

Stripe Rust Forecast and Update, March 8, 2018

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Stripe rust will be likely to reach a normal epidemic level in the eastern Pacific Northwest

Based on the forecast models using the weather data from November 2017 to February 2018, stripe rust will potentially cause yield loss of **17.9%** on highly susceptible varieties. This number is much higher than the 6% forecasted in January based only on the November-December weather conditions. The number is an average of the prediction range from **13.8%** to **23.4%** using six models. Based on these prediction values, our current prediction of stripe rust is in the upper range of a low epidemic (0-20% yield loss) to the low range of a normal epidemic (20 – 40% yield loss). According to this prediction, the most “susceptible” commercially grown varieties, such as Xerpha, ORCL 102, and Eltan, will likely to have 8-12% yield losses, which still warrant fungicide application.

Stripe rust was observed in the experiment field at Walla Walla

Yesterday, I was checking wheat fields in Whitman, Lincoln, Adams, Franklin, Walla Walla, and Columbia counties. Fields in Whitman and the northern part of Lincoln were partially or entirely under snow. Wheat plants were mostly in dormancy in Whitman, Adams and the northern part of Franklin, but started growing in Walla Walla, Columbia, and the southern part of Franklin. Spotted winter injuries were observed in few fields in Whitman and Lincoln. No stripe rust was observed in any commercial fields. This was different from our survey on March 8 of the last year. However, active stripe rust (**Figure 1**) was observed on the susceptible check variety in our experimental field at Walla Walla, similar to the last year and normal in this location.



Figure 1. Stripe rust pustules found in a disease monitoring nursery near Walla Walla, WA on March 7, 2018.

Recommendations for the Pacific Northwest

As stripe rust has been found in the Walla Walla area and is predicted to be close to a normal epidemic level, control of stripe rust is necessary. Some general recommendations for the eastern Pacific Northwest are the following:

- 1) For winter wheat, if a susceptible or moderately susceptible variety (ratings 5 to 9 on the Buyers' Guide) is planted, or you can find stripe rust in the field, consider using fungicide at the time of herbicide application. These varieties include ORCF-103 (rating 8), Xerpha (rating 7), ORCF 102 (rating 6), AP503 CL2 (rating 5), ARS-Crescent (rating 5), Eltan (rating 5), KWS 145 (rating 5), Mary (rating 5), and SY 107 (rating 5) based on the tests in the last year. Different from the last year, one time application may be adequate for fields grown with such "susceptible" varieties depending upon the area. The key is to check fields and only apply fungicide when rust can be found. For varieties with stripe rust rating 4, check the field and apply fungicide only when rust can be found. For varieties rated 1 to 3, fungicide application is not recommended.
- 2) For spring wheat, always consider planting resistant varieties. Use the Seed Buyers Guide to choose varieties rated 1 to 4 for stripe rust and avoid those rated 5-9 if possible.

We will keep you informed of any significant changes of stripe rust during the crop season.

In the western Pacific Northwest, the weather conditions and diseases including stripe rust are very different from the eastern part. For northwestern Washington, stripe rust causes severe epidemic every year, growing highly resistant varieties (ratings 1-3) or using two-to-three on-time fungicide applications is always recommended for managing stripe rust. As other diseases such as powdery mildew and leaf rust often occur, multiple foliar fungicide applications are needed for almost any variety. For western Oregon, where severe stripe rust does not occur every year, but if occurs, it starts almost always early in the spring. On February 21, Chris Mundt's group found stripe rust in their experimental field in Corvallis, Oregon. Fungicide application mostly depends on whether the variety is resistant or susceptible to stripe rust and to other diseases such as Septoria also.

Stripe rust in the country

In this crop season, stripe rust has been reported so far in east-central Arkansas, southern Texas, western Oregon, and eastern Washington (western Washington always has stripe rust). Jason Kelley reported stripe rust near Marianna, Arkansas in early December, 2017. In this region, the rust fungus in infected leaves as mycelium should be easily over the winter. Several people observed stripe rust in experimental fields in Uvalde, Texas in the middle of February, 2018. Observations of stripe rust in Texas before March tend to indicate the late occurrence of severe stripe rust in the entire Great Plains and possible eastern states.

Follow the local recommendations for managing stripe rust in your region.