

Project Title: Evaluation of Winter Wheat Experimental Lines - 2013

Project Leader: Bob Stougaard

Project Personnel: Brooke Bohannon, Phil Bruckner, and Jim Berg

Objective: To evaluate winter wheat varieties and experimental lines for agronomic performance in environments and cropping systems representative of northwestern Montana.

Results:

Stripe rust negatively affected winter wheat yield and quality (Table 2). As percent infection increased, grain yields and test weights decreased, while protein increased. Average days to heading was 158 (June 7) and ranged from 154 (June 3) to 162 (June 11). Plant height averaged 42 inches and ranged from 36.6 for Carter to 48.8 for Jerry. Lodging averaged 10 percent for the nursery. However, several cultivars lodged greater than 50% including Bynum, Rampart, and MTS0826-63. Yields averaged 97 bu/A with Promontory again yielding the highest at 138 bu/A and MTS0832 yielding the lowest at 17 bu/A. Test weights averaged 56 lb/bu and ranged from a high of 62.8 for promontory to a low of 38.2 for Bearpaw.

Summary:

Stripe rust resistance is the primary determinate of winter wheat yield and quality. Promontory and Yellowstone continue to be the top yielding cultivars.

Table 1. Material and Methods - Winter wheat intrastate - 2013

Seeding Date:	9/25/12	Fertilizer:	10-35-90-8.5-0.85/ TD 60-0-0
Julian Date:	269	Herbicide:	4/26/13 @ 3-4 tiller
Seeding Rate:	80 lb/A		Rimfire 3 OZ/A, Affinity TankMix
Previous Crop:	Peas		0.6 FL OZ/A, NIS 0.25%
Tillage:	Conventional		
Irrigation:	None	Harvest Date:	8/12/13
Soil Type:	Creston Sil	Julian Date:	224
Soil Test:	264-6-166		

Table 2. Agronomic date from the intrastate winter wheat nursery, Kalispell 2013

Cultivar	Stripe rust		HD	HT	LOD	YLD	PRO	TWT
	6/14	7/16	Julian	in	%	bu/A	%	lb/bu
Promontory	3.7	74.3	157	43.0	0.0	138.8	11.9	62.8
MT1117	1.0	23.3	160	43.3	6.3	132.6	11.7	61.2
MT1138	0.7	48.3	159	44.1	0.0	130.5	12.4	60.3
MT08172	2.3	40.0	161	42.4	0.0	128.3	13.1	59.9
MT0978	2.7	27.0	161	42.4	25.7	125.0	13.1	57.1
Yellowstone	2.3	75.7	160	43.7	0.0	124.6	12.4	59.2
MTW08168	3.7	70.0	161	45.7	46.3	122.1	11.8	58.3
Art	2.7	83.3	155	41.1	2.7	121.9	12.6	59.5
MTCL1131	1.3	36.7	159	44.5	1.3	121.7	12.0	59.6
Curlew	3.0	63.7	158	44.0	34.3	121.6	13.1	60.1
Robidoux	4.7	67.0	154	41.7	15.0	120.6	12.0	58.4
MTCL1077	6.0	85.0	160	43.6	0.0	118.0	12.0	59.6
Radiant	8.0	43.3	160	43.7	0.0	115.8	12.5	61.5
MTS0808	1.7	31.7	158	39.2	33.7	115.6	13.1	60.9
MT1092	3.7	87.3	160	42.8	0.0	115.6	11.4	58.8
MTS1024	10.3	93.0	159	37.5	0.0	115.5	12.6	57.1
SY Wolf	0.0	35.0	155	39.7	0.0	114.8	13.4	59.3
MT1108	2.0	91.7	158	42.2	3.3	113.7	11.7	58.9
MT1113	2.0	76.0	160	43.0	1.3	113.2	11.9	60.5
MT1091	8.0	90.0	158	41.4	0.0	112.8	13.1	55.5
MT1156	3.0	20.0	160	41.8	30.7	112.8	12.5	59.5
MT1090	6.3	80.0	158	43.6	0.0	111.5	12.3	57.5
WB-Quake	3.3	60.3	161	42.3	6.7	110.1	12.6	60.0
MT10116	14.0	85.0	161	41.1	1.0	107.9	12.4	58.7
Jagalene	8.7	55.0	157	40.7	1.3	107.6	12.9	59.0
Judee	6.3	30.0	159	39.1	31.0	107.0	12.2	57.4
MTS0826-63	3.3	51.7	162	39.9	54.3	106.8	13.6	61.0
MT1143	5.0	98.3	156	39.3	0.0	106.7	12.8	58.1
MT1078	9.0	95.0	159	40.1	0.0	106.5	13.6	53.7
MT1102	4.7	90.0	159	40.3	0.0	105.9	13.4	56.0
MT1105	4.7	91.3	159	42.1	1.3	104.6	12.3	58.0
Ledger	4.7	100.0	157	41.3	0.0	100.7	11.8	58.3
Broadview	21.7	100.0	161	38.4	0.0	88.7	13.1	48.8
Rampart	3.7	98.3	159	42.3	74.0	85.6	13.4	58.0
Bynum (CL)	3.7	100.0	157	44.8	66.0	85.6	13.3	59.3

HD: heading, HT: height, LOD: lodging, YLD: yield, PRO: protein, TWT: test weight

Table 2. continued

Cultivar	Stripe rust		HD	HT	LOD	YLD	PRO	TWT
	6/14	7/16	Julian	in	%	bu/A	%	lb/bu
Overland	12.0	100.0	156	44.7	0.0	79.0	12.9	53.1
McGill	32.3	100.0	154	42.9	0.0	77.5	11.8	55.4
CDC Falcon	19.3	100.0	158	39.2	1.3	76.9	12.4	56.2
Cowboy	13.7	100.0	157	39.8	0.0	72.5	12.7	51.5
Norris (CL)	12.3	100.0	155	46.2	0.0	72.2	13.4	55.7
MT1137	27.3	100.0	158	41.5	0.0	71.7	12.9	54.2
Accipiter	36.7	100.0	161	39.4	1.7	64.0	12.1	54.8
WB-Matlock	29.7	100.0	159	45.3	0.0	59.2	13.7	50.1
Genou	26.7	100.0	159	44.2	39.0	57.7	13.7	49.9
Bearpaw	32.3	100.0	157	39.8	15.7	54.9	16.4	38.2
Jerry	16.7	100.0	160	48.8	5.3	43.5	13.6	44.6
Decade	14.7	100.0	157	39.9	0.0	43.0	15.3	42.6
Carter	38.3	100.0	157	36.6	0.0	26.7	15.4	46.5
MTS0832	55.3	100.0	161	42.5	7.3	17.3	16.5	43.8
Mean	11.0	77.5	158.5	42.0	10.3	97.7	12.9	56.1
CV	85.2	14.1	0.6	3.2	163.7	13.0	0.0	0.0
LSD	15.2	17.7	1.5	2.2	27.4	20.5	0.0	0.0
Pr>F	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	1.000	1.000

HD: heading, HT: height, LOD: lodging, YLD: yield, PRO: protein, TWT: test weight