

2009 Barley Fungicide X Variety Trial
North Central Research Extension Center – Minot, ND
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Objective:

This trial was conducted to evaluate agronomic performance of selected barley varieties as affected by a fungicide program consisting of an early-season and late-season application.

Trial Description:

The trial was located on the North Central Research Extension Center south of Minot, ND. Eight barley varieties were sown on May 12th into wheat stubble that had 217 pounds/acre urea spread and chisel plowed the fall prior to seeding. Each variety was sown at 1.2 million PLS/acre using a plot-drill with double disc openers on six inch spacing. Two plots were sown for each variety, one plot to receive fungicide treatment and one to be left untreated. Plots were 5 feet wide by 16 feet long and treatments were replicated three times. On June 13th the crop had reached the 4 leaf stage and untreated plots received Wolverine at 1.7 pt/acre for weed control and fungicide treated plots received 1.7 pt/acre Wolverine + 3 fl oz/acre Propimax. Herbicides and early-season fungicide treatments were applied with a CO₂ pressurized tractor-mounted sprayer calibrated to deliver 10 gallons/acre through flat fan nozzles. Fungicide plots were treated with 6.5 fl oz/acre of Prosaro when they reached 50 percent heading. The Prosaro treatments were delivered through a CO₂ pressurized hand-held boom calibrated to deliver 20 gallons/acre through twin jet nozzles. The trial was harvested with a plot combine on August 19th.

Results/Discussion:

Excellent growing conditions promoted crop growth and development and resulted in very good yields. Some wild oat competition and establishment problems related to trash clearance added variability to the trial. Disease levels were very low with little early season leaf spot or blotch and fusarium head blight was nearly absent. Visual evaluation of leaf disease at early heading showed no statistical difference between fungicide treated and non-treated plots (P=0.05). However, there was a trend for lower levels of flag leaf necrosis in fungicide treatments with overall necrosis levels being 20% in non-treated plots and 5% in fungicide treatments averaged across varieties. A statistically significant yield difference between fungicide and non-fungicide treatments could not be detected for individual varieties or the average across all varieties. However, there does appear to be a trend for positive response to the fungicide treatments in five of the eight varieties. Test weight, percent plump, and protein content were not affected by fungicide applications. Statistical differences for yield and other agronomic parameters were detected between varieties when analyzed across fungicide and no fungicide treatments.

Variety	Yield				Agronomics					
	No Fungicide	Fungicide	Combined		Test Weight		Protein		Height	
	Bu/acre	Bu/acre	Bu/acre	Rank	lb/bu	Rank	%	Rank	Inches	Rank
PINNACLE	110.8	116.6	113.7	1	44.0	7	11.8	1	25.1	7
CDC COPELAND	107.0	116.5	111.8	2	44.0	8	12.4	3	28.1	1
TRADITION	101.2	107.2	104.2	3	47.4	2	13.0	7	27.0	2
RASMUSSEN	104.8	102.7	103.8	4	46.1	5	12.7	5	25.3	6
CELEBRATION	98.8	104.6	101.7	5	46.3	4	13.9	8	26.8	4
CONLON	99.2	102.6	100.9	6	48.1	1	12.4	2	23.6	8
LACEY	100.7	98.5	99.6	7	46.4	3	13.0	6	26.0	5
STELLAR-ND	100.5	98.2	99.4	8	45.0	6	12.6	4	26.9	3
Average	102.9	105.9	104.4		45.9		12.7		26.1	
LSD(P = 0.05)	NS		9.8		1.4		0.5		2.3	
CV	9.1				3.2		3.7		6.4	

Soil test: (N),(S) @ 0-6",6-24"=(27,93),(10,873)lb/a; (P),(K) @ 0-6"= (13),(360)ppm, O.M.=3.4%, pH = 5.6.