

Spring Wheat Response to Leaf Rust and Fungicides

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A field trial was conducted at Carrington in 2003-05 to examine the response to foliar fungicide by selected spring wheat varieties possessing different levels of leaf-rust tolerance. Varieties tested and their tolerance to leaf rust included 2375, susceptible; Reeder, moderately susceptible; Alsen, moderately resistant; and Briggs, resistant. Wheat was planted at 1.4 million pls/A on ground previously grown to soybean. Folicur at 4 fl oz/A + Induce (NIS) at 0.125% v/v were applied at boot or early-flower stages of wheat with 17 gpa of water at 35 psi using 80015 twinjet nozzles.

Averaged across years and varieties, leaf rust was reduced, and wheat yield and quality improved with either timing of fungicide application (Table 1).

Table 1. Influence of the timing of fungicide application (*Folicur* at 4 fl oz) on spring wheat performance, Carrington, 2003-05.

Wheat stage of fungicide application	Flag leaf rust - early	Flag leaf rust - late	Grain Yield	Test Weight	Grain Protein
	%		bu/A	lb/bu	%
Untreated check	30.0	54.3	52.8	59.5	14.9
Boot	1.2	11.0	59.7	60.2	15.2
Early flower	3.9	5.6	59.1	60.3	15.0

The leaf-rust susceptible varieties 2375 and Reeder had higher levels of rust without fungicide compared to the more tolerant varieties Alsen and Briggs (Table 2). Yield and test weight improvement with fungicide was greater with 2375 and Reeder compared to the other varieties. Fungicide application at boot stage would be recommended if leaf rust is present on the flag leaf, especially for susceptible or moderately susceptible varieties. Otherwise, fungicide application at the early-flowering stage will provide control of leaf spot disease and suppression of scab during the seed-fill period.

Table 2. Influence of variety and timing of fungicide application on spring wheat performance, Carrington, 2003-05.

Variety	Wheat stage of fungicide application	Flag leaf rust - early %	Flag leaf rust - late %	Grain Yield bu/A	Test Weight lb/bu
2375	Untreated check	40.2	71.9	51.5	60.0
	Boot	1.3	18.9	61.7	60.9
	Early flower	2.4	4.7	61.0	61.1
Reeder	Untreated check	55.4	74.6	45.1	57.5
	Boot	1.4	15.1	58.3	58.3
	Early flower	9.2	9.8	53.7	58.7
Alsen	Untreated check	20.3	47.1	51.5	59.8
	Boot	0.9	6.9	53.8	60.4
	Early flower	3.0	4.9	54.4	60.4
Briggs	Untreated check	4.1	23.8	63.8	60.8
	Boot	1.2	3.0	65.5	61.1
	Early flower	0.9	3.3	67.0	61.0