

Project Title: Agronomic Performance Evaluation of Intrastate Spring Barley Cultivars.

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Objectives:

To evaluate spring barley cultivars and experimental lines for agronomic performance in environments and cropping systems representative of northwestern Montana.

Results:

The 2005 season was ideal for barley growth and development. Temperature was near normal but precipitation was higher than average, particularly in June with a total of 8 inches. Wet conditions from booting to heading provided opportunities for disease infestation. Net blotch, scald and stripe rust were all observed in barley entries during grain filling. However, these diseases did not significantly affect yield and test weight. The average yield (138 bu/ac) was slightly higher than 2004 (130 bu/ac), ranging from 161.8 bu/ac for WB Xena to 118.6 bu/ac for Hays. Most entries yielded more than the check variety, Gallatin. Test weight was excellent and averaged 50.6 lb/bu. Only two entries (Tradition and Hays) had a test weight lower than 48 bu/ac. Grain plumpness was excellent and averaged 95%. Heading date (Julian 174) was later than previous year (169), ranging from Julian 170 to 182. Plant height averaged 34 inches and no lodging was observed. Grain protein was lower than previous year and averaged 11.4%.

Summary:

The 2005 season was ideal for barley growth and development. Most entries had high yields and excellent test weight. WB Xena, MT020262, MT030160, MT960101, MT030081 and YU501385 were top yielding entries (>150 bu/ac).

Future Plans:

Continue barley evaluations for the purpose of identifying cultivars best suited for District 1.

Table 1. Agronomic data from the Intrastate Spring Barley Nursery grown at the Northwestern Agricultural Research Center Kalispell, MT.

Planted: April 20, 2005

Harvested: August 23, 2005

Entry	Cultivar	Yield	Test weight	Grain moisture	heading date	Plant height	Plump	7/26/2005			Protein
								Net blotch	Scald	Stripe rust	
		bu/ac	lb/bu	%	Julian	in	%	0-4	0-3	0-3	%
5	WB Xena	161.8	50.9	13.7	175.8	36.4	95.4	2.0	0.7	0.3	10.54
40	MT020162	156.2	51.6	14.3	175.2	38.5	97.5	2.0	0.7	2.0	11.60
61	MT030160	155.0	50.6	14.2	175.7	33.9	88.9	2.0	1.3	0.0	11.71
22	MT960101	154.5	50.3	14.4	175.6	34.0	93.2	2.3	0.0	0.3	12.01
55	MT030081	154.0	51.8	14.2	173.9	36.1	96.1	3.0	0.0	1.0	10.02
17	YU501385	153.3	52.1	14.3	172.1	34.9	97.4	1.7	0.0	1.7	11.00
31	MT010081	149.3	51.6	14.0	174.3	37.2	96.2	2.3	0.0	0.0	11.49
35	MT010191	148.4	51.1	14.6	178.8	33.0	97.0	2.0	0.0	0.3	11.31
11	Merit	148.1	51.3	14.3	181.9	36.7	95.5	1.7	0.0	0.3	11.24
3	Eslick	147.6	49.5	14.0	174.8	29.6	90.8	2.0	0.0	0.7	10.90
57	MT030107	147.3	49.6	14.2	174.4	30.9	94.5	1.7	0.7	0.3	11.67
12	Conrad	146.7	50.3	14.7	173.8	32.7	96.4	2.0	0.7	0.0	12.17
21	MT910189	146.5	48.3	14.0	171.9	35.7	91.9	2.7	0.0	1.7	11.10
62	MT030168	145.5	50.2	14.6	175.5	34.3	90.4	1.7	0.0	0.0	12.13
60	MT030152	144.7	51.2	13.5	175.2	35.5	95.8	2.7	0.0	0.7	11.00
26	MT000040	144.4	51.9	14.2	173.5	33.6	98.1	2.3	0.0	0.0	12.59
51	MT030047	144.4	51.3	13.5	174.6	31.0	97.3	2.7	0.7	0.3	10.01
36	MT010212	144.1	51.1	13.8	174.4	33.5	96.8	2.3	0.0	1.0	11.20
28	MT000125	143.4	51.6	13.6	173.8	35.4	96.2	2.7	1.0	1.3	11.04
41	MT020166	143.3	50.6	13.8	173.1	32.6	95.3	2.3	0.7	0.0	10.60
25	MT981210	143.0	51.6	13.8	174.0	32.4	96.6	2.3	0.0	0.3	12.21
58	MT030137	142.8	51.0	14.2	173.4	31.4	95.4	2.0	0.0	1.0	12.15
4	Baronesse	142.7	50.1	14.8	174.3	31.2	96.8	2.7	0.0	0.0	11.54
42	MT020167	142.2	51.8	14.5	174.0	33.9	97.4	2.3	0.0	0.0	10.75
46	MT030035	141.6	50.2	13.7	174.5	33.6	94.9	2.0	0.0	0.7	10.26
63	MT030173	141.1	50.9	14.8	175.7	33.0	95.9	2.0	0.0	0.3	11.84
27	MT000047	141.0	50.6	13.7	173.5	35.8	92.9	2.3	0.0	0.0	11.37
18	P952R522	140.1	51.4	14.3	173.6	33.8	93.3	2.3	1.3	0.3	10.51
64	MT030188	139.7	51.0	13.9	173.2	35.6	97.1	2.7	0.0	1.0	11.53
45	MT030003	138.0	50.8	13.3	171.9	33.2	97.4	3.3	0.0	0.0	11.39
33	MT010160	137.8	52.0	14.1	174.2	35.7	96.6	2.3	0.0	0.0	11.54
52	MT030051	137.6	50.6	14.2	172.8	35.0	94.7	2.0	0.0	0.7	12.26
43	MT020204	137.6	51.0	14.1	173.1	34.2	93.8	2.3	0.0	1.3	11.22
13	Legacy	137.4	46.5	13.0	174.8	38.5	90.4	2.3	0.0	2.0	10.57
19	Marthe	137.4	48.7	13.8	181.3	33.1	95.0	2.7	0.0	0.3	11.23

Table 1 (Continued). Agronomic data from the Intrastate Spring Barley Nursery grown at the Northwestern Agricultural Research Center Kalispell, MT.

Planted: April 20, 2005

Harvested: August 23, 2005

Entry	Cultivar	Yield bu/ac	Test weight lb/bu	Grain moisture %	heading date Julian	Plant height in	Plump %	7/26/2005			Protein %
								Net blotch 0-4	Scald 0-3	Stripe rust 0-3	
7	Calgary		50.2	14.2	175.0	27.4	93.0	2.3	0.0	0.0	11.83
30	MT010080	136.5	51.3	14.4	172.8	35.6	96.2	2.7	1.0	0.0	11.88
14	Tradition	136.1	47.5	13.0	172.9	39.4	96.2	1.3	0.0	2.0	10.95
24	MT970229	136.1	51.3	15.1	175.2	33.3	97.7	2.3	1.0	0.0	11.76
29	MT000138	135.7	52.8	14.2	172.4	36.2	98.3	2.3	0.0	0.3	13.25
37	MT010213	135.4	51.3	15.6	174.9	30.8	96.0	2.7	0.0	1.7	12.62
49	MT030042	135.1	49.6	13.7	172.1	30.4	87.2	3.0	0.7	0.7	11.09
23	MT970116	134.9	52.2	14.2	172.8	38.7	95.5	2.7	0.0	0.7	10.94
54	MT030079	134.8	50.9	14.2	174.8	35.2	91.1	3.3	1.0	1.7	10.71
53	MT030063	134.6	52.0	14.6	175.2	36.7	98.2	2.0	0.0	1.0	11.40
15	Morex	134.0	48.0	12.8	172.1	41.6	91.8	3.0	0.0	0.7	12.95
8	Valier	133.9	51.7	15.5	177.9	35.4	97.2	1.7	0.0	0.3	11.88
39	MT020155	133.1	49.4	13.7	171.0	35.2	92.1	3.3	0.0	1.7	10.96
56	MT030093	132.4	50.3	14.4	175.4	31.2	95.6	2.0	0.7	0.7	10.98
44	MT020205	132.1	50.8	14.1	172.9	34.1	95.1	2.0	0.0	0.3	11.79
32	MT010158	131.8	51.3	14.1	173.4	32.8	96.2	3.0	1.0	0.3	12.43
50	MT030046	131.0	51.3	15.0	173.8	33.4	96.0	1.7	0.7	0.0	11.90
2	Gallatin	130.4	50.9	14.3	174.0	35.2	92.9	3.0	0.0	0.0	11.44
34	MT010162	130.1	51.8	14.3	175.3	33.1	95.4	1.7	0.7	0.0	11.33
59	MT030144	129.6	50.0	14.4	173.0	32.4	95.0	1.3	1.7	0.0	12.46
16	YU587432	129.3	50.1	14.2	172.8	32.9	95.6	3.0	0.0	0.3	11.23
1	Haxby	128.5	52.0	15.0	174.9	35.6	97.1	3.0	0.7	0.3	10.85
48	MT030039	128.4	50.5	14.2	170.1	30.4	94.0	2.7	0.0	0.0	11.27
47	MT030036	128.0	50.7	14.4	174.0	32.5	97.4	1.7	1.0	2.0	10.82
38	MT020064	127.7	52.7	14.2	173.5	33.7	98.5	2.7	0.0	0.0	11.41
10	Harrington	127.2	49.2	14.2	175.4	33.8	93.5	2.3	0.0	0.3	10.71
6	Boulder	127.0	50.4	15.0	174.6	31.7	96.8	3.0	0.7	0.7	12.02
20	Shakira	119.7	48.5	13.8	177.5	26.8	95.6	3.0	0.0	0.0	10.85
9	Hays	118.6	44.8	14.0	176.0	32.2	85.7	2.0	0.0	0.3	10.89
Mean		138.5	50.6	14.2	174.3	33.9	95.0	2.4	0.3	0.6	11.42
CV (%)		6.45			0.55	7.00		26.50	274	133	
LSD(0.05)		12.27			1.51	3.52		1.00	1.27	1.21	