HRS Wheat Variety Response to Foliar Fungicides, Carrington

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The objective of the trial was to compare response of 12 common or newly released HRS wheat varieties with foliar application of fungicides. The irrigated trial was planted at 1.25 million pure live seeds/acre (A) on May 3 on soybean ground at the NDSU Carrington Research Extension Center. Experimental design was split plot, with fungicide as whole plot and varieties as subplot, and four replications. Wheat residue was spread over the trial on May 31 to provide a source of disease inoculum. Headline at 3 fl oz/A plus 0.125% nonionic surfactant (NIS) was applied to 3- to 4-leaf stage wheat on May 31 with a hand-boom plot sprayer equipped with 8001 flat-fan nozzles delivering 14 gal/A at 35 psi. Prosaro at 6.5 fl oz/A plus NIS at 0.125% v/v was applied on June 29 or 30, or July 2 to varieties at Feekes 10.5.1 with TJ60 8002VS nozzles delivering 14 gal/A at 35 psi. Flag leaf disease was visually evaluated on July 20 at the soft dough stage. Fusarium head blight was not evaluated due to low incidence. The trial was harvested with a plot combine on August 3.

Varieties yielding greater than 60 bu/A included Select, Faller and Glenn (Table 1). Glenn had the highest test weight at 61.5 lbs/bu. Across varieties, foliar fungicide reduced flag leaf disease to 10 percent of affected leaf area compared to the untreated check at 32 percent. Fungicide improved yield (12.6 bu/A or 21%) and test weight (1.4 lb/bu) compared to the untreated check. All varieties except Brennan had flag leaf disease scores of less than or equal to 12 percent when treated with fungicide (Table 2). Yield increase with fungicide compared to untreated checks ranged from 13.5 to15.9 bu/A (21 to 28%) with Faller, Elgin, Prosper and WB Mayville. Yield increase with fungicide compared to untreated checks ranged from 8.9 to11.8 bu/A (12 to 18%) with Rollag, SY Soren, Jenna, Select and Glenn.

Table 1. HRS wheat variety response to foliar fungicide, Carrington, 2012 (main factors).

Treatment	Days to Head (Jday)	Flag Leaf Disease (%)	Grain Yield (bu/A)	Test Weight (lb/bu)	Seed Count (seeds/lb)
Faller	179	16	63.0	56.3	14819
Glenn	177	16	61.8	61.5	15469
Barlow	177	19	55.2	57.4	16438
Brennan	178	27	51.3	56.4	17382
Velva	180	32	30.8	46.3	18919
Elgin	179	15	56.0	55.2	17148
Jenna	180	16	53.8	54.9	15068
Select	176	20	65.8	60.0	15300
WB Mayville	178	28	45.7	54.1	15978
Prosper	179	19	59.1	55.2	15118
Rollag	178	15	47.5	58.2	16076
SY Soren	178	28	59.4	56.9	17890
LSD (0.05)	1	9	4.1	1.0	677
Fungicide	178	10	60.4	56.7	15590
untreated check	178	32	47.8	55.3	17010
LSD (0.05)	NS	4	1.7	0.4	277

Table 2. HRS wheat variety response to foliar fungicide, Carrington, 2012 (variety by fungicide).

	Fungicide					Untreated Check				
Variety	Days to Head (Jday)	Flag Leaf Disease (%)	Grain Yield (bu/A)	Test Weight (lb/bu)	Seed Count (seeds/lb)	Days to Head (Jday)	Flag Leaf Disease (%)	Grain Yield (bu/A)	Test Weight (lb/bu)	Seed Count (seeds/lb)
Faller	178	6	71.0	56.8	14366	179	25	55.1	55.8	15273
Glenn	176	8	67.7	61.8	14973	177	24	55.9	61.2	15964
Barlow	177	10	60.9	57.8	15890	177	29	49.4	57.0	16985
Brennan	177	25	55.4	57.5	16984	178	29	47.2	55.4	17780
Velva	180	12	41.1	47.7	17208	180	51	20.6	45.0	20630
Elgin	179	7	62.7	55.7	16209	179	22	49.2	54.7	18087
Jenna	180	7	59.2	55.9	14434	180	24	48.3	53.9	15701
Select	176	10	71.7	60.5	14926	176	31	59.9	59.6	15674
WB Mayville	178	8	53.1	55.1	14607	178	48	38.3	53.0	17350
Prosper	179	5	66.4	56.0	14391	179	33	51.7	54.5	15844
Rollag	178	6	51.9	58.7	15582	179	23	43.0	57.7	16570
SY Soren	177	10	64.0	57.2	17514	178	45	54.8	56.5	18266

Variety by Fungicide LSD (0.05): NS for grain yield and test weight.

Hard red spring wheat variety by fungicide evaluation, June 2012.