

Wheat Update



April 16 2010



Leaf Rust Update

We observed leaf rust (*Puccinia recondita*) for the first time this year on Tuesday, April 13th. Low infection levels of leaf rust were found infecting the lower leaves in several commercial fields of AgriPro Jackpot wheat near Greenville. We have also observed trace levels of leaf rust in some of the other varieties. Earlier stripe rust infections have subsided, and will not likely become active again unless cooler, wet conditions return to the region.

We have had some inquiries from industry on the latest edition of our e-newsletter. The question posed was “why did we only include Quilt, Tilt, and Folicur in our economic evaluation table for stripe rust?” The answer to that question is that those are the only 3 products that were evaluated in all three years listed (2005, 2007, and 2009). Other products (Stratego, Headline, Prosaro, Twinline, Quilt Xcel) were included in some but not all of those trials, so we were not able to conduct an economic analysis on them. All of these products will also effectively control rust.

More on Foliar Fungicides

When making a decision on using a foliar fungicide to control leaf rust, stripe rust (*Puccinia striiformis*), and glume blotch (*Stagonospora nodorum*), a number of factors should be considered. These include the following:

Disease infection – Foliar fungicides will not provide a yield increase unless an active infection is present. Fungicides can only protect a yield. We get our best results when the untreated plots have an infection level of 50% or more on the flag leaf at physiological maturity (this roughly corresponds to the first part of May in North Texas). Fungicides do not enhance a yield in the absence of disease. We have numerous research studies that show this.

Weather conditions - Cool, wet weather promotes foliar diseases. Hot, dry weather suppresses them. Fungicides are more likely to pay when weather conditions are cool

and/or wet. A heavy morning dew can provide enough leaf wetting to promote a disease infection cycle.

Yield potential – The higher the yield potential, the greater the chance of an economic return with a foliar fungicide. Based on over 25 years of local research, a fungicide provides protection from a yield decrease, allowing the plant to set more seeds, and produce larger, heavier seeds.

Timing – A foliar fungicide needs to be applied before the infection reaches the flag leaf and the leaf directly underneath it (F – 1). Once these leaves are infected, an economic response to a fungicide is less likely.

The following table shows the “breakeven” number of bushels required at various fungicide costs:

Table 1. Bushels Required to “Breakeven” at Various Fungicide Costs.¹

Fungicide cost/A	\$4.00	\$8.00	\$12.00	\$16.00	\$20.00
Breakeven Bu/A	2.1	3.1	4.0	5.0	6.0

¹ Numbers based on an application cost of \$5.00 per acre and a projected SRWW farm price of \$4.20 per acre

Last year, we expanded our fungicide research program to include an economic evaluation of the most common commercial soft red winter wheat varieties in the region. These varieties included AgriPro Magnolia, Pioneer 25R47, Pioneer 25R57, Coker 9553, and Terral LA 841. Last year was characterized by a light to moderate leaf rust infection, with only trace levels of stripe rust. Terral LA 841 and Pioneer 25R47 were infected with a moderate to heavy glume blotch in the Royse City location. There was very little disease present in the Leonard location. The following table summarizes these results:

Table 2: Yield Increases Obtained by Spraying a Foliar Fungicide (Tebuconazole) on Five Commercially Grown SRWW Varieties in the Northern Texas Blacklands

Variety	Bushel Increase		
	Royse City, TX	Leonard, TX	Two Location Average
AgriPro Magnolia	-1.4	0.8	-0.3
AgriPro Coker 9553	2.3	-4.5	-1.1
Pioneer 25R57	3.0	-4.5	1.9
Pioneer 25R47	11.0*	0.6	5.8
Terral LA 841	9.6*	2.9	6.3

* Significantly different than nontreated.

In summary, we did not see any significant yield response by spraying Magnolia and Coker 9553 at either location. We “broke even” by spraying the Pioneer 25R57. We made a little money by spraying Pioneer 25R47 and Terral LA841, which we probably obtained by controlling the glume blotch. When we average all varieties at both locations, we cleared around \$8.00 after expenses.

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