

Fungicide treatments and timing of application for control of stripe rust in spring wheat in 2007.

The trial was established in a field at the university research farm in Bingham County, ID. The field had been cropped to green manure oats in the preceding year. The soil type is a Declo loam of 0-2% slope and 1.8% organic matter. Experimental plots (5 x 13.3 ft planted, 5 x 9.3 ft harvested) of the stripe rust susceptible variety 'Whitebird' (infection type 9) were arranged in a randomized complete block design with 4 replicates. Plots of the susceptible spring wheat variety 'Jubilee,' also having an infection type 9, were planted as buffer and rust spreader rows between plots. Fungicide treatments were applied using an R&D CO₂ handheld boom sprayer at 30 psi emitting 20 gpa through three Teejet 8002VS nozzles spaced 19 inches apart. Fungicide applications at herbicide treatment were applied as a foliar treatment the same day that the herbicides were applied. Seed was planted at 1 million/A on 6 Apr. Row spacing was set at 7-in. with seven rows per plot, planted using a double disk opener with a Hege 500 series drill. Weeds were controlled by 2.0 pt/A Maestro MA applied 16 May. Natural inoculum appeared very late in the local area in the susceptible hard red winter wheat cultivar 'Moreland,' confirmed in the plots 29 Jun. Susceptible spreader rows were inoculated with stripe rust 21 June, and infected plants of the variety 'Moreland' were transplanted into spreader rows 25 Jun. Spread of the disease was minimal in this hot, dry year. The percent leaf area affected by stripe rust was rated on plots 5 Jul when plants were in Feekes growth stage 11, and 12 Jul when plants were in Feekes growth stage 12.1. Plots were harvested 14 Aug with a small plot combine. Yield and test weight were determined. Data were analyzed using general linear model (Proc GLM) in SAS. Fisher's protected LSD was used for mean comparisons.

There was significant stripe rust disease development on the untreated control treatment with 20% of the leaf area affected. Yields were not significantly different. There was a significant difference in test weight means, with the untreated control have significantly reduced test weight over some of the fungicide treatments. There were no significant differences in the effectiveness of the fungicides for controlling stripe rust at the later application dates. There was no increase in yield or reduction in percent leaf area diseased when fungicide was applied at the late tillering growth stage. The most effective disease control came when application was timed closely to appearance of the disease in the local area.

Product	Rate fl oz/A	Application Timing Feekes Growth Stage	7/5/2007	7/12/2007	Yield bu/A	Test
			% Leaf area diseased	% Leaf area diseased		Weight lbs/bu
Untreated	-	-	8	20	117.8	60.8
Quilt 1.66 F	14	10.51	5	3	125.3	61.5
Tilt 3.6 EC	4	10.51	3	0	119.8	61.5
Headline 2.08 EC	6	10.51	4	1	122.6	61.6
Headline 2.08 EC	6	10.51	1	1	114.4	60.0
Headline 2.08 EC Tilt 3.6 EC	4	10.51	1	0	127.3	62.3
Headline 2.08 EC Tilt 3.6 EC	4	10.51	1	0	119.0	61.6
Headline 2.08 EC Tilt 3.6 EC	4	10.51	3	0	124.8	62.2
Headline 2.08 EC Tilt 3.6 EC	3	10.51	3	0	123.5	61.8
Quilt 1.66 F	14	9	0	0	114.8	60.7
Headline 2.08 EC Maestro MA	6	2	11	25	118.7	60.6
Caramba 0.75 SL	9	10.51	0	1	121.3	61.4
Quilt 1.66 F Maestro MA	7	2	10	16	118.8	60.4
Stratego 250 EC	6	2	6	14	116.5	60.3
Stratego 250 EC	10	9	0	1	118.8	60.8
Stratego 250 EC Stratego 250 EC	4	2	0	0	118.2	61.0
Absolute 500 SC	5	9	0	0	119.4	60.8
Prosaro 421 SC Induce 480 XL.....	6.5 1.25% v/v	9	0	0	118.0	61.0
FLSD (a=0.05)			4.3	5.3	9.3	0.9
CV			97.1	72.4	5.3	1.0
Pr > F			<0.0001	<0.0001	NS	<0.0001

*FLSD = Fisher's protected least significant difference value. NS = not significantly different.