

## HRS wheat variety response to foliar fungicides, Carrington, 2010

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The objective of the trial was to compare response of 10 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 April 28 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. Headline at 3 fl oz/A plus 0.125% NIS (Induce) was applied to 4-leaf stage wheat on June 2 with a hand-boom plot sprayer equipped with 8001 flat fan nozzles delivering 14 gal/A at 35 psi. Wheat residue was spread over the trial on June 7 to provide a source of disease inoculum. Prosaro at 6.5 fl oz/A plus NIS (Induce) at 0.125% v/v were applied on June 28, July 1 or July 3 to varieties at Feekes 10.5.1 with TJ60 8002VS nozzles delivering 14 gpa at 35 psi. Flag leaf disease was visually evaluated on July 28 at the soft dough stage. Some natural leaf necrosis was occurring during the evaluation. Fusarium head blight was not evaluated due to low incidence. The trial was harvested with a plot combine on August 17.

Varieties yielding greater than 75 bu/A included Faller, Barlow, Brick, Brennan, Jenna, and Select (Table 1). Glenn had the highest test weight at 61.4 lb/bu. Varieties with protein at 15.5% or greater include Tom, Barlow, and Glenn. Across varieties, the fungicide treatment reduced flag leaf chlorosis/necrosis by nearly one-half, and improved yield (6.8 bu/A or 9%) and test weight compared to the untreated check. No significant interaction of variety by fungicide occurred among factors (Table 2). Varieties with 10.4 to 15.9 bu/A (15 to 27%) increase in yield with fungicide compared to untreated checks include Tom, Brennan, Jenna, and Digger.

**Table 1. HRS wheat variety response to foliar fungicide, Carrington, 2010 (main factors).**

Treatment	Days to Head (Jday)	Flag leaf chlorosis/necrosis (%)	Plant Height (cm)	Plant Lodge (0-9)	Grain Yield (bu/A)	Test Weight (lb/bu)	Seed Count (seeds/lb)	Protein (%)
Faller	180	49	87	3	81.9	57.7	13095	14.4
Tom	178	67	86	3	67.0	58.6	12028	15.5
Barlow	176	56	88	2	75.4	59.5	14519	15.5
Brick	174	76	91	2	75.2	60.2	13944	15.0
Sabin	182	48	85	2	74.7	58.1	14997	15.3
Brennan	177	66	77	1	76.8	58.2	15396	15.1
Jenna	182	53	81	1	76.0	56.9	12832	15.0
Glenn	176	60	93	1	70.9	61.4	14113	15.7
Digger	178	60	82	1	68.7	56.9	13804	14.7
Select	175	79	89	2	75.2	60.0	14404	14.7
LSD (0.05)	1	13	3	2	6.7	0.9	NS	NS
Fungicide	178	43	86	2	77.6	59.2	13470	15.1
untreated check	178	80	86	2	70.8	58.3	14356	15.1
LSD (0.05)	NS	6	NS	NS	3.0	0.4	NS	NS
Mean	178	61	86	2	74.2	58.7	13913	15.1
C.V. (%)	0.2	17.6	3.1	81.0	8.6	1.4	4.7	2.7

**Table 2. HRS wheat variety response to foliar fungicide, Carrington, 2010 (variety by fungicide).**

Variety	Fungicide								Untreated check							
	Flag Leaf		Plant Height (cm)	Plant Lodge (0-9)	Grain Yield (bu/A)	Test Weight (lb/bu)	Seed Count (seeds/lb)	Protein (%)	Flag Leaf		Plant Height (cm)	Plant Lodge (0-9)	Grain Yield (bu/A)	Test Weight (lb/bu)	Seed Count (seeds/lb)	Protein (%)
	Days to Head (Jday)	chlorosis/necrosis (%)							Days to Head (Jday)	chlorosis/necrosis (%)						
Faller	180	29	87	3	84.9	58.4	12636	14.3	180	68	87	3	78.9	57.0	13555	14.5
Tom	178	44	86	3	72.3	59.0	11542	15.5	178	90	87	4	61.7	58.1	12515	15.5
Barlow	176	43	89	2	73.6	59.4	14347	15.6	176	70	88	2	77.2	59.5	14691	15.4
Brick	174	63	90	3	78.3	60.3	13615	15.0	175	89	91	1	72.0	60.0	14272	15.0
Sabin	182	25	83	2	76.5	58.6	14413	15.3	182	70	86	2	72.8	57.7	15581	15.4
Brennan	177	48	77	1	82.0	58.9	14721	15.1	177	85	77	0	71.6	57.4	16071	15.0
Jenna	182	31	83	2	83.1	57.4	12409	14.7	182	75	79	1	68.9	56.4	13255	15.3
Glenn	176	45	93	1	72.8	62.2	13745	15.8	176	76	94	1	69.0	60.7	14481	15.7
Digger	178	32	83	1	76.6	57.6	13352	14.7	178	89	81	1	60.7	56.2	14255	14.7
Select	175	65	89	1	75.6	60.4	13921	14.8	175	93	89	2	74.9	59.6	14887	14.5

Variety by Fungicide LSD (0.05): NS for all factors.