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

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

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

Evaluation of Quilt, Tilt, and Stratego foliar fungicide treatments for control of leaf diseases and Warrior and Endigo ZCX insecticides in spring wheat near Regent, ND 2011.

This experiment was conducted in a field located near Regent, ND (SW ¼, Section 18, T134N, R95W – Hettinger County, ND) with a previous cropping history of spring wheat in 2010. 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 May to eliminate volunteer wheat and early germinating weeds. Plots were seeded by the producer with a JD 1895 drill equipped with single disc openers and mid-row fertilizer disc openers on 26 May at the rate of 200 pls m^{-2}. Urea at the rate of 225 lbs/a (103.5 lbs/a N) was applied through the mid-row band disc openers of the drill and 75lbs/a of 12-36-6-5 (9 lb/a N, 27 lbs/a P_2O_5, 4.5 lbs/a K_2O, and 3.8 lbs/a S) as a starter was placed with the seed during the seeding operation. A post emergent herbicide application of Wolverine at 1.7 pt/a was made with a pickup mounted sprayer on 2 Jul. Fungicide and fungicide plus insecticide applications at Feekes growth stage 23 were made on 23 Jun. All treatments were applied in 19.1 gal/a water at 30 psi using a CO_2 pressurized hand-held spray boom equipped with 8002VS flat fan nozzles. Tan spot disease evaluations were conducted on 30 Jun and late season leaf disease was done on 27 Jul. Wheat stem sawfly evaluations were conducted on 17 Aug. Leaf disease evaluations consisted of observations made on ten consecutive plants in the center row of each plot. Wheat stem sawfly evaluation was conducted on 25 plants per plot. Selected plants were split and the presence of larva noted. Disease 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 and the flag leaf for the late season evaluation. Crop injury observations were made at the same time as the disease evaluations. No crop injury from the application was detected. No visual symptoms of FHB were detected. Grain samples from the untreated check 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 Mott, ND weather station in May, Jun, Jul, and Aug was 4.29, 2.79, 1.89, and 2.45 inches respectively or more than 119% 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. August moisture promoted bacterial leaf streak. Wheat stem sawfly infestations were very low throughout the plot, less than 1%, and no significant differences were found among treatments with and without insecticide. Harvest was with a Massy Ferguson 8XP combine on 7 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 Barlow HRSW near Regent, ND, 2011.

Treatment[1]	App Rate	Evaluations[2]					Grain[3]	
		I1	S1	I3	S3	SF	Yield	Test wt
	fl oz/acre	---------- % ----------					bu/acre	lb/bu
Untreated Check		17.5	19.8	100.0	9.3	0.25	27.7	55.3
Tilt	2.0	10.0	2.5	100.0	14.5	0.00	26.6	56.9
Tilt + Warrior II	2.0 + 1.28	10.0	3.3	100.0	6.8	0.50	35.7	58.1
Tilt + Endigo ZCX	2.0 + 3.5	10.0	3.5	100.0	9.5	0.50	25.7	56.6
Tilt + Endigo ZCX	2.0 + 4.0	10.0	2.5	95.0	12.0	0.25	35.1	58.4
Tilt + Endigo ZCX	2.0 + 4.5	10.0	5.0	92.5	13.5	0.75	35.7	57.3
Headline	3.0	10.0	1.8	100.0	12.0	0.75	28.3	55.9
Stratego	4.0	10.0	1.5	95.0	9.8	0.75	28.1	56.8
Mean		10.9	5.0	97.8	10.9	0.47	30.4	56.9
CV%		16.1	86.9	7.3	57	137	9.4	2.01
LSD 0.05		2.6	6.3	NS	NS	NS	4.2	1.7

[1]Treatment applied on 23 Jun during Feekes Growth Stage 2.3
[2]I = Disease Incidence, S = Disease Severity, Evaluation Date 1 = 30 Jun and 2 = 27 Jul.
[3]Test wt and Yield are reported on a 12% moisture basis.