

Project Title: Agronomic Performance Evaluation of Intrastate Winter Wheat Cultivars

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Objectives:

To evaluate new and existing winter wheat cultivars for agronomic performance and disease resistance in environments and cropping systems representative of northwestern Montana.

Results:

Adequate early season soil moisture and average temperatures resulted in good stands with high tiller numbers. Winter wheat headed one week later than last year. The average heading date was 155 days and ranged from 148 to 164 days. Plants were taller than last year, with an average plant height of 38 inches.

Although stripe rust was present, low rainfall and high temperatures during June and July prevented a major outbreak from occurring. Nonetheless, infection levels did allow for an assessment of susceptible cultivars. Of the materials evaluated, Ripper had the highest infection level of 63 percent, while those materials that had infection levels of 25 percent or greater included MT0585, MT0598, MT0565, and the forage wheat, FWW-25.

The lack of a major stripe rust outbreak resulted in grain yields that averaged 91 bu/ac compare to only 59 bu/ac last year. Grain yields ranged from 52 bu/ac for FWW-25 to 110 bu/ac for MT 0495. Although the high temperatures helped to suppress stripe rust, the same set of weather conditions resulted in low test weights. Test weights averaged 59 lb/bu and ranged from 51.1 to 62.8 lb/bu. Protein content ranged from 11.4% to 14.5% with an average of 12.7%.

Summary:

Overall, the 2006-07 growing season was favorable for winter wheat production, resulting in higher yields than the previous year. However, above average temperature during the late grain filling period hasten crop maturity, suppressed stripe rust infections and resulted in lower than average test weights. Wendy, Promontory, and Jagalene had excellent yields and test weights and appear to be well adapted to northwestern Montana.

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 2006-07 season.

Planted: September 18, 2006

Harvested: July 26, 2007

Cultivar	Yield	Test weight	Grain moisture	Heading date	Plant height	Lodging	Stripe rust	Protein
	bu/ac	lb/bu	%	Julian	in	%	%	%
MT0495	110.2	58.2	11.0	156.0	37.0	0.0	0.0	11.6
Wendy (HW)	106.0	61.4	11.8	149.7	31.8	0.0	1.7	13.5
CDC Falcon	104.1	57.5	9.4	155.7	33.5	0.0	3.7	12.7
Yellowstone	102.6	58.2	11.2	156.7	37.0	0.0	0.0	12.9
Promontory	102.5	62.4	11.2	155.3	37.3	0.0	0.3	12.3
Jagalene	101.4	62.8	12.2	153.3	36.1	0.0	0.0	12.7
NuDakota (HW)	100.6	59.8	11.0	152.0	31.6	0.0	0.0	13.5
Wahoo	100.2	57.3	11.4	152.7	34.8	0.0	3.7	12.1
MTS04114 (HW)	100.1	60.5	11.3	155.3	34.3	0.0	0.0	12.7
MTS0531 (HW)	100.0	60.4	12.2	155.0	36.4	0.0	0.0	12.3
Darrell	99.7	60.6	12.0	153.3	38.3	0.0	10.3	12.7
MTS0532 (HW)	99.5	60.1	11.6	155.0	36.6	0.0	0.3	12.3
Carter	99.2	58.7	10.2	155.7	32.5	0.0	2.7	12.8
Ledger	99.2	61.4	12.3	154.7	36.4	0.3	1.3	12.0
MT0419	98.2	58.4	10.7	156.0	37.5	0.0	2.3	12.7
Alice (HW)	96.3	60.0	11.4	150.7	32.7	0.0	1.3	13.7
MT0552	96.2	59.0	11.4	155.7	36.0	0.0	1.0	12.4
CDC Buteo	95.1	62.5	12.4	156.0	40.4	0.0	3.3	12.1
Rocky	95.1	61.2	12.2	155.0	44.0	0.0	14.0	11.7
Morgan	94.3	58.5	11.0	157.3	40.2	0.0	7.7	12.4
Bond CL	94.0	59.2	11.4	151.0	34.3	0.3	11.7	11.4
MTS04120	93.7	60.6	12.4	156.3	40.9	0.0	5.0	11.7
MT0585	93.4	57.8	9.6	153.7	37.9	0.0	25.0	12.7
WA007976	92.4	58.2	11.6	158.0	39.1	0.0	0.0	12.7
Hatcher	92.0	59.4	11.4	152.7	34.4	0.0	1.3	12.5
Tiber	91.7	60.6	11.6	156.7	43.2	0.0	3.7	13.5
MT0554	91.2	58.4	12.2	155.3	39.1	0.7	3.0	12.6
MTCL0477 (CL)	88.9	59.0	12.2	155.7	39.8	10.3	1.0	12.5
98x0435-15	88.6	62.0	11.8	148.3	30.6	0.0	0.0	13.8
Jerry	88.5	57.8	11.4	156.0	42.4	0.0	6.0	12.8
Pryor	88.3	58.6	11.4	156.3	32.0	0.0	4.0	12.6
Norris (CL)	88.1	59.6	10.2	152.7	39.9	0.0	16.0	12.4
Hyalite (HW) (CL)	87.6	59.2	11.2	153.3	38.1	0.0	17.7	12.0
BZ9W02-2051	87.2	58.6	11.6	156.3	37.1	0.0	16.7	11.6
MTCL0537	87.1	60.3	12.4	157.0	44.0	0.0	1.0	13.0

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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 2006-07 season.

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Cultivar	Yield	Test weight	Grain moisture	Heading date	Plant height	Lodging	Stripe rust	Protein
	bu/ac	lb/bu	%	Julian	in	%	%	%
Genou	86.8	59.5	12.2	155.7	39.9	0.3	4.3	12.9
Ripper	86.4	60.4	11.8	151.0	31.9	0.0	63.3	12.8
MT0598	85.5	54.3	9.0	156.7	41.3	0.0	29.7	13.1
Neeley	84.8	59.6	11.8	157.3	40.8	1.7	13.3	12.5
Vanguard	82.7	59.1	10.6	156.0	41.1	0.0	1.3	13.6
Rampart	81.6	59.3	11.2	156.3	40.2	0.0	0.0	13.8
Bynum (CL)	81.5	60.7	11.7	155.0	39.8	0.0	0.0	13.9
BigSky	80.9	59.4	10.8	155.3	43.0	1.7	12.3	13.3
MT1159CL (CL)	80.9	58.2	10.2	155.0	33.1	0.0	3.7	13.0
NuWest (HW)	80.2	58.3	11.2	156.3	40.6	0.0	15.0	12.4
MT0565	79.6	57.6	9.7	156.0	36.7	0.0	38.3	13.2
Willow Creek (F)	73.8	58.7	11.8	164.0	57.5	11.3	0.0	14.5
NuSky (HW)	73.1	58.7	11.6	156.7	40.8	0.0	19.3	11.7
FWW-25 (F)	52.9	51.1	10.0	159.3	53.3	53.3	30.7	13.0
Mean	91.1	59.2	11.3	155.1	38.3	1.6	8.1	12.7
C.V. (%)	6.9			0.4	3.4	336.8	125.6	
LSD (0.05)	10.2			1.0	2.1	8.9	16.5	

HW: Hard white winter wheat.
 CL: Herbicide resistant winter wheat;
 F: Forage wheat