

Project Title: Agronomic Performance Evaluation of Intrastate Winter Wheat Cultivars

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Objectives: To evaluate the agronomic performance of winter wheat cultivars in environments and cropping systems representative of northwestern Montana.

Results:

Adequate soil moisture at planting resulted in good stands. However, low winter temperatures and dry spring conditions resulted in reduced tillering. These abiotic stress factors cause winter wheat to head earlier, and also reduced plant height compared to last year. Most importantly, stripe rust resurfaced during 2006. Percent infection ranged from 0 for Willow Creek to 96% for MTW01133. The combination of stripe rust and poor tillering contributed to low yields in 2006. Yields ranged from 35 bu/ac for MTW01133 to 83 bu/ac for Bauermeister with an average of 59 bu/ac. Despite the severe stripe rust infection, test weight was much higher than previous years and ranged from 61.5 to 66.6 lb/bu. Grain protein average was 12.7% and ranged from 10.1 to 15.1%.

Summary:

Stripe rust resurfaced during 2006 and negatively impacted yields. Rampart, Promontory, and Yellowstone were resistant while NuSky, NuWest, MTW01133 and Paul were very susceptible.

Future Plans:

Continue winter wheat evaluations for the purpose of identifying those cultivars best suited for production in northwestern Montana.

Table 1. Agronomic data from the Intrastate Winter Wheat Nursery Grown at the Northwestern Agricultural Research Center, Kalispell MT in 2005-06.

Planted: September 22, 2005

Harvested: August 1, 2006

Entry	Cultivar	Yield	Test	Grain	Heading	Plant	Stripe	Protein
		bu/ac	weight lb/bu	moisture %	date Julian	height in	rust %	%
25	Bauermeister	83.6	64.0	11.2	155.3	31.0	5.0	11.1
20	Yellowstone	77.7	65.0	9.9	148.7	29.7	5.0	12.2
41	MT0495	75.9	65.2	9.7	148.3	28.5	4.7	13.4
38	Golden Spike	74.6	65.5	9.9	152.3	31.8	10.0	11.2
1	Rampart	73.9	66.3	9.4	147.7	33.6	5.0	13.7
26	MDM (HWW)	73.7	64.5	11.0	156.0	29.8	5.0	10.1
8	Pryor	71.1	65.9	10.2	151.3	26.2	11.7	12.4
9	Promontory	71.0	66.4	10.0	149.0	30.3	3.0	12.6
12	NuFrontier (HWW)	70.9	66.6	9.8	145.0	27.6	9.0	12.5
47	MT0419	69.1	65.1	10.0	150.7	28.5	8.3	12.3
40	Willow Creek (forage)	67.5	64.6	10.4	158.0	47.8	0.0	12.5
19	Genou	67.3	66.5	9.8	147.7	32.8	60.0	12.5
49	MTR0441	67.0	65.3	10.2	146.0	26.6	6.7	12.2
35	MT03176	66.1	64.2	10.0	146.0	29.0	5.0	13.4
31	Hatcher	66.1	65.5	9.9	144.0	25.9	13.3	12.7
30	Bond CL	65.7	65.3	9.7	142.0	29.0	80.0	12.0
16	Wahoo	64.9	64.5	9.7	144.7	29.0	43.3	12.1
44	MTCL0477	64.2	65.5	10.1	146.7	30.3	18.3	12.4
23	MT01148	64.1	64.7	10.2	152.0	30.4	6.7	13.8
3	Tiber	64.0	65.7	10.2	152.0	32.4	50.0	12.8
21	Ledger	62.6	65.5	9.7	145.0	27.3	16.7	11.9
45	MTCL0486	62.3	65.0	9.7	147.7	29.5	46.7	12.1
5	Rocky	61.6	65.9	9.9	144.7	33.3	53.3	13.2
2	Neeley	61.3	65.1	9.8	152.7	33.2	73.3	11.9
22	Millenium	61.0	65.3	10.1	146.3	28.9	23.3	12.5
43	MTS04120	60.4	66.3	9.9	148.3	31.1	21.7	12.3
29	BZ9W02-2060	60.1	65.6	9.5	147.0	26.9	25.0	13.6
34	MTCL0318 (CL)	59.0	66.0	9.3	144.7	30.1	6.7	14.7
13	Jagalene	58.7	65.8	10.0	144.7	27.4	4.0	14.0
48	MT0423	58.6	65.8	9.9	146.0	30.1	20.0	11.9
18	Jerry	57.4	64.6	10.2	149.3	29.7	18.3	12.9
7	CDC Falcon	56.9	66.4	9.7	146.7	25.1	43.3	11.8
27	MT1159CL (CL)	55.1	63.7	9.7	152.0	30.2	10.0	13.5
17	Above (CL)	54.2	64.2	9.7	142.0	28.1	86.7	11.8
33	MTCL0316 (CL)	53.9	66.0	9.7	145.0	29.3	50.0	12.7

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Table 1 (continued). Agronomic data from the Intrastate Winter Wheat Nursery Grown at the Northwestern Agricultural Research Center, Kalispell MT in 2005-06.

Planted: September 22, 2005

Harvested: August 1, 2006

Entry	Cultivar	Yield	Test weight	Grain moisture	Heading date	Plant height	Stripe rust	Protein
		bu/ac	lb/bu	%	Julian	in	%	%
39	Wendy (HWW)	53.7	64.5	9.8	142.0	25.1	8.0	15.1
42	MTS04114 (HWW)	53.6	64.7	10.0	148.0	26.2	5.7	13.9
37	CDC Buteo	52.2	65.7	9.8	150.7	31.0	43.3	13.2
28	MT02113	51.6	64.4	9.8	151.7	29.3	71.7	11.4
32	MTCL0306 (CL, HWW)	51.2	65.0	9.9	144.7	29.3	53.3	12.2
6	Vanguard	50.3	65.6	9.7	146.3	29.3	6.7	14.0
11	BigSky	45.0	64.7	9.8	150.0	32.2	80.0	13.0
46	MT0403	44.9	64.6	9.9	146.7	28.7	60.0	12.4
4	Morgan	44.3	64.4	9.7	153.0	31.0	60.0	12.8
36	AP 50W	43.7	64.0	9.7	142.0	23.9	5.7	13.5
15	Paul	39.3	63.2	9.8	148.3	25.6	75.0	12.9
10	NuWest (HWW)	37.0	61.5	9.9	150.0	30.1	80.0	12.7
14	NuSky (HWW)	36.6	62.6	10.0	150.0	29.3	70.0	12.0
24	MTW01133	35.5	63.3	9.9	144.0	25.3	93.3	12.4
Mean		59.6	65.0	9.9	148.0	29.5	31.9	12.7
C.V. (%)		15.49	0.98	2.10	0.66	6.11	29.36	
LSD (0.05)		14.96	1.04	0.34	1.58	2.92	15.17	

CL: Herbicide resistant winter wheat;
HWW: Hard white winter wheat.