

WHEAT (*Triticum aestivum* L. 'Howard')

Tan spot; *Pyrenophora tritici-repentis*
Septoria; *Septoria* spp.
Fusarium head blight; *Fusarium graminearum*
Leaf rust; *Puccinia recondita*

R.O. Ashley
Dickinson Research Extension Center
Dickinson, ND, 58601

Bayer Foliar Fungicide in spring wheat near Bowman, ND 2010.

This experiment was conducted in a field located near Bowman, ND (NW ¼, Section 21, T133N, R101W – Slope County, ND) with a previous cropping history of spring wheat in 2009. A randomized complete block design with four replications was used. Plots were 6 ft wide by 50 ft long with a 4 ft wide spring wheat buffer between plots. A burndown application of 0.5 ae/a glyphosate + ammonium sulfate was applied on 21 Apr. Plots were seeded by the producer with a JD single disc drill on 4 May 2010. Anhydrous ammonia at the rate of 50 lbs/a (41 lbs/a N) was applied through the drill through mid-row banders during the seeding operation. A post emergent herbicide application of BroClean (bromoxynil) at 1.0 pt/a, Puma (Fenoxaprop-P) at 0.66 pt/a, MCP Ester 4 at 0.5 pt/a, and Unity (thifensulfuron) at 0.68 oz/a was applied on 14 Jun. Fungicide applications at 5 leaf stage were made on 13 Jun, and applications at flag leaf stage were made on 30 Jun and beginning flowering application was made on 9 Jul. All treatments were applied in 19.1 gal/a water at 30 psi using a CO₂ pressurized hand-held spray boom equipped with 8002VS flat fan nozzles. Tan spot disease evaluations were conducted on 21 Jun, leaf spot disease evaluations were done on 9 Jul and late season leaf disease, FHB, and insect evaluations were conducted on 16 Jul. Evaluations consisted of observations made on ten consecutive plants in the center row of each plot. Incidence was recorded as the percent of plants with at least one lesion observed, and severity was recorded as the average leaf area covered by lesions for all leaves for the early season evaluation, only the top three leaves for the mid-season evaluation, and the flag leaf for the late season evaluation. Crop injury observations were made at the same time as the disease evaluations. No visual symptoms of FHB were detected. Grain samples from the control plots were sent to NDSU for DON analysis and no DON was detected in these samples. No further testing for DON in grain samples produced from fungicide treatments was done. Precipitation at the North Dakota Agricultural Weather Network Bowman, ND weather station in May, Jun, Jul, and Aug was 3.41, 4.26, 1.69, and 1.3 inches respectively or more than 115% of normal for the growing season. Moist conditions throughout May and Jun promoted tan spot but dry weather conditions throughout July were not conducive for any of the leaf diseases. However August precipitation was above normal providing an opportunity for a mild late season leaf rust infection. Disease ratings reflect moisture conditions at the time the crop was susceptible to infection. Harvest was with a Massy Ferguson 8XP combine on 17 Aug. Grain yield, and test weight were adjusted to a 12% moisture basis. All data was statistically analyzed using SAS Statistical software v 9.1 Proc ANOVA.

Leaf disease evaluations for Howard HRSW plants treated with selected foliar fungicides at various application times, Bowman, ND, 2010.

Treatment ¹	Rate fl oz/a	Evaluation ²					
		I1	S1	I2	S2	I3	S3
Untreated		95.0	19.8	100.0	29.3	100.0	42.3
Stratego FGS2	4	95.0	1.5	100.0	12.0	100.0	16.8
Exp #1 FGS2	3.285	97.5	11.0	100.0	15.5	100.0	29.0
Stratego FGS8	8	95.0	14.3	97.5	2.8	97.5	8.3
Prosaro NIS FGS8	6.5	100.0	16.0	95.0	3.3	100.0	5.5
Prosaro NIS FGS10.5.1	6.5	100.0	15.5	100.0	16.5	100.0	11.3
Stratego FGS2/ Prosaro NIS FGS10.5.1	4.0/6.5	97.5	1.0	95.0	5.5	97.5	5.5
Exp #1 FGS2/ Prosaro NIS FGS10.5.1	3.285/6.5	100.0	11.5	100.0	15.5	95.0	18.5
Mean		97.5	11.3	98.4	12.5	98.8	17.1
CV%		6.1	39.2	5.2	55.6	3.8	41.2
LSD .05		NS	6.5	NS	10.2	NS	10.4

¹Treatment product and crop stage at application, FGS2 = Feekes Growth Stage 2, FGS8 = Feekes Growth Stage 8, FGS10.5.1 = Feekes Growth Stage 10.5.1. NIS = non-ionic surfactant.

²I = Disease Incidence, S = Disease Severity, Evaluation Date 1 = 21 Jun, 2 = 9 Jul, and 3 = 16 Jul.

Grain yield and test weight of Howard HRSW treated with selected foliar fungicide treatments near Bowman, ND, 2010.

Treatment ¹	Rate fl oz/a	Grain ²	
		Test wt lb/bu	Yield bu/acre
Untreated		57.0	43.6
Stratego FGS2	4	58.9	49.3
Exp #1 FGS2	3.285	55.0	41.0
Stratego FGS8	8	60.2	48.4
Prosaro NIS FGS8	6.5	59.5	52.0
Prosaro NIS FGS10.5.1	6.5	60.5	54.3
Stratego FGS2/ Prosaro NIS FGS10.5.1	4.0/6.5	59.5	51.4
Exp #1 FGS2/ Prosaro NIS FGS10.5.1	3.285/6.5	59.1	46.7
Mean		58.7	48.3
CV%		2.8	9.7
LSD .05		2.4	6.9

¹Treatment product and crop stage at application, FGS2 = Feekes Growth Stage 2, FGS8 = Feekes Growth Stage 8, FGS10.5.1 = Feekes Growth Stage 10.5.1. NIS = non-ionic surfactant.

²Test wt and Yield are reported on a 12% moisture basis.