

### **HRS wheat variety response to foliar fungicides, Carrington, 2009**

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The objective of the trial was to compare the response of eight new HRS wheat varieties to foliar application of fungicides. The irrigated trial was planted at 1.25 million pure live seeds/acre (A) on May 11 on soybean ground at the NDSU Carrington Research Extension Center. Experimental design was a randomized complete block with a factorial arrangement and four replications. Headline at 3 fl oz/A plus 0.125% NIS (Induce) was applied at 3.5 leaf stage wheat on June 5 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 (Induce) at 0.125% v/v was applied at Feekes 10.5.1 on July 6 or 10 with TJ60 8002VS nozzles delivering 14 gpa at 35 psi. Flag leaf disease was visually evaluated on July 31 at the soft dough stage. The trial was harvested with a plot combine on September 10.

Varieties with greater than 10% flag leaf foliar disease (tan spot and Septoria) included Brick, Jenna, Sabin and Brennan (Table 1). Fusarium head blight (scab) field notes were not taken due to very low incidence. Varieties with yield greater than 90 bu/A included Jenna (90.1), Barlow (91.2), Albany (95.8), and Faller (102.0). Barlow had the highest test weight at 62.6 lb/bu. Faller and Tom had the largest seed size among varieties. Varieties with protein at 13.5% or greater include Tom, Sabin, Barlow and Brennan. Across varieties, the fungicide treatment reduced flag leaf disease and plant lodge, and improved yield (4.1 bu/A or 5%), test weight, and kernel size compared to the untreated check. However, protein was less with fungicide compared to the untreated check. No significant interaction of variety by fungicide occurred among factors (Table 2). Jenna and Sabin had a yield response at 10% or greater with fungicide compared to untreated.

**Table 1. HRS wheat variety response to foliar fungicide, Carrington, 2009 (main factors).**

	Flag Leaf Disease	Plant Height	Plant Lodge	Grain Yield	Test Weight	Seed Count	Protein
Treatment	(%)	(cm)	(0-9)	(bu/A)	(lb/bu)	(seeds/lb)	(%)
Faller	3	95	1	102.0	61.6	10735	12.8
Tom	5	95	2	83.8	61.7	11050	13.5
Barlow	7	96	2	91.2	62.6	12198	13.8
Brick	11	98	1	82.6	62.0	12863	12.6
Sabin	25	95	3	79.1	59.3	14031	13.7
Brennan	31	81	0	77.4	60.2	13815	13.8
Jenna	12	89	0	90.1	60.2	11469	13.0
Albany	6	90	2	95.8	61.0	14621	11.2
LSD (0.05)	11	2	1	8.1	0.5	327	0.8
Fungicide	7	92	1	89.8	61.4	12392	12.8
untreated check	17	93	2	85.7	60.8	12803	13.3
LSD (0.05)	5	1	1	4.0	0.3	164	0.4
mean	12	92	2	87.7	61.1	12598	13.1

**Table 2. HRS wheat variety response to foliar fungicide, Carrington, 2009 (variety by fungicide).**

	Fungicide							Untreated check	
	Flag Leaf Disease	Plant Height	Plant Lodge	Grain Yield	Test Weight	Seed Count	Protein	Flag Leaf Disease	Plant Height
Variety	(%)	(cm)	(0-9)	(bu/A)	(lb/bu)	(seeds/lb)	(%)	(%)	(cm)
Faller	0	95	1	104.7	61.9	10479	12.5	7	95
Tom	0	95	1	80.5	61.9	10816	13.3	9	95
Barlow	6	95	2	90.8	62.9	12094	13.4	8	98
Brick	7	98	1	84.8	62.2	12754	12.7	15	97
Sabin	12	94	4	84.2	60.0	13759	13.4	37	96
Brennan	20	79	0	80.6	60.4	13497	13.8	41	83
Jenna	7	88	1	94.7	60.5	11295	12.8	17	89
Albany	7	89	2	98.4	61.2	14445	10.8	5	90
Variety by Fungicide LSD (0.05): NS for all factors.									