

Project Title: Fungicide Evaluation in Winter Wheat – 2012  
Project Leader: Bob Stougaard  
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Objective: To evaluate fungicides for stripe rust control and yield response in winter wheat.

Results:

Three registered broad spectrum fungicides (Stratego YLD, Prosaro 421 and Headline) were evaluated for their efficacy against stripe rust as well as their effect on grain yield and quality in “Norris” winter wheat.

Fungicide treatments were applied on June 3 when winter wheat was in the boot stage and flag leaf stripe rust infection averaged 10 percent. Treatments were applied with a CO<sub>2</sub> backpack sprayer in 20 GPA of water using 11002 flat fan nozzles. Plots measured 10 by 15 feet and the study was established as a randomized complete block design with three replications.

No crop injury was observed at one week after application. At one month after application, stripe rust infection ranged from a low of 11% to a high of 97 percent (Table 2). All fungicide treatments reduced stripe rust infection levels relative to the untreated check. There were no differences in control among fungicides on July 1, but by July 12, the high rate of Prosaro provided significantly better control compared to the low rate of Stratego YLD.

Yields ranged from a low of 51 bu/A for the untreated control, to a high of 100 bu/A for the low rate of Prosaro 421. All fungicides improved yields relative to the untreated check. When making comparisons among the fungicide treatments, grain yields were significantly lower for the high rate of Prosaro and the low rate of Stratego YLD. As yields increased, protein content decreased. As a consequence the highest protein content was found with the untreated control. All fungicide treatments improved test weight and thousand kernels weight as compared to the untreated control, but there were no significant differences in falling number values among any of the treatments.

Table 1. Material and Methods - Fungicide evaluation in winter wheat

Seeding Date: 09/15/2011	Soil Type: Creston SiL	Harvest Date: 08/07/2012
Seeding Rate: 85 lb/A	Soil Test: 174-48-268-120	
Previous Crop: Fallow	Fertilizer: PP 10-35-90-8.5-0.85/TD 100-0-0	
Tillage: Conventional	Herbicide: 1.7 pt/A Wolverine	
Irrigation: None	Insecticide: None	

Table 2. Effect of fungicides on stripe rust control and yield in winter wheat, Kalispell MT 2012

Treatment	Rate	CI %	SR 7/1	SR 7/12	Yield bu/A	Protein %	TWT lb/bu	TKW g	FN sec
Untreated		0	97	97	51	13.9	49	26	409
Stratego YLD	2 FL OZ/A	0	22	43	82	12.7	57	34	369
Stratego YLD	4 FL OZ/A	0	20	33	91	12.5	59	37	383
Prosaro 421	5 FL OZ/A	0	28	28	100	12.1	57	39	388
Prosaro 421	6.5 FL OZ/A	0	11	17	89	12.6	59	37	392
Headline	6 FL OZ/A	0	25	35	91	12.7	58	37	378
Mean		0	34	42	84	12.7	56	35	387
CV		0	29.29	29.27	6.05	2.62	3.94	4.47	6.20
LSD		0	18.3	22.4	9.2	0.6	4.0	2.8	43.6
Pr>F		1	0.0001	0.0002	0.0001	0.0013	0.0018	0.0001	0.4689

CI: crop injury, SR: stripe rust, TWT: test weight, TKW: thousand kernel weight, FN: falling numbers