HRS wheat variety response to foliar fungicides, Carrington, 2013.
(Gregory Endres and Blaine Schatz)

Trial objective was to compare response of 12 common or newly released HRS wheat varieties with foliar application of fungicides. The irrigated trial was planted at 1.4 million pure live seeds/A on May 23 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 to provide a source of disease inoculum. Headline at 3 fl oz/A plus 0.125% nonionic surfactant (NIS) was applied to 4-leaf stage wheat on June 18 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 July 10 or 15 to varieties at Feekes 10.5.1 with TJ60 8002EVS nozzles delivering 14 gal/A at 35 psi. Level of green foliage that included disease and natural desiccation was visually evaluated on August 5 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 30.

Averaged across varieties, fungicides extended green foliage, and increased yield (6.3 bu/A; 8%), test weight and seed size (Table 1). Averaged across varieties, Select was earliest to head; Faller, Elgin, and Velva maintained highest amount of green foliage; Faller and Prosper had highest yield; Glenn had highest test weight; and Faller and Prosper had largest seed size. Varieties with 10 percent or greater yield response to fungicides include Select (10%), SY Rowyn and Rollag (13%), and WB Mayville (18%) (Table 2).

Table 1. HRS wheat variety response to foliar fungicide, Carrington, 2013 (main factors).

	Days to head	Green foliage[1]	Grain yield	Test weight	Seed count	Seed protein
Treatment	(Jday)	(0-9)	(bu/A)	(lb/bu)	(seeds/lb)	%
Faller	192	2	87.0	62.0	11,091	12.4
Glenn	188	3	76.0	64.7	12,308	14.3
Barlow	187	3	70.4	63.6	12,292	14.0
Elgin	190	2	79.1	62.1	13,185	13.7
Forefront	187	3	76.4	61.7	12,831	13.9
Velva	192	2	70.4	61.6	11,532	13.4
SY Rowyn	189	3	73.8	61.3	13,685	13.2
Select	186	5	73.6	63.5	12,101	13.4
WB Mayville	187	4	72.3	62.5	11,466	14.2
Prosper	192	3	87.6	61.9	10,754	12.8
Rollag	190	3	73.4	62.9	11,574	13.8
SY Soren	189	3	76.4	62.7	12,561	13.8
LSD (0.05)	1	1	5.9	0.5	411	0.7
Fungicide	189	2	79.5	62.7	12,011	13.6
untreated check	189	4	73.2	62.4	12,219	13.5
LSD (0.05)	NS	1	2.4	0.2	168	NS
mean	189	3	76.4	62.6	12,115	13.6
C.V. (%)	0	32.5	7.5	0.9	3.3	5.6

[1]0=green and 9=no green.

Table 2. HRS wheat variety response to foliar fungicide, Carrington, 2013 (variety by fungicide).

	Fungicide						Untreated check					
Variety	Days to head (Jday)	Green foliage (0-9)	Grain yield (bu/A)	Test weight (lb/bu)	Seed count (seeds/lb)	Seed protein %	Days to head (Jday)	Green foliage (%)	Grain yield (bu/A)	Test weight (lb/bu)	Seed count (seeds/lb)	Seed protein %
Faller	191	1	88.8	62.6	10,980	12.6	192	2	85.1	61.4	11,202	12.2
Glenn	188	2	79.5	64.8	12,337	14.6	187.3	3	72.6	64.6	12,278	14.0
Barlow	187	2	71.2	63.7	12,042	14.0	186.8	4	69.6	63.5	12,542	14.1
Elgin	190	2	80.3	62.1	13,046	13.7	189.8	3	77.8	62.2	13,324	13.7
Forefront	187	2	77.6	61.7	12,878	14.0	187	3	75.1	61.8	12,784	13.9
Velva	192	1	72.4	61.3	11,601	13.9	192	3	68.5	61.9	11,463	12.9
SY Rowyn	189	3	78.9	61.5	13,440	13.2	188.3	4	68.6	61.1	13,930	13.2
Select	186	3	77.4	63.5	11,861	13.7	186.3	6	69.8	63.5	12,341	13.1
WB Mayville	188	2	79.5	63.2	11,222	14.2	187.3	6	65.2	61.8	11,709	14.3
Prosper	192	2	90.8	61.9	10,683	12.7	192	4	84.4	61.9	10,825	12.9
Rollag	190	2	78.6	63.1	11,376	13.8	189.5	4	68.1	62.7	11,772	13.9
SY Soren	189	3	78.9	62.8	12,660	13.4	188.8	3	73.9	62.5	12,462	14.2

Variety by Fungicide LSD (0.05): NS for all factors except green foliage=1.