Stripe Rust Forecast and Update, March 1, 2024

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Stripe rust is forecasted in the range of severe epidemic for the eastern Pacific Northwest

Wheat stripe rust is forecasted to be in the range of severe epidemic (40-60% yield loss) in the 2024 growing season for the eastern Pacific Northwest, based on the predication models using the weather data from November 2023 to February 2024. The models predicted highly susceptible varieties to have **51%** yield loss with a standard deviation of 6%. This value is slightly higher than the **42%** forecasted in January based only on the November-December weather data. According to the current prediction, commercially grown varieties with moderate (5), moderately susceptible (6, 7) susceptible (8, 9) stripe rust ratings will likely have **9** to **33%** yield losses, or **8%** yield loss on average for all recently grown varieties without fungicide application.

Stripe rust has survived the winter well in central Washington

Stripe rust has been found in three fields in central Washington in the past two weeks. On February 23, I stopped at our stripe rust monitoring nursery field in Walla Walla and easily found stripe rust with up to six leaves having active rust pustules in some spots (**Figure 1**). On February 29, my colleague and I were checking wheat fields in Whitman, Adams, Lincoln, Grant, and Douglas counties and easily found rusted leaves in a commercial wheat field east of Almira along Highway 2 in Lincoln County, the same field where we found stripe rust on November 14, demonstrating that the stripe rust fungus has survived very well in the field (**Figure 2**). In another field further south in Adams County along Highway 21, we were able to find one leaf with active stripe rust. Such early appearance of stripe rust in multiple locations in the State of Washington east of Cascade Mountains were not seen from 2011 to 2023, but not as prevalent as in the February of 2011.

Figure 1. Stripe rust observed in a stripe rust monitoring nursery in Walla Walla on February 23, 2024.

Figure 2. Stripe rust observed in a commercial wheat field in Lincoln County on February 23, 2024, the same field where we found stripe rust on November 14, 2023.

Recommendations for the eastern Pacific Northwest

Both forecast and field observations of stripe rust indicate a severe epidemic in the 2024 wheat crop season for the eastern Pacific Northwest. Fungicide application is recommended for the fields planted with moderate to susceptible winter wheat varieties with stripe rust ratings 5 to 9 in the early growth season at the time of herbicide application, and a second application may be needed 20 to 30 days after the first application, which can be determined by whether active stripe rust appears in the field after the first application. For spring wheat, resistant or moderately resistant varieties (stripe rust ratings 1 – 4) should be selected for planting. If for any reason a susceptible (stripe rust rating 8 and 9) or moderately susceptible (stripe rust ratings 6 and 7) varieties are grown, fungicide application will be highly likely needed at the time of herbicide application.

Stripe rust in the country

So far, stripe rust has been reported in Louisiana, Texas, and Washington. In both Louisiana and Texas, stripe rust was observed in wheat fields as early as January 31. Such early appearance of stripe rust in these states indicates a potential severe epidemic in the southcentral states if the weather conditions continue to be favorable for the disease development and spore production, which may further spread to the central Great Plains and eastern states.