

Evaluation of foliar fungicide on several HRSW cultivars, Langdon, ND 2009

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A field experiment was planted on 19 May at Langdon, ND. The previous crop was soybeans. Twenty-one HRSW cultivars were planted at a rate of 1.5 million pure live seeds/a. Seed was treated with Dividend. Plot size consisted of seven 6-inch rows 16 ft long. After herbicide application was completed, a Fusarium inoculum consisting of two isolates was hand-broadcast at rate of 150 gms/plot to encourage development of disease. Prosaro fungicide and Induce adjuvant were applied at 6.5 fl oz/a and 0.125% v/v with a CO₂ pressurized backpack sprayer delivering 18.4 GPA at 40 psi. The sprayer was equipped with a three-nozzle boom, nozzles spaced 20 inches on center, mounted on a double swivel and oriented to spray forward and backward 30 degrees downward from horizontal. The application was made at Feekes growth stage (G.S)10.51 on 7 or 14 July by cultivar maturity. Prosaro fungicide (a 50:50 blend of prothioconazole/tebuconazole) is manufactured by Bayer Cropscience and Induce by Helena Chemical Co. Leaf severity was determined visually from 10 leaves sampled 20 days after G.S. Feekes G.S.10.51. The experimental design was a split-block with four replications.

Cultivars were significantly different from one another for all traits examined. Fungicide treatment was significant for yield and Fusarium damaged kernels (FDK). Cultivar yield response to fungicide application averaged 9.4 bushels and ranged from 5.1 to 17.0 bu/a. FHB disease pressure was very light. No observations were made because of the low infections. Leaf disease pressure was light to moderate and primarily consisted of bacterial leaf blotch and septoria/tan spot complex. There was no significant difference in leaf severity between the fungicide treatments. Bacterial infections are not controlled by fungicide applications.

Langdon HRSW Variety x Fungicide Trial

ANOVA	Yield	TW	FDK	Leaf Severity
Cultivar	**	**	**	**
Fungicide	*	NS	*	NS
C*F	NS	**	**	NS

P<0.05*, P<0.01**, NS=non-significant

Yield, test weight, Fusarium damage kernel and leaf severity response by fungicide treatment averaged over cultivars

Fungicide Treatment	YIELD bu/a	TW lbs/bu	FDK %	Leaf Severity %
No Fungicide	86.4	60.5	0.0	43.0
Fungicide	95.9	60.8	0.3	37.0
LSD 5%	8.0	NS	0.2	NS
LSD 1%	NS	NS	NS	NS
C.V.%	5.8	0.8	0.3	11

**Yield, test weight, Fusarium damaged kernels and leaf severity response
by cultivar averaged over fungicide treatments**

Variety	YIELD	TW	FDK	Leaf Severity
	bu/a	lbs/bu	%	%
Faller	105.5	60.8	0.0	33
Traverse	104.2	59.0	0.0	33
Albany	99.8	61.3	0.0	64
Howard	98.2	61.2	0.3	30
Breaker	97.5	60.0	0.0	26
Cromwell	96.8	61.5	0.1	28
Tom	95.0	60.9	0.0	41
Steele-ND	95.0	61.1	0.5	44
Brick	94.9	61.4	0.0	40
Sabin	93.6	60.4	0.0	37
Jenna	91.3	60.1	0.4	44
Ada	91.2	61.8	0.5	27
Glenn	91.0	63.3	0.0	29
Hat Trick	90.9	61.4	0.1	58
Samson	88.4	59.3	1.4	49
Barlow	88.2	60.6	0.1	25
Kuntz	83.6	59.8	0.3	48
Freyr	80.6	58.9	0.0	40
RB07	76.4	59.6	0.0	46
Brennan	71.3	60.3	0.1	40
Kelby	70.9	60.5	0.0	38
LSD 5%	5.8	0.7	0.3	11
LSD 1%	7.7	0.9	0.3	15

**Yield, test weight, Fusarium damaged kernels and leaf severity
by cultivar and fungicide treatment**

Treatment	YIELD	TW	FDK	Leaf Severity
	bu/a	lbs/bu	%	%
Steele-ND+F	98.8	61.5	0.0	47
Steele-ND	91.1	60.7	1.0	41
Freyr+F	84.9	58.8	0.0	37
Freyr	76.4	59.1	0.0	43
Glenn+F	95.4	63.4	0.0	28
Glenn	86.5	63.2	0.0	30
Kelby+F	75.4	61.2	0.0	35
Kelby	66.3	59.9	0.0	41
Traverse+F	107.5	59.1	0.0	32
Traverse	100.8	58.9	0.0	35
Ada+F	97.0	62.1	0.0	24
Ada	85.4	61.5	1.0	30
Howard+F	103.7	61.1	0.0	24
Howard	92.8	61.3	0.5	36
Faller+F	111.1	60.9	0.0	32
Faller	99.8	60.7	0.0	33
RB07+F	79.9	59.6	0.0	48
RB07	73.0	59.7	0.0	44
Kuntz+F	88.8	59.9	0.0	44
Kuntz	78.4	59.8	0.5	52
Tom+F	100.1	60.8	0.0	35
Tom	89.9	61.0	0.0	47
Hat Trick+F	94.3	61.5	0.0	55
Hat Trick	87.6	61.3	0.3	60
Albany+F	103.0	61.4	0.0	70
Albany	96.5	61.3	0.0	59
Breaker+F	104.8	59.5	0.0	20
Breaker	90.2	60.4	0.0	31
Samson+F	97.0	60.1	0.8	38
Samson	79.9	58.6	2.0	60
Sabin+F	96.1	60.6	0.0	34
Sabin	91.0	60.3	0.0	40
Brick+F	99.0	61.7	0.0	38
Brick	90.7	61.1	0.0	42
Jenna+F	98.0	60.3	0.0	34
Jenna	84.5	60.0	0.8	53
Brennan+F	74.5	60.7	0.0	40
Brennan	68.0	59.8	0.3	40
Barlow+F	93.0	60.4	0.0	25
Barlow	83.5	60.7	0.3	26
Cromwell+F	100.6	61.3	0.0	22
Cromwell	93.1	61.6	0.3	35
LSD 5%	NA	0.7	0.3	NA
LSD 1%	NA	1.0	0.5	NA

NA-non-applicable because ANOVA for F*V was NS

Yield and estimated revenue by cultivar and fungicide treatment, Langdon 2009.

Variety	Yield (bu/a)			Revenue (\$/a) ¹		
	No Fungicide	Fungicide	Difference	No Fungicide	Fungicide	Difference
Faller	99.8	111.1	11.3	529	569	40
Traverse	100.8	107.5	6.7	534	550	15
Breaker	90.2	104.8	14.6	478	535	57
Howard	92.8	103.7	10.9	492	530	38
Albany	96.5	103.0	6.5	512	526	14
Cromwell	93.1	100.6	7.5	493	513	20
Tom	89.9	100.1	10.2	477	511	34
Brick	90.7	99.0	8.3	481	505	24
Steele-ND	91.1	98.8	7.6	483	503	20
Jenna	84.5	98.0	13.5	448	499	52
Ada	85.4	97.0	11.6	452	494	42
Samson	79.9	97.0	17.0	424	494	70
Sabin	91.0	96.1	5.1	482	489	7
Glenn	86.5	95.4	8.9	459	486	27
Hat Trick	87.6	94.3	6.6	464	480	15
Barlow	83.5	93.0	9.6	442	473	31
Kuntz	78.4	88.8	10.4	415	451	35
Freyr	76.4	84.9	8.4	405	430	25
RB07	73.0	79.9	6.9	387	403	16
Kelby	66.3	75.4	9.1	351	380	28
Brennan	68.0	74.5	6.5	360	375	15
Avg	86.0	95.4	9.4	456	485	30

¹Fungicide + ground application - \$20/a, HRSW price \$5.30/bu

Yield and estimated revenue by cultivar and fungicide treatment with protein adjustments, Langdon 2009.

Variety	Protein	Price/bu	Revenue(\$/a) with protein discounts ¹		
			No Fungicide	Fungicide	Difference
Faller	13.2	4.50	449	480	31
Traverse	12.8	4.20	423	432	8
Breaker	13.5	4.70	424	473	49
Howard	13.4	4.70	436	467	31
Albany	12.4	4.00	386	392	6
Cromwell	13.5	4.70	437	453	15
Tom	13.5	4.70	423	450	28
Brick	13.3	4.50	408	426	18
Steele-ND	13.7	4.90	447	464	17
Jenna	13.7	4.90	414	460	46
Ada	13.5	4.70	401	436	35
Samson	13.3	4.50	360	416	57
Sabin	13.9	5.10	464	470	6
Glenn	13.9	5.10	441	467	25
Hat Trick	13.3	4.50	394	404	10
Barlow	13.7	4.90	409	436	27
Kuntz	13.4	4.70	368	397	29
Freyr	13.6	4.90	374	396	21
RB07	13.7	4.90	358	371	14
Kelby	14.0	5.30	351	380	28
Brennan	13.8	5.10	347	360	13
Avg			405	430	24

¹Proteins were not taken on trial data. Numbers provided are a 5-site average from Langdon and off-stations locations in 2009. Proteins adjustments are \$0.20 1/5 up and down from 14%, \$0.10 down from 13%.