Project Title: Intrastate Barley Evaluation

Project Leader: Bob Stougaard

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Objectives: To evaluate barley varieties and experimental lines for agronomic

performance in environments and cropping systems representative of

northwestern Montana.

Results:

The 2008 planting season was delayed due to weather conditions that were wetter and cooler than normal. By the May 8 planting date, only 114 GDDs (base 40° F) had accumulated as compared to 317 GDDs on the same date in 2007. Cool temperatures persisted throughout much of the growing season, which delayed plant development. The average heading date (Julian days) for the nursery was 189 as compared to 176 during 2007. Although cool temperatures may have delayed heading, this same set of conditions appeared to have suppressed foliar diseases and extended the grain filling period, benefiting yields in the process. Yields averaged 134 bu/A compared to 78 bu/A during the previous year. Yields ranged from a high of 174 bu/A for Goldeneye to a low of 71 bu/A for MT061246. Although MT061246 produced the lowest yields, the protein levels were the highest in the nursery - 16.5%. In contrast, MT061011 and MT061025 had the lowest protein (11.4%). Overall protein concentrations were less in 2008 compared to 2007, with mean protein percentages of 13.7 and 15.6, respectively. Test weights were higher than normal and averaged 52 lb/bu as compared to 50 lb/bu in 2007. Plant height was normal and averaged 32 inches, with Craft being the tallest entry at 36 inches. No lodging was detected.

## Summary:

Below normal temperatures delayed plant development and prolonged the grain filling period which enhanced yields and test weights. Goldeneye appears to have promise for this area of Montana.

## **Future Plans:**

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

Table 1. Agronomic data from the intrastate barley nursery grown at Kalispell, MT

Plante	d: May 8, 2008	Field Y7			ŀ	Harvested	d: August	29, 2008
Entry	Cultivar	Yield	Test	Grain	Heading	Plant	Plump	Protein
			weight	Moist.		height		
		bu/ac	lb/bu	%	Julian	in	%	%
0	COLDENEVE	470.0	40.7	4.4.4	407.0	22.5	00.4	14.4
6	GOLDENEYE	173.9	48.7	14.4	187.0	32.5	92.4	
59	MT061240	152.2	52.0	14.0	189.3	33.4	93.1	14.2
35	MT050062	152.1	53.0	14.7	189.3	35.3	97.1	12.7
33	MT050049	151.7	54.8	15.6	188.0	33.7	97.5	12.8
22	MT040024	151.0	52.6	14.2	188.3	28.9	95.5	13.0
30	MT050030	149.0	52.7	15.4	189.0	32.6	99.3	12.9
1	Aquila	148.5	50.0	14.1	187.7	33.6	95.6	13.7
29	MT040226	147.3	54.3	13.7	188.0	34.2	92.5	13.8
31	MT050035	147.0	53.0	14.5	190.7	33.9	99.3	13.4
27	MT040209	146.0	52.2	18.1	190.0	30.8	94.2	13.0
50	MT061058	145.7	53.4	16.2	189.0	35.0	97.9	13.7
47	MT061051	145.5	51.8	13.9	190.7	32.3	96.5	14.5
23	MT040073	144.9	53.9	14.5	189.3	32.4	95.6	14.1
4	Champion	144.8	52.4	14.5	188.7	35.0	96.5	14.5
34	MT050050	144.8	53.3	14.3	187.7	32.9	96.7	13.8
52	MT061104	144.4	52.0	14.5	189.7	33.4	97.7	14.3
18	MT030063	144.2	53.9	15.0	190.3	35.4	99.2	13.0
21	MT040013	143.6	53.4	15.2	189.7	33.1	97.9	12.8
26	MT040204	142.3	52.1	15.2	192.0	31.8	97.1	12.7
17	MT030042	141.4	53.8	15.4	189.7	29.9	96.4	12.2
19	MT030079	141.3	53.0	14.1	188.7	33.0	91.6	14.7
5	Conrad	141.3	52.8	14.7	190.3	31.0	92.0	13.3
32	MT050048	141.1	53.2	15.0	189.0	34.7	98.3	14.3
62	Tradition	141.1	51.5	14.1	187.7	34.7	98.7	13.5
9	Eslick	139.4	51.1	16.0	189.7	28.6	89.9	12.8
42	MT061035	139.0	51.7	14.2	190.7	30.2	96.1	14.8
8	Geraldine	138.3	51.9	15.3	191.3	30.8	93.6	13.7
20	MT030137	137.4	53.0	14.6	188.3	29.7	97.9	13.8
55	MT061169	136.2	52.8	14.7	190.0	31.7	96.2	15.1
15	MT020162	135.6	52.6	15.4	189.7	33.9	97.5	14.1
57	MT061207	134.9	53.1	14.2	187.3	33.1	97.7	13.7
40	MT061032	134.8	52.4	14.6	190.7	31.2	98.7	13.3
64	2B992657	133.8	47.1	14.7	191.0	33.2	85.7	14.6
7	Haxby	133.1	53.7	14.4	187.7	32.1	91.7	14.0
63	2B992316	132.9	52.8	14.5	189.0	32.4	93.8	12.0

Table 1. Continued

10 Craft 49 MT06 46 MT06 12 MT01 3 Bould 61 MT06 36 MT05 38 MT06 41 MT06 44 MT06 44 MT06 48 MT06 13 MT01 25 MT04 53 MT06 37 MT06 24 MT04 11 Hocke 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06	bu/ 51042 131 51054 131 51048 131 10158 130	weig ac lb/b 1.6 52.8 1.2 54.7 1.0 52.8 1.0 51.8 0.9 52.3 0.9 52.3 0.3 53.3 3.8 48.0 7.4 52.8 7.3 53.0	ht Moist u %  14.8 1 15.2 3 15.3 3 13.6 5 14.8 3 14.5 1 14.7 0 15.0 3 14.9 3 16.2 0 14.9	Julian  190.3 187.7 190.3 189.7 188.3 190.0 189.3 186.7 187.3 191.3 189.3	height in  32.4 36.3 30.9 30.1 32.1 30.0 30.5 35.9 29.2 30.1	99.0 98.4 98.9 95.9 95.3 97.4 98.8 94.1 97.9 98.1	96 13.8 13.9 13.5 14.2 15.0 15.1 14.7 14.9 11.4 14.1 12.9
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10 Craft 49 MT06 46 MT06 12 MT01 3 Bould 61 MT06 36 MT05 38 MT06 41 MT06 44 MT06 44 MT06 48 MT06 13 MT01 25 MT04 53 MT06 37 MT06 24 MT04 11 Hocke 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06	51042 131 131 51054 131 51048 131 10158 130 der 130 51248 130 50201 129 51025 128 51034 128 nesse 127	1.6 52.8 1.2 54.1 1.0 52.8 1.0 51.8 0.9 52.3 0.3 53.3 0.3 52.3 3.8 48.0 7.4 52.8 7.3 53.0	5 14.8 1 15.2 3 15.3 3 13.7 3 13.6 5 14.8 3 14.5 1 14.7 0 15.0 3 14.9 3 16.2	190.3 187.7 190.3 189.7 188.3 190.0 189.3 186.7 187.3 191.3	32.4 36.3 30.9 30.1 32.1 30.0 30.5 35.9 29.2 30.1	99.0 98.4 98.9 95.9 95.3 97.4 98.8 94.1 97.9	13.8 13.9 13.5 14.2 15.0 15.1 14.7 14.9 11.4
10 Craft 49 MT06 46 MT06 12 MT01 3 Bould 61 MT06 36 MT05 38 MT06 41 MT06 44 MT06 44 MT06 48 MT06 13 MT01 25 MT04 53 MT06 37 MT06 24 MT04 11 Hocke 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06	131 51054 131 51048 131 10158 130 der 130 51248 130 50201 129 51025 128 51034 128 nesse 127	1.2 54.7 1.0 52.8 1.0 51.8 1.0 51.8 1.0 51.8 1.0 52.3 1.3 53.3 1.3 52.7 1.4 52.8 1.4 52.8 1.4 52.8 1.5 53.0	1 15.2 3 15.3 3 13.7 3 13.6 5 14.8 3 14.7 0 15.0 3 14.9 3 16.2 0 14.9	187.7 190.3 189.7 188.3 190.0 189.3 186.7 187.3 191.3	36.3 30.9 30.1 32.1 30.0 30.5 35.9 29.2 30.1	98.4 98.9 95.9 95.3 97.4 98.8 94.1 97.9 98.1	13.9 13.5 14.2 15.0 15.1 14.7 14.9 11.4
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49 MT06 46 MT06 12 MT01 3 Bould 61 MT06 38 MT06 41 MT06 2 Baror 45 MT06 44 MT06 48 MT06 13 MT01 25 MT04 53 MT06 37 MT06 24 MT04 11 Hocke 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06	51054 131 51048 131 10158 130 der 130 51248 130 50201 129 51025 128 51034 128 nesse 127 51047 127	1.0 52.8 1.0 51.8 1.0 51.8 1.0 52.3 1.0 52	3 15.3 3 13.7 3 13.6 5 14.8 3 14.5 1 14.7 0 15.0 3 14.9 3 16.2	190.3 189.7 188.3 190.0 189.3 186.7 187.3 191.3	30.9 30.1 32.1 30.0 30.5 35.9 29.2 30.1	98.9 95.9 95.3 97.4 98.8 94.1 97.9 98.1	13.5 14.2 15.0 15.1 14.7 14.9 11.4
46 MT06 12 MT01 3 Bould 61 MT06 36 MT05 38 MT06 41 MT06 4 MT06 44 MT06 48 MT06 43 MT06 37 MT06 37 MT06 24 MT06 11 Hocke 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06	51048 131 10158 130 der 130 51248 130 50201 129 51025 128 51034 128 nesse 127	51.8 0.9 52.3 0.9 52.4 0.3 53.3 0.3 52.7 3.8 48.0 52.4 52.3 7.4 52.8 7.3 53.0	3 13.7 3 13.6 5 14.8 3 14.5 1 14.7 0 15.0 3 14.9 3 16.2 0 14.9	189.7 188.3 190.0 189.3 186.7 187.3 191.3	30.1 32.1 30.0 30.5 35.9 29.2 30.1	95.9 95.3 97.4 98.8 94.1 97.9 98.1	14.2 15.0 15.1 14.7 14.9 11.4
12 MT01 3 Bould 61 MT06 36 MT06 38 MT06 41 MT06 2 Baror 45 MT06 44 MT06 48 MT06 13 MT01 25 MT04 53 MT06 37 MT06 24 MT04 11 Hock 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06	10158 130 der 130 61248 130 60201 129 61025 128 61034 128 nesse 127 61047 127	0.9     52.3       0.9     52.8       0.3     53.3       0.3     52.7       3.8     48.0       7.4     52.8       7.3     53.0	3 13.6 5 14.8 3 14.5 1 14.7 0 15.0 3 14.9 3 16.2 0 14.9	188.3 190.0 189.3 186.7 187.3 191.3	32.1 30.0 30.5 35.9 29.2 30.1	95.3 97.4 98.8 94.1 97.9 98.1	15.0 15.1 14.7 14.9 11.4 14.1
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25 MT04 53 MT06 37 MT06 24 MT04 11 Hock 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06						97.9	13.8
53 MT06 37 MT06 24 MT04 11 Hock 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06						91.4	13.5
37 MT06 24 MT04 11 Hocke 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06						94.2	13.6
24 MT04 11 Hock 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06						97.6	14.0
11 Hock 28 MT04 14 MT02 54 MT06 16 MT02 39 MT06						97.0	11.4
28 MT04 14 MT02 54 MT06 16 MT02 39 MT06	40130 123	3.8 53.5	5 15.2	192.0	30.8	98.8	14.0
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	20204 120	).9 52.8	3 14.4	189.0	31.5	97.1	15.1
58 MT06	61026 119					97.9	11.8
	61225 119	9.3 53.8	3 15.1	187.7	31.6	98.8	13.1
51 MT06	61100 118	3.9 51.7	7 14.3	190.7	28.8	97.3	14.0
		2.7 53.0	14.5	188.0	33.4	98.1	14.2
60 MT06	61201 112	.5 52.5	5 14.6	188.3	32.1	99.5	16.5
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