Severely infected susceptible wheat (left), non-infected resistant wheat (right). Photo courtesy of Alfredo Martinez, University of Georgia

Figure 3. Severe stripe rust infection on wheat leaves. Photo courtesy of Alfredo Martinez, University of Georgia