**Managing Stripe Rust in Winter Wheat**

Martin Chilvers, Dept. of Plant, Soil and Microbial Sciences, MSU

Close-up of a green plant

Description automatically generated***Stripe rust*** can develop quickly and lead to a significant reduction in wheat yields. The fungus that causes stripe rust (*Puccinia striiformis* f.sp. *tritici*)requires green living tissue to infect and reproduce, and generally blows in from the south each year.

***How much yield will I loose?*** This will depend on when the disease took hold and how severe the infection was. In extreme cases it is possible to lose up to 70% of yield. Greater yield loss will occur when disease sets in early and is severe.

Classic stripe rust symptoms as seen on these plants don’t present on young plants

***Variety resistance*** is key to managing any disease, particularly an aggressive and damaging diseases such as stripe rust. If you had stripe rust issues be sure to speak to your seed dealer about variety resistance. And if you do change varieties, be sure to know of any weaknesses those new varieties may have.

***Scout, scout, scout!*** You can’t manage what you don’t know. In the spring and throughout the season be sure to scout your fields and be aware of disease pressure in your area. Stripe rust can move quickly so being on top of your scouting game can help mitigate yield loss. The goal is to keep the flag leaf as free of disease as possible through flowering and grain-fill periods.

***Disease identification.*** Stripe rust can be identified by the pustules of yellow to orange spores that erupt from the leaf tissue in linear stripes on infected leaves. However, on young plants the pustules are randomly clustered and not in stripes. Stripe rust can produce yellow stripes on leaves without sporulation, this can occur when a fungicide has been applied or if the wheat variety has adult plant resistance. If you are unsure, submit a sample to the MSU Plant and Pest Diagnostics clinic for confirmation: <https://www.canr.msu.edu/pestid/> . If you observe stripe rust in a county that has not yet been confirmed for the season, please send a photo of disease to chilvers@msu.edu. This data helps us in the development of risk prediction models.

***Fungicide timing.*** A fungicide applied at the start of the season (i.e. Fks 5-6 with herbicide) might not be sufficient protection to carry through to a fungicide timing for head scab. If stripe rust is found mid-season a fungicide may be warranted at or around the flag leaf stage. If the crop makes it through to flowering growth stages and stripe rust has only just been found the standard head scab fungicide products will do a great job at providing protection of the flag leaf. When disease is severe a late “rescue” fungicide application will have poor performance.

***Fungicide selection.*** There are plenty of fungicide products that do an excellent job of managing stripe rust that can be applied prior to heading. Once at the heading growth stage the number of fungicide products becomes restricted to those for head scab management. For the complete list, see our Crop Protection Network multi-state fungicide efficacy guide: <https://cropprotectionnetwork.org/publications/fungicide-efficacy-for-control-of-wheat-diseases>

For more information on stripe rust see the following Crop Protection Network article: <https://cropprotectionnetwork.org/publications/an-overview-of-stripe-rust-of-wheat>

A map of the united states

Description automatically generated

Stripe rust confirmations across the U.S. and Canada as of May 22, 2024. The live map can be found here: <https://wheat.agpestmonitor.org/stripe-rust/>