

## HRS Wheat Variety Response to Seeding Rate and Foliar Fungicide, Carrington, 2005

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The irrigated trial was established with 'Glenn', 'Reeder' and 'Steele-ND' wheat planted on 2004 soybean ground (supplemental wheat straw spread after planting) at 1 and 1.75 million pure live seeds (PLS)/acre (A) on April 28 at the NDSU Carrington Research Extension Center. Experimental design was a randomized complete block with a split-split plot arrangement and four replications. Folicur at 4 fl oz/A + NIS (Induce) at 0.125% v/v was applied to wheat at Feekes 10.51 (following about 30 hours of moisture present on heads) on June 30 with a hand-boom plot sprayer equipped with 8002 twin jet nozzles delivering 18 gpa at 40 psi with 63F air temperature and 77% relative humidity. Flag leaf disease (tan spot and *Septoria* spp.) and leaf rust were visually evaluated on July 18, and Fusarium head blight (scab) was evaluated on July 21 at the soft-dough stage. The trial was harvested with a plot combine on August 16.

Established plant stands were 1,223,000 and 2,097,000 seedling plants/A with the normal and high seeding rates, respectively (Table 1). However, spikes/A were similar between seeding rates. Seed yield and quality were similar between seeding rates. Fungicide application significantly reduced disease levels though scab plot severity was still 16.1%. Also, Folicur reduced DON by 38%, but the result was 6.2 ppm. Compared to the untreated check, Folicur increased yield by 13.3 bu/A, test weight by 2.2 lb/bu, and 250 KWT by 0.6 grams. Lodging occurred with Glenn and Steele-ND at the high plant population (Table 2). Scab plot severity with fungicide was 8.2, 14.1, and 25.9% with Glenn, Steele-ND, and Reeder, respectively. Leaf disease and leaf rust reduction with fungicide was greatest with Reeder. Fungicide improved yield 10.9 bu/A with Glenn, 11.8 bu/A with Steele-ND, and 17.3 bu/A with Reeder compared to the untreated checks. Fungicide improved test weight 1.3 lb/bu with Glenn, 1.9 lb/bu with Steele-ND, and 3.2 lb/bu with Reeder compared to the untreated checks.

**Table 1. HRS wheat variety response to seeding rate and foliar fungicide, Carrington, 2005 (main factors).**

	Scab incidence	Scab severity	Scab plot severity	DON	Leaf disease	Leaf rust	Plant stand	Spike	Plant height	Lodge	Grain yield	Test weight	250 KWT	Protein
Treatment	(%)	(%)	(%)	(ppm)	(%)	(%)	5/23 (x1000/A)	7/11 (x1000/A)	(in)	(0 - 9)	(bu/A)	(lb/bu)	(grams)	(%)
<b>Variety</b>														
Glenn	74.4	17.5	13.7	7.0	6	0	1741.5	1845.7	36.8	1	58.3	61.5	7.34	15.8
Reeder	90.6	40.5	36.8	9.9	20	8	1607.2	1867.0	35.4	0	40.6	55.1	6.42	15.7
SteeleND	77.2	29.5	23.9	7.3	11	0	1633.9	1917.5	34.4	1	48.6	55.4	6.75	15.8
LSD 0.05	5.9	6	5.9	NS	4	2	*	NS	0.8	1	2.5	0.5	0.19	NS
<b>Seeding Rate</b>														
1.0 mil pls/A	79.2	30.7	25.6	8.4	11	3	1223.1	1848.6	36.0	0	49.7	58.2	6.83	15.7
1.75 mil pls/A	82.3	27.7	24.1	7.7	14	3	2098.6	1904.8	35.1	1	48.6	58.4	6.90	15.8
LSD 0.05	NS	3	NS	NS	1	NS	*	NS	0.6	1	NS	NS	NS	NS
<b>Fungicide</b>														
Folicur	73.3	20.7	16.1	6.2	4	0	1692.5	1865.0	35.5	1	55.8	59.4	7.14	15.7
untreated	88.1	37.7	33.6	10.0	21	5	1629.2	1888.5	35.5	1	42.5	57.2	6.54	15.8
LSD 0.05	8.9	6.1	6.7	3	4	2	NS	NS	NS	NS	3.5	0.5	0.34	NS

**Table 2. HRS wheat variety response to seeding rate and foliar fungicide, Carrington, 2005 (interactions).**

	Scab incidence	Scab severity	Scab plot severity	DON	Leaf disease	Leaf rust	Plant stand	Spike	Plant height	Lodge	Grain yield	Test weight	250 KWT	Protein
Treatment	(%)	(%)	(%)	(%)	(%)	(%)	5/23 (x1000/A)	7/11 (x1000/A)	(in)	(0 - 9)	(bu/A)	(lb/bu)	(grams)	(%)
<b>VarxSeed</b>														
Glenn 1	72.5	17.3	12.9	7.7	5	0	1258.2	1834.0	36.9	0	58.8	61.5	7.44	15.8
Glenn 1.75	76.3	17.8	14.5	6.2	7	0	2224.9	1857.4	36.6	2	57.7	61.4	7.24	15.8
Reeder 1	90.6	42.4	38.1	10.5	19	8	1221.9	1844.6	35.8	0	39.7	55.0	6.38	15.7
Reeder 1.75	90.6	38.7	35.4	9.4	23	9	1992.5	1889.4	35.1	0	41.5	55.3	6.47	15.8
SteeleND 1	74.4	32.4	25.6	7.1	8	0	1189.2	1867.4	35.3	0	50.6	58.2	6.65	15.6
SteeleND 1.75	80.0	26.5	22.3	7.6	13	0	2078.5	1967.6	33.6	2	46.6	58.5	6.85	15.9
LSD 0.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	1	NS	NS	0.17	NS
<b>VarxFung</b>														
Glenn Fung	63.8	12.6	8.2	5.0	3	0	1758.6	1851.7	36.4	1	63.7	62.1	7.40	15.7
Glenn	85.0	22.5	19.3	9.0	9	0	1724.4	1839.6	37.1	1	52.8	60.8	7.28	15.8
Reeder Fung	89.4	29.0	25.9	7.5	5	1	1647.7	1902.2	35.8	0	49.3	56.7	6.98	15.8
Reeder	91.9	52.1	47.6	12.4	37	16	1566.7	1831.8	35.1	0	32.0	53.5	5.87	15.6
SteeleND Fung	66.9	20.6	14.1	6.0	4	0	1671.1	1841.1	34.4	1	54.5	59.3	7.03	15.7
SteeleND	87.5	38.4	33.8	8.7	17	0	1596.5	1993.9	34.5	1	42.7	57.4	6.48	15.9
LSD 0.05	NS	NS	NS	NS	5	2	NS	NS	NS	NS	3.8	0.8	0.26	NS
<b>SeedxFung</b>														
1.0 Folicur	73.3	23.1	18.1	6.5	3.0	0	1242.1	1861.4	35.9	0	56.7	59.3	7.10	15.7
1.0 untreated	85.0	38.3	33.0	10.4	18	5	1204.2	1835.9	36.0	0	42.7	57.1	6.55	15.7
1.75 Folicur	73.3	18.3	14.0	5.8	5	0	2142.9	1868.6	35.1	2	55.0	59.4	7.17	15.8
1.75 untreated	91.3	37.1	34.1	9.6	24	6	2054.3	1941.1	35.0	1	42.3	57.4	6.50	15.8
LSD 0.05	NS	NS	NS	NS	2	NS	NS	NS	NS	NS	NS	NS	NS	NS
mean	80.7	29.2	24.8	8.1	12	3	1660.9	1876.7	35.5	1	49.1	58.3	6.84	15.8
C.V.%	9.1	16.7	22.7	61.3	17.0	25.7	6.8	6.1	2.9	91.6	6.4	0.8	2.4	1.5