

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

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Tan spot; *Pyrenophora tritici-repentis*
Septoria; *Septoria* spp.
Fusarium head blight; *Fusarium graminearum*
Leaf rust; *Puccinia recondita*
Wheat stem sawfly; *Cephus cinctus*
Wheat stem maggot; *Meromyza americana*

Evaluation of Quilt, Tilt, and Stratego foliar fungicide treatments for control of leaf diseases and Warrior insecticide 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 opener 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 and fungicide plus insecticide applications at 5 leaf stage were made on 13 Jun, and applications at flag leaf stage were made on 30 Jun. 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. Wheat stem sawfly and wheat stem maggot infestations were very low throughout the plot, less than 1%, and no significant differences were found in among treatments with and without insecticide. 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.

Disease evaluations, grain test weight and yield for selected foliar fungicide and foliar fungicide + insecticide treatments on Howard HRSW near Bowman, ND, 2010.

Treatment ¹	Rate oz/a	----- Evaluations ² -----						--- Grain ³ ---	
		I1	S1	I2	S2	I3	S3	Test wt lb/bu	Yield bu/a
Untreated Check		100	29	100	33	100	35	57.8	44.4
Quilt Xcel FGS2	7.5	30	2	100	8	100	20	59.4	47.5
Quilt FGS2	7	100	9	95	4	98	17	60.7	50.6
Tilt FGS2	2	68	4	90	8	100	18	57.2	45.0
Tilt + Warrior FGS2	2 + 1.28	50	3	60	8	100	17	57.7	49.0
Tilt FGS2 + Quilt FGS8	2 + 14	78	2	88	6	68	2	61.1	52.3
Quilt FGS8	14	93	17	100	17	48	1	60.8	50.7
Quilt Xcel FGS8	10.5	93	15	83	1	53	1	60.4	47.7
Quilt + Warrior FGS2	7 + 1.28	90	18	95	8	100	16	57.6	46.7
Stratego FGS2	4	98	10	95	5	100	23	57.8	43.1
Mean		79.8	9.5	9.05	9.7	8.7	14.9	59.0	47.7
CV%		11.9	67.1	17.9	85.4	21.2	45.9	3.1	5.7
LSD .05		13.8	9.2	23.6	12.0	26.6	9.9	2.6	4.0

¹Treatment product and crop stage at application, FGS2 = Feekes Growth Stage 2, FGS8 = Feekes Growth Stage 8.

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

³Test wt and Yield are reported on a 12% moisture basis.