

Stripe Rust - It Could Be a Wild Ride!

-By Mary Corp and Chris Mundt

Stripe rust in wheat became active much earlier this year than last year in the Pacific Northwest and may not have slept at all. Don Wysocki, OSU, and Jim Towne, PGG, found sporulating rust pustules in a wheat field near Pendleton in northeastern Oregon during the 1st week of February this year. Mike Flowers, OSU, discovered stripe rust in the Willamette Valley in late January and, by mid-February, stripe rust was easily found there.

Given the high level of stripe rust last year, and early seeding last fall combined with fall rains, these sightings are not a big surprise. Now much depends on the wheat variety that you planted and how cool and wet our spring weather turns out to be. The Pendleton National Weather Service is forecasting below average temperatures over the next three months and seems to be undecided on what our rainfall amounts will be due to no strong indication one way or another by their models.

Resistance to stripe rust in our winter wheat varieties is dependent mainly on High Temperature Adult Plant Resistance (HTAP). HTAP turns on when temperatures warm up in the spring and also when plants go into the reproductive phase. More resistance genes equals higher levels of resistance and also allows the resistance to turn on earlier and at lower temperatures.

Most winter wheat varieties have at least some level of HTAP and efforts are underway to increase these levels in both winter and spring wheat varieties. Last year, we saw definite separations between varieties due the high

level of pressure over a long period of time. The following notes are provided by Chris Mundt, OSU pathologist:

- Tubbs 06 – low levels of HTAP
- Goetze
 - * major gene resistance broke in 2010
 - * fairly susceptible in early growth stages
 - * good level of HTAP
- Stephens – high level of HTAP
- Madsen, ORCF101, ORCF102
 - * So far – so good
 - * Major gene resistance is unknown



Photo Courtesy of Xianming Chen, USDA-ARS

Scouting fields for stripe rust will be beneficial as there is a high likelihood of significant rust problems this year. There will be differences based on varieties. Keep an eye on temperatures and our long-term forecasts. Scout fields as often as possible.

If fungicides are applied, **timing is critical**. Generally, a single application at flag leaf emergence will be highly effective. Make the decision to treat just prior to flag leaf emergence based on:

- Presence of rust in field or region
- Weather
- Variety

- Yield potential

In fields of higher yield potential, tank mixing a fungicide with a spring herbicide application (if not yet applied) is justified if rust is already present in that field. Rust is relatively easy to control early in the season, and the least expensive, registered fungicide should be effective. Fields should still be scouted prior to flag leaf emergence, and sprayed again if necessary.

Common Timing Errors

Some common timing errors should be avoided when applying fungicides. Last year, we all tended to think that HTAP resistance was going to save us, and so we waited, and waited... and then finally decided to spray, but then the application possibly had limited effectiveness because it was too late.

Applications need to be applied before rust is well established. When one visually sees 5% rust, one might already have 30% or more present that is not visible yet. Also it is hard to protect again a large number of spores in the crop. Applications during late growth stages (past flowering) usually do not increase yield regardless of rust levels.

There are numerous fungicide products available: triazoles (examples – Bumper, Caramba, Folicur, Proline, PropiMax, Prosaro, and Tilt), strobilurins (examples – Headline, and Quadris), combinations of triazoles and strobilurin (examples – Stratego, Quilt, Quilt Xcel, and Twinline). Be sure and follow the label for rates, timing and pre-harvest interval restrictions.