

PROJECT TITLE: **Statewide Barley Performance**

YEAR: **2005**

LOCATIONS:

Bozeman - irrigated and dryland  
Conrad - irrigated and dryland  
Havre - dryland  
Huntley - irrigated and dryland  
Kalispell - irrigated  
Moccasin - dryland  
Sidney - irrigated and dryland

PERSONNEL:

Bozeman: Tom Blake (Project Leader) & Pat Hensleigh  
Conrad: Greg Kushnak  
Havre: Gregg Carlson  
Huntley: Ken Kephart  
Kalispell: Bob Stougaard  
Moccasin: Dave Wichman  
Sidney: Joyce Eckhoff

RESULTS:

The statewide (Intrastate) Barley Variety Nursery was grown at the seven locations listed above, with some locations having both irrigated and dryland nurseries. Tables 1 and 8 summarize statewide averages for all traits. Specific performance traits at each location can be found in Tables 2-7 for dryland and Tables 9-14 for irrigated.

In the **dryland trials**, the 2-row feed variety 'Haxby' had the highest test weight of all entries and was among the highest for yield (Table 1). The 2-row experimental malt-barley lines MT910189 and MT970116 had substantially higher yields, test weights and plumps than 'Harrington', and were nearly three days earlier to head. Malt status of MT910189 and MT970116 is pending the final round of plant-scale tests, and if approved, the two lines would increase the success rate of **dryland malt** production.

In the **irrigated** trials, 'Eslick', 'Spaulding' and 'Xena' were the highest yielding 2-row feed varieties (Table 8). Eslick, 'Calgary', 'Marthe' and 'Shakira' had the shortest straw. The 2-row malt variety 'Conrad' had the highest yield among the malt varieties, and was above average for test weight and percent plump.

Future Plans: MAES will continue to evaluate barley lines and varieties in Intrastate Trials .

**Table 1. 2005 Montana Dryland Intrastate Barley Summary – All Traits**

ID	PEDIGREE	Yield bu/ac	Test Weight lb/bu	Plump %	Heading Date	Plant Height inches	Protein %
YU501385	Baronesse/Camas	<b>85.2**</b>	<b>50.9*</b>	60.3	177.8	32.3	<b>13.4**</b>
MT030063	MT950155/Harrington	<b>83.2*</b>	<b>51.2*</b>	<b>72.6*</b>	180.3	32.7	<b>14.0*</b>
MT020155	MT960225/H1851195	<b>81.6*</b>	48.8	65.2	<b>174.5**</b>	33.9	14.3
MT020205	MTLB 32/H1851195	<b>81.3*</b>	49.3	67.0	177.5	34.1	15.6
MT020064	MT910160/H1851195	<b>81.1*</b>	50.0	<b>81.1*</b>	178.2	32.5	15.1
MT030081	MT950186/MT960226	<b>80.8*</b>	49.5	61.1	178.2	31.7	<b>13.9*</b>
MT030079	MT950186/MT960225	<b>80.4*</b>	<b>50.9*</b>	59.5	178.9	32.0	<b>13.9*</b>
MT020204	MTLB 32/H1851195	<b>80.3*</b>	49.6	65.0	177.2	32.6	15.2
MT020162	MT960225/H1851195	<b>80.1*</b>	50.3	<b>75.0*</b>	179.3	33.3	14.6
MT020167	MT960225/H3860224	80.0	50.1	<b>78.0*</b>	180.0	32.3	14.9
P952R522	<b>Spaulding</b>	79.9	49.5	52.1	178.6	31.3	<b>13.4*</b>
MT030153	MTLB 5/MT940053	79.6	<b>50.9*</b>	65.3	177.3	32.1	15.2
MT030107	MT960101/MT960225	79.3	48.1	52.5	180.0	28.2	14.4
MT950186	<b>Haxby</b>	79.2	<b>51.6**</b>	66.6	177.8	32.3	14.2
BZ596117	<b>Boulder</b>	79.1	<b>50.5*</b>	69.8	181.5	30.3	14.6
MT970229	MT890021/Stark	79.0	<b>50.4*</b>	<b>80.1*</b>	180.3	31.6	14.7
MT030035	Logan/MT960099	78.9	46.9	65.8	179.9	31.6	<b>14.0*</b>
MT000047	Chinook/MT920161	78.7	48.8	63.5	177.6	32.3	15.0
MT020166	MT960225/H3860224	78.6	48.8	67.8	180.4	31.1	14.2
MT010081	MT886610/H1851195	78.2	48.8	59.2	177.8	32.5	15.6
MT030042	MT910189/MT960099	78.0	50.2	50.2	178.6	28.9	<b>14.1*</b>
MT030144	MTLB 5/Harrington	78.0	50.2	69.3	179.7	31.5	14.7
MT010080	MT886610/H1851195	78.0	49.0	67.5	177.5	32.5	15.4
MT030137	MTLB 2/MT940053	77.5	50.3	66.2	178.4	31.1	15.2
MT000040	Chinook/MT920161	77.4	50.3	62.8	178.8	31.0	15.1
MT981210	MT910150/Stark	77.3	48.8	69.1	179.8	32.6	15.2
<b>MT910189</b>	ND 7293/Bearpaw	77.2	49.9	67.9	177.0	32.1	<b>14.0*</b>
MT030173	MTLB 5/Manley	77.1	48.7	54.8	181.4	30.2	14.7
MT030051	MT910189/MTLB 06	77.1	50.0	59.3	178.3	31.6	15.1
YU587432	Baronesse/ORCA	77.0	48.7	51.3	177.8	29.8	14.3
MT000138	MT920041/H1851195	76.9	<b>50.8*</b>	<b>82.4**</b>	<b>176.4*</b>	33.6	15.2
MT030039	Logan/MT960101	76.6	50.0	<b>73.3*</b>	<b>174.7*</b>	31.2	14.3
MT030047	MT910189/MT960101	76.4	48.1	57.2	180.7	28.8	<b>14.0*</b>
MT010213	MT920073/Logan	76.4	<b>50.4*</b>	70.1	180.6	29.6	15.4
MT010160	MT920041/Harrington	76.3	48.0	63.2	178.7	32.1	15.4
MT030168	MTLB 5/MT960101	76.2	49.0	43.6	181.5	30.4	15.0
MT030188	MTLB 13/MT950102	76.2	49.7	64.3	178.9	31.5	15.0
BZ594-19	<b>WB Xena</b>	76.1	48.5	51.4	180.4	32.0	<b>14.0*</b>
MT000125	MT910189/Lewis	76.0	<b>50.4*</b>	68.4	180.2	31.4	14.6
<b>MT970116</b>	Klages/Baronesse	75.9	50.2	70.0	177.2	35.6	14.6
MT010212	MT920073/Baronesse	75.9	47.2	59.6	179.4	31.7	14.7

continued

<b>Table1 Dry Bly, All Traits continued:</b>		Yield	Test Wt	Plump	Heading	Height	Protein
PI491534	<b>Gallatin</b>	75.9	49.5	63.2	177.0	33.2	15.0
2B965057	<b>Conrad</b>	75.9	47.8	65.6	182.1	30.4	15.1
MT960228	<b>Eslick</b>	75.8	47.8	35.3	182.5	29.1	15.1
MT030003	Harrington/MT950102	75.7	48.6	<b>78.3*</b>	<b>176.0*</b>	32.8	14.5
MT030036	Logan/MT960099	75.5	48.9	69.4	178.9	28.6	14.7
MT030152	MTLB 5/MT940053	75.3	48.7	45.8	180.3	32.5	14.9
PI568246	<b>Baronesse</b>	75.2	47.3	53.3	182.2	29.8	14.9
PI610264	<b>Valier</b>	74.6	49.1	45.6	180.7	31.7	15.3
MT030182	MTLB 6/MT960222	74.6	48.6	55.1	180.3	29.7	15.6
MT010158	MT920041/Harrington	73.7	48.9	<b>78.9*</b>	179.3	31.0	14.9
MT030093	MT960099/Harrington	73.2	48.0	56.7	182.0	30.5	14.7
MT981060	<b>Hays - forage type</b>	73.1	45.2	49.4	182.9	30.1	15.2
<b>MT960101</b>	Manley/Baronesse	72.9	47.3	40.9	182.7	29.7	15.2
6B952482	<b>Tradition</b>	72.1	46.8	46.5	<b>176.2*</b>	33.8	14.9
MT030160	MTLB 5/MT950155	71.9	47.3	36.7	180.4	29.8	15.3
MT010162	MT920041/Harrington	71.9	46.9	43.9	181.4	30.1	15.6
MT030046	MT910189/MT960101	71.3	50.0	50.9	182.2	31.9	14.8
MT010191	MT920053/Harrington	71.2	46.6	58.9	183.0	31.1	15.8
99373119	<b>Shakira</b>	70.3	46.8	58.3	182.6	<b>25.7**</b>	14.7
SK 76333	<b>Harrington</b>	69.4	45.8	56.2	179.7	30.3	15.0
NORD2125	<b>Marthe</b>	69.4	46.6	64.8	183.8	<b>27.2*</b>	15.1
2B914947	<b>Merit</b>	69.4	44.8	48.0	182.4	30.8	15.5
6B932978	<b>Legacy</b>	64.3	44.0	39.8	<b>176.4*</b>	34.3	14.5
Mean	MEAN	76.4	48.8	60.8	179.4	31.3	14.8
C.V.	C.V. (S/Mean) * 100	5.98	2.27	15.80	0.95	4.84	4.24
P-Value		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
L.S.D.	L.S.D. (.05)	5.19	1.26	10.91	1.94	1.72	0.71

\*\* indicates entries with highest yield, test weight, plump, earliest heading date and lowest protein within a column.

\* indicates entries equal to highest entry

**Table 2. 2005 Montana Dryland Intrastate Barley – Yield (bu/a)**

ID	Pedigree	Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
YU501385	Baronesse/Camas	92.1	75.5	56.8	83.9	92.2	110.6	85.2	1.07	0.88
MT030063	MT950155/Harrington	102.6	66.5	56.6	73.6	96.3	103.6	83.2	1.14	0.81
MT020155	MT960225/H1851195	87.9	79.0	48.2	75.9	94.6	103.8	81.6	1.20	0.98
MT020205	MTLB 32/H1851195	87.4	81.2	49.6	70.9	97.9	100.7	81.3	1.18	0.98
MT020064	MT910160/H1851195	92.1	66.7	50.8	77.6	101.8	97.7	81.1	1.18	0.90
MT030081	MT950186/MT960226	92.5	74.0	57.8	72.6	86.2	102.0	80.8	0.93	0.87
MT030079	MT950186/MT960225	86.5	74.1	57.9	76.0	92.4	95.7	80.4	0.87	0.98
MT020204	MTLB 32/H1851195	84.4	78.7	54.2	73.1	98.5	92.7	80.3	0.97	0.96
MT020162	MT960225/H1851195	83.0	74.1	52.7	83.0	87.4	100.7	80.1	0.94	0.88
MT020167	MT960225/H3860224	90.0	72.9	54.3	71.8	95.2	95.6	80.0	1.01	0.96
P952R522	<b>Spaulding</b>	90.0	74.7	50.9	68.6	93.2	101.8	79.9	1.16	0.97
MT030153	MTLB 5/MT940053	83.3	80.0	51.7	70.4	93.8	98.6	79.6	1.06	0.99
MT030107	MT960101/MT960225	86.6	71.6	53.0	71.3	97.7	95.7	79.3	1.06	0.97
MT950186	<b>Haxby</b>	84.2	72.1	50.0	75.2	94.5	99.3	79.2	1.11	0.99
BZ596117	<b>Boulder</b>	91.8	65.6	57.0	70.5	93.5	96.3	79.1	0.98	0.86
MT970229	MT890021/Stark	82.1	70.5	51.8	78.9	88.0	102.6	79.0	1.02	0.90
MT030035	Logan/MT960099	80.2	78.6	55.0	63.9	99.0	96.7	78.9	1.05	0.92
MT000047	Chinook/MT920161	87.5	76.5	52.2	66.9	90.2	99.2	78.7	1.06	0.96
MT020166	MT960225/H3860224	78.1	81.5	54.6	75.7	94.7	86.7	78.6	0.79	0.86
MT010081	MT886610/H1851195	88.8	82.9	45.0	67.8	90.6	94.2	78.2	1.12	0.91
MT030042	MT910189/MT960099	87.2	80.7	47.1	65.6	91.9	95.4	78.0	1.12	0.94
MT030144	MTLB 5/Harrington	79.9	70.5	49.9	76.3	95.1	96.4	78.0	1.06	0.96
MT010080	MT886610/H1851195	82.2	73.6	50.5	76.2	86.2	99.6	78.0	0.99	0.94
MT030137	MTLB 2/MT940053	81.5	74.4	52.2	71.2	89.2	96.7	77.5	0.97	0.99
MT000040	Chinook/MT920161	81.6	78.8	44.6	75.0	87.4	97.3	77.4	1.09	0.94
MT981210	MT910150/Stark	75.6	76.8	52.8	72.4	90.5	95.6	77.3	0.93	0.96
<b>MT910189</b>	ND 7293/Bearpaw	82.1	70.7	45.8	70.9	98.2	95.7	77.2	1.21	0.99
MT030173	MTLB 5/Manley	77.3	71.2	52.1	76.1	90.0	95.7	77.1	0.94	0.95
MT030051	MT910189/MTLB 06	84.1	70.8	46.9	69.2	93.4	98.5	77.1	1.18	0.99
YU587432	Baronesse/ORCA	82.4	73.0	51.6	69.6	89.2	96.1	77.0	0.99	0.99
MT000138	MT920041/H1851195	81.5	72.3	49.3	76.4	87.5	94.6	76.9	0.96	0.95
MT030039	Logan/MT960101	89.5	66.8	48.9	71.5	87.8	95.3	76.6	1.05	0.91
MT030047	MT910189/MT960101	76.1	73.0	54.5	64.6	91.1	98.9	76.4	1.00	0.94
MT010213	MT920073/Logan	83.0	72.9	51.5	75.0	84.9	91.0	76.4	0.85	0.95
MT010160	MT920041/Harrington	76.4	77.9	47.8	66.0	97.3	92.6	76.3	1.10	0.94
MT030168	MTLB 5/MT960101	69.5	74.3	55.9	70.2	98.2	89.1	76.2	0.86	0.82
MT030188	MTLB 13/MT950102	79.6	74.5	55.9	68.7	93.4	85.2	76.2	0.79	0.92
BZ594-19	<b>WB Xena</b>	75.3	74.5	51.8	67.4	92.1	95.4	76.1	1.00	0.97
MT000125	MT910189/Lewis	79.6	72.0	46.5	67.3	95.0	95.3	76.0	1.16	1.00
<b>MT970116</b>	Klages/Baronesse	77.9	71.4	46.0	69.5	88.4	102.6	75.9	1.18	0.96
MT010212	MT920073/Baronesse	71.6	78.0	51.6	70.4	91.5	92.4	75.9	0.91	0.91

continued

**Table 2 Dry Barley Yield continued:**

		Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
PI491534	<b>Gallatin</b>	82.9	74.7	49.7	64.7	90.4	92.9	75.9	1.02	0.97
2B965057	<b>Conrad</b>	77.6	79.5	47.8	68.0	90.0	92.6	75.9	1.01	0.96
MT960228	<b>Eslick</b>	79.3	78.5	49.3	67.3	85.5	94.8	75.8	0.97	0.95
MT030003	Harrington/MT950102	90.7	69.9	47.1	69.3	88.7	88.7	75.7	1.02	0.90
MT030036	Logan/MT960099	79.2	70.3	49.1	71.3	90.8	92.3	75.5	1.00	0.99
MT030152	MTLB 5/MT940053	75.2	73.3	51.0	66.4	91.4	94.6	75.3	1.00	0.97
PI568246	<b>Baronesse</b>	83.2	70.3	56.2	65.3	88.0	88.3	75.2	0.81	0.94
PI610264	<b>Valier</b>	79.9	66.9	47.6	70.4	89.1	93.6	74.6	1.04	0.98
MT030182	MTLB 6/MT960222	84.1	67.2	49.5	64.9	89.3	92.5	74.6	1.03	0.96
MT010158	MT920041/Harrington	78.3	66.8	50.4	70.9	81.6	94.3	73.7	0.90	0.93
MT030093	MT960099/Harrington	75.2	70.4	48.8	64.0	83.2	97.6	73.2	1.02	0.95
MT981060	<b>Hays - forage</b>	81.4	64.0	48.7	64.9	85.2	94.5	73.1	1.03	0.95
<b>MT960101</b>	Manley/Baronesse	77.0	69.0	53.3	59.6	90.4	88.2	72.9	0.91	0.92
6B952482	<b>Tradition</b>	77.3	74.7	42.9	67.9	87.7	81.9	72.1	0.95	0.91
MT030160	MTLB 5/MT950155	73.1	74.7	49.2	61.6	82.5	90.4	71.9	0.90	0.94
MT010162	MT920041/Harrington	66.6	71.3	48.0	66.0	85.3	94.1	71.9	0.97	0.91
MT030046	MT910189/MT960101	72.2	68.6	49.7	63.8	86.8	86.5	71.3	0.88	0.98
MT010191	MT920053/Harrington	71.5	70.6	49.3	66.7	80.7	88.6	71.2	0.83	0.97
99373119	<b>Shakira</b>	74.7	64.2	51.0	62.3	89.0	80.9	70.3	0.83	0.91
SK 76333	<b>Harrington</b>	70.8	70.9	46.1	62.3	88.2	78.0	69.4	0.85	0.89
NORD2125	<b>Marthe</b>	69.2	66.4	47.3	63.9	85.2	84.4	69.4	0.88	0.97
2B914947	<b>Merit</b>	63.9	75.9	47.2	59.4	83.8	86.0	69.4	0.87	0.83
6B932978	<b>Legacy</b>	59.7	74.1	35.1	54.4	88.7	73.8	64.3	1.02	0.75
SiteMean	SITE MEAN	80.7	73.1	50.4	69.6	90.6	94.1	76.4	1.00	1.00
C.V.	C.V. (S/Mean) * 100	8.97	6.64	6.20	7.50	6.07	5.13	***	***	***
F-Value		3.03	2.30	4.31	3.09	1.83	4.69	***	***	***
L.S.D.	L.S.D. (.05)	12.46	8.37	5.39	8.95	9.55	8.30	***	***	***

**Table 3. 2005 Montana Dryland Intrastate Barley – Test Weight (lb/bu)**

ID	Pedigree	Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
YU501385	Baronesse/Camas	50.2	50.2	51.3	48.3	52.9	52.7	50.9	1.00	0.83
MT030063	MT950155/Harrington	51.2	50.3	52.0	49.0	51.4	53.4	51.2	0.84	0.80
MT020155	MT960225/H1851195	48.9	47.8	50.1	47.6	46.9	51.8	48.8	0.64	0.30
MT020205	MTLB 32/H1851195	49.8	48.9	50.9	45.8	48.8	51.6	49.3	1.15	0.79
MT020064	MT910160/H1851195	49.7	49.5	51.0	47.6	51.0	51.5	50.0	0.90	0.96
MT030081	MT950186/MT960226	49.9	49.3	50.7	47.8	48.8	50.7	49.5	0.56	0.61
MT030079	MT950186/MT960225	49.7	50.2	52.3	48.7	52.9	51.8	50.9	0.94	0.80
MT020204	MTLB 32/H1851195	49.3	50.1	51.2	47.4	49.1	50.6	49.6	0.75	0.77
MT020162	MT960225/H1851195	50.2	49.3	52.2	48.8	48.9	52.3	50.3	0.68	0.45
MT020167	MT960225/H3860224	49.5	50.2	50.6	47.9	52.1	50.7	50.1	0.77	0.75
P952R522	<b>Spaulding</b>	47.5	49.7	51.4	46.7	50.4	51.4	49.5	1.21	0.92
MT030153	MTLB 5/MT940053	51.2	50.3	53.1	49.0	49.9	52.3	50.9	0.71	0.54
MT030107	MT960101/MT960225	47.3	47.6	49.9	44.9	50.2	49.0	48.1	1.17	0.87
MT950186	<b>Haxby</b>	51.1	50.9	53.2	48.9	53.1	52.8	51.6	1.02	0.91
BZ596117	<b>Boulder</b>	50.8	50.7	50.0	46.9	52.9	51.6	50.5	1.03	0.64
MT970229	MT890021/Stark	50.1	50.3	51.6	48.1	49.7	53.0	50.4	0.91	0.73
MT030035	Logan/MT960099	46.5	47.3	48.7	43.9	46.6	48.2	46.9	0.99	0.85
MT000047	Chinook/MT920161	47.8	48.2	49.6	46.0	50.3	50.9	48.8	1.10	0.93
MT020166	MT960225/H3860224	48.9	49.6	50.8	47.1	47.3	49.4	48.8	0.53	0.34
MT010081	MT886610/H1851195	48.7	47.8	51.7	44.1	50.0	50.4	48.8	1.61	0.89
MT030042	MT910189/MT960099	48.5	50.5	50.5	48.3	51.9	51.7	50.2	0.85	0.76
MT030144	MTLB 5/Harrington	48.8	49.3	51.6	48.8	51.3	51.7	50.2	0.80	0.78
MT010080	MT886610/H1851195	48.1	47.7	51.2	46.2	48.8	52.3	49.0	1.27	0.77
MT030137	MTLB 2/MT940053	49.3	50.5	50.8	47.3	51.9	52.1	50.3	1.10	0.92
MT000040	Chinook/MT920161	49.7	48.9	51.4	46.4	53.8	51.8	50.3	1.41	0.75
MT981210	MT910150/Stark	47.4	47.4	50.9	47.5	49.5	50.4	48.8	0.81	0.63
<b>MT910189</b>	ND 7293/Bearpaw	48.7	49.5	52.0	46.7	50.2	52.4	49.9	1.32	0.94
MT030173	MTLB 5/Manley	47.5	49.2	48.1	47.0	50.5	49.9	48.7	0.65	0.55
MT030051	MT910189/MTLB 06	49.8	49.2	52.2	46.8	49.6	52.7	50.0	1.23	0.81
YU587432	Baronesse/ORCA	48.3	48.5	49.4	47.0	48.3	50.7	48.7	0.69	0.76
MT000138	MT920041/H1851195	50.9	49.9	52.1	48.4	50.6	52.8	50.8	0.89	0.79
MT030039	Logan/MT960101	49.7	49.6	50.9	49.1	49.5	51.3	50.0	0.43	0.61
MT030047	MT910189/MT960101	45.2	49.1	49.5	43.0	52.3	49.4	48.1	1.85	0.75
MT010213	MT920073/Logan	50.2	51.0	49.9	48.8	50.8	52.1	50.4	0.54	0.59
MT010160	MT920041/Harrington	48.6	46.1	50.2	44.8	48.6	49.7	48.0	1.14	0.72
MT030168	MTLB 5/MT960101	47.4	49.4	49.8	47.3	51.2	49.2	49.0	0.73	0.58
MT030188	MTLB 13/MT950102	49.9	49.7	51.1	47.6	50.0	49.7	49.7	0.61	0.70
BZ594-19	<b>WB Xena</b>	46.8	48.3	49.4	45.9	51.1	49.5	48.5	1.06	0.76
MT000125	MT910189/Lewis	52.6	48.3	52.4	47.1	50.0	52.1	50.4	0.99	0.44
<b>MT970116</b>	Klages/Baronesse	50.1	49.7	51.9	47.1	50.2	52.2	50.2	1.09	0.89
MT010212	MT920073/Baronesse	44.9	47.2	48.1	44.7	49.5	48.8	47.2	1.13	0.78

continued

<b>Table 3 Dry Bly Test Wt cont:</b>		Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
PI491534	<b>Gallatin</b>	48.9	49.5	51.1	46.6	48.6	52.1	49.5	1.08	0.77
2B965057	<b>Conrad</b>	46.7	47.9	49.5	44.5	48.9	49.5	47.8	1.24	0.99
MT960228	<b>Eslick</b>	47.7	49.6	46.8	44.1	49.1	49.8	47.8	1.04	0.57
MT030003	Harrington/MT950102	48.7	47.0	50.7	45.7	49.9	49.9	48.6	1.07	0.77
MT030036	Logan/MT960099	49.2	49.0	49.7	47.3	46.8	51.7	48.9	0.61	0.30
MT030152	MTLB 5/MT940053	47.0	49.4	50.6	45.6	49.3	50.2	48.7	1.18	0.90
PI568246	<b>Baronesse</b>	46.1	48.9	47.2	43.6	49.3	48.7	47.3	1.17	0.72
PI610264	<b>Valier</b>	48.4	49.3	50.7	45.8	50.4	50.1	49.1	1.13	0.94
MT030182	MTLB 6/MT960222	48.0	48.5	48.6	45.4	51.1	50.1	48.6	1.09	0.77
MT010158	MT920041/Harrington	49.9	48.9	49.4	47.7	47.1	50.6	48.9	0.35	0.17
MT030093	MT960099/Harrington	46.4	48.1	49.1	44.6	50.7	49.3	48.0	1.30	0.85
MT981060	<b>Hays - forage</b>	44.6	46.9	45.4	43.0	44.0	47.5	45.2	0.74	0.45
<b>MT960101</b>	Manley/Baronesse	45.6	49.3	47.6	44.0	48.8	49.0	47.3	1.16	0.71
6B952482	<b>Tradition</b>	45.5	48.2	47.7	44.5	47.1	47.7	46.8	0.79	0.72
MT030160	MTLB 5/MT950155	45.7	47.9	49.4	42.8	49.7	48.7	47.3	1.62	0.91
MT010162	MT920041/Harrington	45.6	47.6	49.8	42.8	47.3	48.3	46.9	1.44	0.89
MT030046	MT910189/MT960101	49.1	50.2	52.2	47.0	49.9	51.8	50.0	1.13	0.89
MT010191	MT920053/Harrington	45.9	47.3	46.4	43.2	48.9	48.0	46.6	1.10	0.74
99373119	<b>Shakira</b>	44.3	47.0	48.1	41.3	52.8	47.3	46.8	1.96	0.63
SK 76333	<b>Harrington</b>	45.4	45.7	47.5	43.3	45.9	46.7	45.8	0.85	0.89
NORD2125	<b>Marthe</b>	43.6	46.7	47.2	44.2	50.1	47.8	46.6	1.16	0.57
2B914947	<b>Merit</b>	41.9	45.7	47.4	42.1	45.2	46.2	44.8	1.22	0.72
6B932978	<b>Legacy</b>	42.9	45.1	44.2	42.7	44.4	44.8	44.0	0.49	0.61
SiteMean	SITE MEAN	48.1	48.8	50.0	46.1	49.7	50.4	48.8	1.00	1.00
C.V.	C.V. (S/Mean) * 100	2.64	1.32	2.25	2.17	***	1.30	***	***	***
F-Value		8.29	12.57	5.54	10.68	***	16.09	***	***	***
L.S.D.	L.S.D. (.05)	2.21	1.10	2.25	1.75	***	1.31	***	***	***

**Table 4. 2005 Montana Dryland Intrastate Barley – Plump percent**

ID	Pedigree	Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
YU501385	Baronesse/Camas	68.5	81.0	25.3	44.9	91.1	51.2	60.3	1.06	0.76
MT030063	MT950155/Harrington	82.8	92.0	61.4	47.3	77.8	74.6	72.6	0.54	0.46
MT020155	MT960225/H1851195	63.8	89.0	48.6	50.1	83.8	55.8	65.2	0.85	0.96
MT020205	MTLB 32/H1851195	64.5	85.0	50.1	49.2	92.8	60.7	67.0	0.85	0.89
MT020064	MT910160/H1851195	82.0	95.0	75.3	71.0	97.6	65.7	81.1	0.62	0.91
MT030081	MT950186/MT960226	72.4	84.0	41.6	47.5	84.0	37.2	61.1	0.98	0.84
MT030079	MT950186/MT960225	50.7	90.0	57.6	21.1	92.7	44.8	59.5	1.22	0.79
MT020204	MTLB 32/H1851195	69.1	89.0	53.8	47.8	92.2	38.2	65.0	1.05	0.90
MT020162	MT960225/H1851195	74.0	91.0	65.3	60.1	92.4	67.2	75.0	0.66	0.94
MT020167	MT960225/H3860224	78.3	90.0	67.8	74.7	93.8	63.4	78.0	0.56	0.88
P952R522	<b>Spaulding</b>	31.6	84.0	41.3	40.8	75.6	39.5	52.1	1.02	0.88
MT030153	MTLB 5/MT940053	66.3	92.0	34.6	55.5	91.4	52.2	65.3	1.07	0.88
MT030107	MT960101/MT960225	33.9	91.0	52.2	38.8	73.5	25.7	52.5	1.13	0.81
MT950186	<b>Haxby</b>	67.9	89.0	61.0	40.7	93.2	47.6	66.6	0.98	0.85
BZ596117	<b>Boulder</b>	80.3	87.0	54.0	45.2	92.9	59.5	69.8	0.85	0.76
MT970229	MT890021/Stark	77.7	94.0	75.4	61.2	96.8	75.8	80.1	0.59	0.80
MT030035	Logan/MT960099	62.1	92.0	60.0	54.1	90.0	36.5	65.8	1.01	0.88
MT000047	Chinook/MT920161	60.5	88.0	29.8	57.5	93.1	52.1	63.5	1.07	0.83
MT020166	MT960225/H3860224	76.1	91.0	47.8	60.1	83.1	49.0	67.8	0.83	0.83
MT010081	MT886610/H1851195	57.8	79.0	54.5	29.9	89.2	44.7	59.2	0.98	0.81
MT030042	MT910189/MT960099	29.5	88.0	36.1	39.4	74.5	34.0	50.2	1.16	0.90
MT030144	MTLB 5/Harrington	64.0	92.0	50.3	61.9	91.9	55.7	69.3	0.89	0.96
MT010080	MT886610/H1851195	67.6	90.0	41.9	52.3	85.1	67.9	67.5	0.81	0.77
MT030137	MTLB 2/MT940053	64.4	91.0	41.5	49.6	95.6	55.2	66.2	1.07	0.93
MT000040	Chinook/MT920161	63.8	90.0	37.9	54.8	84.3	45.7	62.8	1.00	0.92
MT981210	MT910150/Stark	60.4	87.0	73.2	45.8	92.5	55.9	69.1	0.78	0.73
<b>MT910189</b>	ND 7293/Bearpaw	46.7	92.0	54.8	50.7	95.8	67.2	67.9	0.93	0.77
MT030173	MTLB 5/Manley	42.3	89.0	39.0	40.7	75.5	42.2	54.8	1.06	0.95
MT030051	MT910189/MTLB 06	53.0	90.0	29.0	36.7	93.0	54.0	59.3	1.26	0.89
YU587432	Baronesse/ORCA	35.5	86.0	33.7	30.4	82.4	39.9	51.3	1.25	0.95
MT000138	MT920041/H1851195	82.7	92.0	74.4	77.2	96.0	71.9	82.4	0.47	0.93
MT030039	Logan/MT960101	68.8	90.0	67.4	65.9	89.9	57.9	73.3	0.65	0.95
MT030047	MT910189/MT960101	40.6	93.0	47.7	31.5	86.7	44.0	57.2	1.23	0.91
MT010213	MT920073/Logan	68.9	89.0	39.9	64.1	95.6	63.2	70.1	0.88	0.78
MT010160	MT920041/Harrington	66.7	83.0	49.5	47.1	91.2	41.5	63.2	0.98	0.91
MT030168	MTLB 5/MT960101	20.5	82.0	24.5	40.0	71.5	23.2	43.6	1.24	0.87
MT030188	MTLB 13/MT950102	65.1	89.0	53.4	55.5	90.9	32.1	64.3	1.05	0.87
BZ594-19	<b>WB Xena</b>	52.2	91.0	23.8	35.5	82.8	23.1	51.4	1.45	0.97
MT000125	MT910189/Lewis	66.9	88.0	58.5	53.1	89.0	54.8	68.4	0.80	0.97
<b>MT970116</b>	Klages/Baronesse	74.6	94.0	56.6	44.2	89.8	60.8	70.0	0.90	0.85
MT010212	MT920073/Baronesse	52.1	88.0	37.3	48.1	87.4	44.5	59.6	1.10	0.98

continued

**Table 4 Dry Barley Plump cont:**

		Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
PI491534	<b>Gallatin</b>	65.9	91.0	42.4	53.5	80.8	45.8	63.2	0.94	0.93
2B965057	<b>Conrad</b>	58.4	95.0	44.9	57.0	92.0	46.5	65.6	1.10	0.98
MT960228	<b>Eslick</b>	23.1	61.0	4.1	20.5	83.2	20.0	35.3	1.40	0.87
MT030003	Harrington/MT950102	79.8	94.0	66.9	71.4	96.3	61.4	78.3	0.69	0.92
MT030036	Logan/MT960099	61.7	88.0	58.9	60.8	93.2	53.8	69.4	0.81	0.95
MT030152	MTLB 5/MT940053	18.9	89.0	32.5	17.8	90.6	26.2	45.8	1.63	0.90
PI568246	<b>Baronesse</b>	49.4	88.0	44.3	21.5	82.8	33.8	53.3	1.27	0.91
PI610264	<b>Valier</b>	24.4	85.0	46.0	30.0	55.1	33.1	45.6	0.91	0.67
MT030182	MTLB 6/MT960222	48.3	81.0	46.9	30.9	90.2	33.5	55.1	1.18	0.92
MT010158	MT920041/Harrington	83.7	93.0	70.7	83.1	93.1	50.1	78.9	0.61	0.56
MT030093	MT960099/Harrington	47.4	90.0	47.4	57.1	75.5	22.9	56.7	1.03	0.77
MT981060	<b>Hays - forage</b>	53.3	79.0	31.6	37.4	68.0	27.3	49.4	1.00	0.92
<b>MT960101</b>	Manley/Baronesse	37.5	81.0	17.6	26.8	60.4	22.2	40.9	1.20	0.94
6B952482	<b>Tradition</b>	67.1	89.0	24.3	22.9	53.6	22.3	46.5	1.13	0.66
MT030160	MTLB 5/MT950155	23.6	76.0	13.7	19.9	64.8	22.5	36.7	1.30	0.97
MT010162	MT920041/Harrington	41.2	82.0	27.4	24.5	61.6	26.5	43.9	1.13	0.94
MT030046	MT910189/MT960101	33.3	89.0	30.6	41.8	77.0	33.7	50.9	1.22	0.93
MT010191	MT920053/Harrington	50.1	89.0	24.2	57.2	81.7	51.2	58.9	1.03	0.77
99373119	<b>Shakira</b>	31.8	92.0	58.1	44.7	89.5	34.0	58.3	1.18	0.78
SK 76333	<b>Harrington</b>	48.3	91.0	55.4	45.5	69.7	27.6	56.2	0.96	0.78
NORD2125	<b>Marthe</b>	42.9	94.0	53.5	65.1	91.7	41.5	64.8	1.04	0.80
2B914947	<b>Merit</b>	24.0	91.0	27.9	48.7	63.5	33.1	48.0	1.10	0.74
6B932978	<b>Legacy</b>	22.6	83.0	20.0	38.0	61.3	14.1	39.8	1.25	0.86
SiteMean	SITE MEAN	55.4	88.1	45.6	46.8	84.3	44.7	60.8	1.00	1.00
C.V.	C.V. (S/Mean) * 100	***	***	***	28.31	***	12.79	***	***	***
F-Value		***	***	***	3.41	***	14.45	***	***	***
L.S.D.	L.S.D. (.05)	***	***	***	22.80	***	11.40	***	***	***

**Table 5. 2005 Montana Dryland Intrastate Barley – Head Date**  
Days from January 1

ID	Pedigree	Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
YU501385	Baronesse/Camas	179.6	170.8	176.3	173.4	182.0	184.9	177.8	1.04	0.92
MT030063	MT950155/Harrington	181.7	171.9	179.7	179.4	182.0	186.9	180.3	0.93	0.87
MT020155	MT960225/H1851195	178.0	168.0	174.4	168.9	176.0	181.9	174.5	1.07	0.96
MT020205	MTLB 32/H1851195	181.1	171.0	177.4	172.6	179.0	183.9	177.5	0.99	0.98
MT020064	MT910160/H1851195	179.1	171.8	178.7	172.8	181.0	185.5	178.2	0.99	0.89
MT030081	MT950186/MT960226	180.8	171.2	178.5	174.0	180.0	184.8	178.2	0.98	0.98
MT030079	MT950186/MT960225	180.7	171.8	179.0	173.7	183.0	185.0	178.9	1.02	0.92
MT020204	MTLB 32/H1851195	179.8	171.3	177.0	170.6	180.0	184.3	177.2	1.04	0.91
MT020162	MT960225/H1851195	179.1	172.3	180.3	174.3	183.0	186.6	179.3	0.99	0.83
MT020167	MT960225/H3860224	183.3	172.0	178.3	179.5	182.0	185.0	180.0	0.89	0.89
P952R522	<b>Spaulding</b>	182.6	172.4	177.6	175.0	180.0	184.3	178.6	0.92	0.99
MT030153	MTLB 5/MT940053	180.1	171.7	176.6	172.5	179.0	184.3	177.3	0.95	0.95
MT030107	MT960101/MT960225	185.8	172.6	179.3	175.4	181.0	185.6	180.0	1.06	0.96
MT950186	<b>Haxby</b>	178.0	171.3	178.5	172.1	182.0	184.7	177.8	0.98	0.83
BZ596117	<b>Boulder</b>	188.1	172.1	179.9	179.8	182.0	187.1	181.5	1.12	0.89
MT970229	MT890021/Stark	185.5	171.9	178.9	178.5	182.0	185.0	180.3	0.99	0.93
MT030035	Logan/MT960099	183.9	173.3	179.3	175.2	182.0	185.5	179.9	0.99	0.99
MT000047	Chinook/MT920161	180.2	171.8	176.7	173.1	180.0	183.8	177.6	0.92	0.96
MT020166	MT960225/H3860224	186.7	170.2	178.6	179.9	183.0	184.2	180.4	1.07	0.82
MT010081	MT886610/H1851195	179.0	172.4	178.6	172.1	180.0	184.9	177.8	0.92	0.86
MT030042	MT910189/MT960099	183.6	170.9	177.7	174.9	179.0	185.6	178.6	1.09	0.97
MT030144	MTLB 5/Harrington	186.7	172.7	178.6	175.0	181.0	184.3	179.7	1.04	0.90
MT010080	MT886610/H1851195	179.1	171.6	178.4	171.6	180.0	184.1	177.5	0.95	0.89
MT030137	MTLB 2/MT940053	183.3	171.2	177.6	174.0	180.0	184.1	178.4	1.04	0.99
MT000040	Chinook/MT920161	182.7	172.2	179.1	173.1	181.0	184.6	178.8	1.02	0.96
MT981210	MT910150/Stark	180.5	173.3	180.1	176.4	183.0	185.5	179.8	0.85	0.90
<b>MT910189</b>	ND 7293/Bearpaw	179.7	171.0	177.2	173.2	178.0	182.9	177.0	0.87	0.98
MT030173	MTLB 5/Manley	187.2	173.9	179.7	179.8	182.0	185.9	181.4	0.92	0.88
MT030051	MT910189/MTLB 06	184.1	172.1	178.1	171.4	180.0	184.1	178.3	1.08	0.91
YU587432	Baronesse/ORCA	182.0	171.7	177.0	171.3	180.0	184.5	177.8	1.07	0.94
MT000138	MT920041/H1851195	176.6	171.6	176.7	170.7	180.0	182.9	176.4	0.85	0.79
MT030039	Logan/MT960101	176.9	170.1	175.0	167.4	177.0	181.6	174.7	0.96	0.83
MT030047	MT910189/MT960101	188.2	173.3	179.9	175.4	182.0	185.2	180.7	1.09	0.89
MT010213	MT920073/Logan	185.6	172.8	180.1	175.3	183.0	187.0	180.6	1.15	0.99
MT010160	MT920041/Harrington	180.5	170.9	180.0	173.3	182.0	185.7	178.7	1.09	0.92
MT030168	MTLB 5/MT960101	187.7	172.0	179.7	179.8	183.0	187.1	181.5	1.12	0.90
MT030188	MTLB 13/MT950102	180.4	172.3	177.3	179.6	180.0	184.1	178.9	0.70	0.78
BZ594-19	<b>WB Xena</b>	186.7	173.5	179.6	174.5	182.0	185.8	180.4	1.09	0.93
MT000125	MT910189/Lewis	182.3	172.7	179.0	179.1	183.0	185.0	180.2	0.84	0.90
<b>MT970116</b>	Klages/Baronesse	179.5	170.3	176.8	172.0	180.0	184.4	177.2	1.05	0.95
MT010212	MT920073/Baronesse	182.7	172.7	179.6	174.2	182.0	185.1	179.4	0.99	0.97

continued

**Table 5 Dry Bly Head Date cont:**

		Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
PI491534	<b>Gallatin</b>	178.3	171.1	176.3	172.5	180.0	184.0	177.0	0.93	0.91
2B965057	<b>Conrad</b>	189.4	173.7	180.3	181.7	182.0	185.3	182.1	0.91	0.73
MT960228	<b>Eslick</b>	188.5	174.2	180.7	182.5	183.0	185.9	182.5	0.87	0.76
MT030003	Harrington/MT950102	178.4	169.5	176.7	169.9	178.0	183.2	176.0	1.04	0.92
MT030036	Logan/MT960099	183.2	172.3	179.5	174.0	180.0	184.7	178.9	0.98	0.97
MT030152	MTLB 5/MT940053	186.4	172.4	179.3	175.2	182.0	186.3	180.3	1.15	0.97
PI568246	<b>Baronesse</b>	188.2	173.8	180.3	181.1	182.0	187.8	182.2	1.01	0.86
PI610264	<b>Valier</b>	186.4	172.5	180.5	174.3	183.0	187.3	180.7	1.23	0.97
MT030182	MTLB 6/MT960222	186.4	173.0	179.0	176.7	182.0	184.9	180.3	1.00	0.94
MT010158	MT920041/Harrington	184.1	172.1	179.6	174.6	181.0	184.3	179.3	1.00	0.97
MT030093	MT960099/Harrington	187.6	173.4	180.9	182.3	182.0	185.9	182.0	0.88	0.76
MT981060	<b>Hays - forage</b>	190.1	173.3	180.4	182.0	183.0	188.8	182.9	1.13	0.83
<b>MT960101</b>	Manley/Baronesse	186.8	174.0	181.4	183.0	184.0	187.2	182.7	0.89	0.83
6B952482	<b>Tradition</b>	175.9	169.8	177.1	170.1	181.0	183.4	176.2	0.99	0.77
MT030160	MTLB 5/MT950155	186.4	173.3	179.0	173.5	183.0	187.0	180.4	1.20	0.94
MT010162	MT920041/Harrington	184.4	173.1	181.3	180.0	183.0	187.0	181.4	0.94	0.94
MT030046	MT910189/MT960101	186.0	173.6	180.7	181.4	184.0	187.2	182.2	0.95	0.90
MT010191	MT920053/Harrington	186.4	174.6	182.0	182.6	184.0	188.7	183.0	0.92	0.88
99373119	<b>Shakira</b>	190.7	173.0	180.6	180.2	183.0	188.4	182.6	1.21	0.87
SK 76333	<b>Harrington</b>	181.4	172.9	180.3	174.9	183.0	185.9	179.7	0.97	0.93
NORD2125	<b>Marthe</b>	190.3	173.7	183.4	181.7	185.0	188.8	183.8	1.14	0.90
2B914947	<b>Merit</b>	182.5	174.8	183.0	181.3	184.0	188.8	182.4	0.84	0.82
6B932978	<b>Legacy</b>	177.7	169.1	177.3	169.9	180.0	184.3	176.4	1.12	0.88
SiteMean	SITE MEAN	183.2	172.2	178.9	175.6	181.4	185.4	179.4	1.00	1.00
C.V.	C.V. (S/Mean) * 100	1.16	0.49	0.31	0.55	***	0.27	***	***	***
F-Value		9.34	7.18	28.23	47.73	***	29.05	***	***	***
L.S.D.	L.S.D. (.05)	3.52	1.41	0.94	1.61	***	0.86	***	***	***

**Table 6. 2005 Montana Dryland Intrastate Barley – Height (inches)**

ID	Pedigree	Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
YU501385	Baronesse/Camas	31.0	26.6	31.1	39.8	30.0	35.4	32.3	1.07	0.84
MT030063	MT950155/Harrington	31.3	24.7	31.9	39.3	34.0	34.9	32.7	1.21	0.98
MT020155	MT960225/H1851195	31.5	28.2	33.1	41.4	36.0	33.2	33.9	1.05	0.86
MT020205	MTLB 32/H1851195	31.9	26.5	35.0	38.8	37.0	35.2	34.1	1.03	0.88
MT020064	MT910160/H1851195	30.7	24.8	31.5	38.7	35.0	34.3	32.5	1.18	0.98
MT030081	MT950186/MT960226	27.9	27.8	32.4	35.8	31.0	35.1	31.7	0.76	0.76
MT030079	MT950186/MT9 60225	31.0	26.2	30.5	36.6	34.0	33.9	32.0	0.90	0.97
MT020204	MTLB 32/H1851195	31.5	26.7	31.2	38.7	34.0	33.6	32.6	0.99	0.97
MT020162	MT960225/H1851195	32.5	26.3	32.7	37.8	34.0	36.8	33.3	0.99	0.93
MT020167	MT960225/H3860224	29.5	24.5	32.4	39.4	33.0	35.3	32.3	1.26	0.97
P952R522	<b>Spaulding</b>	28.3	24.7	31.0	38.2	30.0	35.4	31.3	1.17	0.90
MT030153	MTLB 5/MT940053	29.2	26.2	33.1	36.1	34.0	34.4	32.1	0.89	0.89
MT030107	MT960101/MT960225	26.7	24.8	26.8	30.5	29.0	31.5	28.2	0.60	0.84
MT950186	<b>Haxby</b>	32.9	25.8	32.2	36.4	32.0	34.8	32.3	0.84	0.84
BZ596117	<b>Boulder</b>	28.4	24.9	29.6	34.5	32.0	32.6	30.3	0.86	0.98
MT970229	MT890021/Stark	30.3	24.9	29.8	39.0	32.0	33.5	31.6	1.16	0.97
MT030035	Logan/MT960099	28.7	25.1	30.5	38.2	34.0	33.3	31.6	1.15	0.98
MT000047	Chinook/MT920161	30.6	25.8	32.1	36.6	33.0	35.6	32.3	0.95	0.94
MT020166	MT960225/H3860224	27.2	24.9	31.7	38.2	31.0	33.7	31.1	1.13	0.90
MT010081	MT886610/H1851195	29.4	27.5	31.3	37.7	34.0	34.9	32.5	0.94	0.97
MT030042	MT910189/MT960099	27.7	25.2	19.7	36.9	31.0	32.8	28.9	1.17	0.58
MT030144	MTLB 5/Harrington	29.5	24.8	31.2	38.3	32.0	33.4	31.5	1.11	0.97
MT010080	MT886610/H1851195	30.0	23.9	31.8	40.4	33.0	36.0	32.5	1.41	0.98
MT030137	MTLB 2/MT940053	28.3	25.5	30.7	37.0	32.0	33.4	31.1	1.00	0.97
MT000040	Chinook/MT920161	28.7	24.4	29.7	36.8	33.0	33.6	31.0	1.10	0.99
MT981210	MT910150/Stark	29.7	25.8	31.4	38.3	36.0	34.5	32.6	1.12	0.95
<b>MT910189</b>	ND 7293/Bearpaw	28.5	25.1	31.9	38.4	35.0	33.7	32.1	1.16	0.94
MT030173	MTLB 5/Manley	26.4	24.6	29.6	35.6	32.0	32.9	30.2	1.01	0.94
MT030051	MT910189/MTLB 06	29.1	25.6	28.7	38.7	33.0	34.5	31.6	1.17	0.97
YU587432	Baronesse/ORCA	25.6	24.8	29.5	34.9	31.0	33.0	29.8	0.96	0.89
MT000138	MT920041/H1851195	28.8	26.8	31.8	42.8	37.0	34.4	33.6	1.39	0.89
MT030039	Logan/MT960101	28.3	24.1	31.3	39.7	32.0	31.7	31.2	1.24	0.91
MT030047	MT910189/MT960101	27.9	23.5	27.1	35.7	27.0	31.8	28.8	1.00	0.85
MT010213	MT920073/Logan	26.2	24.8	27.4	35.7	32.0	31.5	29.6	1.00	0.92
MT010160	MT920041/Harrington	30.9	25.6	30.8	37.1	34.0	34.3	32.1	0.99	0.98
MT030168	MTLB 5/MT960101	28.4	24.2	29.6	35.5	32.0	32.9	30.4	1.00	1.00
MT030188	MTLB 13/MT950102	28.7	27.7	31.9	36.5	32.0	32.0	31.5	0.73	0.86
BZ594-19	<b>WB Xena</b>	28.9	25.0	32.5	38.4	34.0	33.4	32.0	1.13	0.94
MT000125	MT910189/Lewis	30.1	24.7	29.8	37.1	32.0	35.0	31.4	1.09	0.97
<b>MT970116</b>	Klages/Baronesse	35.2	28.0	35.9	41.7	36.0	36.8	35.6	1.07	0.91
MT010212	MT920073/Baronesse	30.2	25.0	33.3	33.6	34.0	34.0	31.7	0.76	0.71

continued

**Table 6 Dry Barley Height cont:**

		Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
PI491534	<b>Gallatin</b>	32.9	28.7	31.5	35.8	35.0	35.3	33.2	0.66	0.89
2B965057	<b>Conrad</b>	28.0	25.7	29.5	34.7	31.0	33.3	30.4	0.83	0.96
MT960228	<b>Eslick</b>	29.0	23.3	26.2	34.7	30.0	31.5	29.1	0.98	0.93
MT030003	Harrington/MT950102	31.7	25.7	32.7	39.4	34.0	33.2	32.8	1.07	0.93
MT030036	Logan/MT960099	27.6	23.7	19.3	35.1	34.0	32.3	28.6	1.21	0.58
MT030152	MTLB 5/MT940053	30.2	26.7	32.1	37.9	33.0	35.1	32.5	0.97	0.98
PI568246	<b>Baronesse</b>	28.1	23.2	29.6	35.1	31.0	32.0	29.8	1.00	0.98
PI610264	<b>Valier</b>	30.4	24.8	30.3	38.6	32.0	33.9	31.7	1.14	0.97
MT030182	MTLB 6/MT960222	28.5	23.9	27.9	35.2	30.0	33.0	29.7	0.99	0.97
MT010158	MT920041/Harrington	31.1	24.9	29.7	37.3	31.0	31.9	31.0	0.96	0.90
MT030093	MT960099/Harrington	29.9	24.0	29.4	33.4	33.0	33.2	30.5	0.85	0.87
MT981060	<b>Hays - forage</b>	28.8	24.1	29.8	32.9	34.0	31.2	30.1	0.79	0.78
<b>MT960101</b>	Manley/Baronesse	28.1	25.9	29.4	32.1	30.0	32.9	29.7	0.61	0.86
6B952482	<b>Tradition</b>	30.9	28.5	29.6	40.6	36.0	36.9	33.8	1.15	0.89
MT030160	MTLB 5/MT950155	28.2	21.5	29.1	35.4	33.0	31.9	29.8	1.20	0.95
MT010162	MT920041/Harrington	28.9	26.0	28.2	35.3	31.0	31.6	30.1	0.80	0.96
MT030046	MT910189/MT960101	31.4	24.7	29.9	37.8	33.0	34.4	31.9	1.11	0.97
MT010191	MT920053/Harrington	31.4	26.2	28.8	34.2	33.0	32.9	31.1	0.71	0.86
99373119	<b>Shakira</b>	24.2	20.9	22.5	32.0	26.0	28.7	25.7	0.99	0.91
SK 76333	<b>Harrington</b>	30.9	25.6	28.5	32.9	31.0	32.9	30.3	0.65	0.83
NORD2125	<b>Marthe</b>	26.9	22.4	27.7	30.5	26.0	30.0	27.2	0.67	0.80
2B914947	<b>Merit</b>	29.7	25.6	28.0	35.9	34.0	31.4	30.8	0.91	0.87
6B932978	<b>Legacy</b>	33.8	28.5	31.2	39.8	36.0	36.8	34.3	1.00	0.94
SiteMean	SITE MEAN	29.5	25.3	30.1	36.8	32.6	33.6	31.3	1.00	1.00
C.V.	C.V. (S/Mean) * 100	7.56	6.04	11.43	6.36	***	2.58	***	***	***
F-Value		2.15	2.87	1.99	3.47	***	9.72	***	***	***
L.S.D.	L.S.D. (.05)	3.84	2.61	5.78	3.88	***	1.50	***	***	***

**Table 7. 2005 Montana Dryland Intrastate Barley – Protein percent**

ID	Pedigree	Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
YU501385	Baronesse/Camas	13.9	11.8	13.9	14.8	11.7	14.1	13.4	0.68	0.90
MT030063	MT950155/Harrington	14.9	12.7	14.4	15.4	12.5	14.0	14.0	0.62	0.87
MT020155	MT960225/H1851195	15.2	12.9	15.1	14.2	13.3	15.0	14.3	0.52	0.86
MT020205	MTLB 32/H1851195	17.5	13.4	17.4	15.8	13.6	15.8	15.6	0.92	0.86
MT020064	MT910160/H1851195	16.2	12.4	16.3	16.6	13.9	15.6	15.1	0.90	0.91
MT030081	MT950186/MT960226	15.4	12.4	14.4	14.3	11.9	15.1	13.9	0.78	0.90
MT030079	MT950186/MT960225	15.3	11.9	14.2	14.7	12.1	15.1	13.9	0.83	0.96
MT020204	MTLB 32/H1851195	16.1	12.3	16.0	16.7	14.2	16.2	15.2	0.89	0.89
MT020162	MT960225/H1851195	15.5	12.9	15.7	15.1	13.0	15.2	14.6	0.69	0.95
MT020167	MT960225/H3860224	15.0	13.3	15.9	16.5	12.7	15.8	14.9	0.77	0.80
P952R522	<b>Spaulding</b>	15.1	10.5	14.0	14.8	11.6	14.3	13.4	1.05	0.98
MT030153	MTLB 5/MT940053	15.8	13.2	16.9	15.8	13.7	15.6	15.2	0.74	0.85
MT030107	MT960101/MT960225	16.5	11.7	14.3	16.2	12.1	15.9	14.4	1.14	0.91
MT950186	<b>Haxby</b>	15.8	12.1	14.9	14.9	12.0	15.5	14.2	0.94	0.96
BZ596117	<b>Boulder</b>	15.7	12.3	15.5	15.4	12.5	16.0	14.6	0.93	0.95
MT970229	MT890021/Stark	15.8	12.8	15.4	16.4	12.6	15.3	14.7	0.87	0.94
MT030035	Logan/MT960099	15.5	11.7	14.9	15.1	11.6	15.1	14.0	1.02	0.99
MT000047	Chinook/MT920161	16.3	12.9	15.7	16.7	13.2	15.2	15.0	0.88	0.94
MT020166	MT960225/H3860224	14.9	12.4	15.1	15.2	12.5	15.5	14.2	0.78	0.94
MT010081	MT886610/H1851195	16.7	13.8	16.4	17.5	13.3	15.9	15.6	0.90	0.89
MT030042	MT910189/MT960099	16.1	11.7	16.0	13.7	12.0	14.9	14.1	0.97	0.80
MT030144	MTLB 5/Harrington	16.1	13.0	15.8	15.9	12.9	14.7	14.7	0.78	0.92
MT010080	MT886610/H1851195	16.8	13.0	17.3	16.1	13.6	15.7	15.4	0.94	0.90
MT030137	MTLB 2/MT940053	17.2	11.9	16.7	16.6	12.6	16.2	15.2	1.31	1.00
MT000040	Chinook/MT920161	16.8	11.7	16.6	16.1	13.9	15.4	15.1	1.03	0.89
MT981210	MT910150/Stark	17.0	12.9	15.8	16.4	13.1	16.1	15.2	0.99	0.99
<b>MT910189</b>	ND 7293/Bearpaw	16.2	11.5	14.0	14.6	13.1	14.8	14.0	0.82	0.82
MT030173	MTLB 5/Manley	16.7	11.5	15.6	16.2	12.5	16.0	14.7	1.23	0.99
MT030051	MT910189/MTLB 06	16.7	12.1	16.9	16.7	12.5	15.7	15.1	1.22	0.97
YU587432	Baronesse/ORCA	15.5	12.6	15.1	14.9	12.6	15.3	14.3	0.75	0.97
MT000138	MT920041/H1851195	16.8	12.4	15.8	16.8	13.6	15.9	15.2	1.00	0.96
MT030039	Logan/MT960101	15.9	11.7	14.3	15.8	12.8	15.2	14.3	0.92	0.92
MT030047	MT910189/MT960101	16.9	11.0	14.6	15.2	11.6	14.6	14.0	1.22	0.94
MT010213	MT920073/Logan	17.5	12.4	17.4	15.6	13.6	16.0	15.4	1.09	0.88
MT010160	MT920041/Harrington	17.3	13.2	16.1	16.1	13.5	16.0	15.4	0.90	0.96
MT030168	MTLB 5/MT960101	17.8	12.0	16.3	15.3	12.3	16.5	15.0	1.27	0.92
MT030188	MTLB 13/MT950102	15.6	12.2	16.3	16.6	13.1	16.3	15.0	1.01	0.91
BZ594-19	<b>WB Xena</b>	15.4	12.0	15.2	14.6	11.6	15.0	14.0	0.93	0.95
MT000125	MT910189/Lewis	15.9	13.4	14.7	15.9	12.8	15.0	14.6	0.68	0.88
<b>MT970116</b>	Klages/Baronesse	16.0	12.6	15.9	16.2	12.5	14.6	14.6	0.92	0.92
MT010212	MT920073/Baronesse	16.2	11.8	15.1	16.4	12.7	16.0	14.7	1.09	0.96

continued

<b>Table 7 Dry Barley Protein cont:</b>		Havre	Sidney	Moccasin	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
PI491534	<b>Gallatin</b>	16.4	12.5	15.8	16.7	12.9	15.4	15.0	1.00	0.97
2B965057	<b>Conrad</b>	16.4	12.3	16.5	16.6	12.6	16.2	15.1	1.14	0.98
MT960228	<b>Eslick</b>	16.9	13.4	16.0	16.3	11.6	16.2	15.1	1.09	0.87
MT030003	Harrington/MT950102	15.7	11.7	15.1	15.8	12.6	16.0	14.5	1.03	0.96
MT030036	Logan/MT960099	17.1	11.7	15.3	15.4	12.8	16.1	14.7	1.12	0.94
MT030152	MTLB 5/MT940053	17.3	12.4	15.8	15.8	12.2	15.9	14.9	1.15	0.96
PI568246	<b>Baronesse</b>	16.7	11.8	14.7	17.5	12.5	16.1	14.9	1.22	0.88
PI610264	<b>Valier</b>	17.2	11.5	15.7	17.2	14.2	16.1	15.3	1.13	0.86
MT030182	MTLB 6/MT960222	17.5	11.9	16.1	17.8	13.5	16.9	15.6	1.31	0.94
MT010158	MT920041/Harrington	16.7	11.9	15.7	15.6	13.3	16.1	14.9	1.02	0.95
MT030093	MT960099/Harrington	16.5	12.4	15.6	15.6	12.5	15.5	14.7	0.99	0.99
MT981060	<b>Hays - forage</b>	17.0	14.2	15.8	15.3	12.9	15.8	15.2	0.71	0.78
<b>MT960101</b>	Manley/Baronesse	17.3	11.9	17.2	16.7	12.4	15.8	15.2	1.35	0.97
6B952482	<b>Tradition</b>	15.1	12.7	16.5	16.7	12.3	16.1	14.9	0.99	0.83
MT030160	MTLB 5/MT950155	16.8	11.9	17.3	16.8	12.6	16.5	15.3	1.34	0.97
MT010162	MT920041/Harrington	17.3	12.4	16.5	18.5	12.5	16.6	15.6	1.41	0.94
MT030046	MT910189/MT960101	16.4	12.5	15.9	16.2	12.7	15.3	14.8	1.00	0.99
MT010191	MT920053/Harrington	17.4	12.6	18.5	16.6	13.1	16.9	15.8	1.29	0.90
99373119	<b>Shakira</b>	16.5	12.0	14.8	15.6	13.0	16.1	14.7	0.98	0.92
SK 76333	<b>Harrington</b>	17.0	11.7	16.1	15.9	13.3	16.0	15.0	1.12	0.96
NORD2125	<b>Marthe</b>	17.6	12.0	16.4	15.6	12.8	16.1	15.1	1.21	0.95
2B914947	<b>Merit</b>	18.8	12.5	15.7	17.2	12.1	16.5	15.5	1.43	0.92
6B932978	<b>Legacy</b>	15.5	11.9	15.6	15.5	12.1	16.5	14.5	1.06	0.91
SiteMean	SITE MEAN	16.4	12.3	15.7	16.0	12.7	15.6	14.8	1.00	1.00
C.V.	C.V. (S/Mean) * 100	***	6.87	***	***	4.49	2.75	***	***	***
F-Value		***	1.60	***	***	3.24	4.49	***	***	***
L.S.D.	L.S.D. (.05)	***	1.46	***	***	1.00	0.86	***	***	***

**Table 8. 2005 Montana Irrigated Intrastate Barley Summary – All Traits**

ID	PEDIGREE	Yield bu/ac	Test Weight lb/bu	Plump %	Heading Date	Plant Height inches	Protein %
BZ594-19	<b>WB Xena</b>	<b>123.0**</b>	50.5	79.1	178.2	36.1	<b>12.5*</b>
MT030081	MT950186/MT960226	<b>122.9*</b>	51.0	81.1	177.1	37.6	<b>12.9*</b>
YU501385	Baronesse/Camas	<b>122.3*</b>	<b>51.8*</b>	84.6	176.3	36.0	<b>12.6*</b>
MT020162	MT960225/H1851195	<b>120.9*</b>	51.5	<b>88.3*</b>	178.5	38.6	13.7
MT030173	MTLB 5/Manley	<b>119.8*</b>	51.2	82.6	178.4	35.0	13.2
MT020166	MT960225/H3860224	<b>119.4*</b>	50.7	<b>87.4*</b>	177.7	35.6	<b>12.3*</b>
P952R522	<b>Spaulding</b>	<b>119.0*</b>	<b>51.7*</b>	<b>86.2*</b>	177.5	35.6	<b>12.1**</b>
MT030137	MTLB 2/MT940053	<b>118.4*</b>	<b>51.8*</b>	<b>87.3*</b>	176.3	34.1	14.0
MT030079	MT950186/MT960225	<b>117.6*</b>	<b>52.1*</b>	<b>85.5*</b>	177.8	36.6	<b>12.5*</b>
MT030035	Logan/MT960099	<b>117.4*</b>	49.5	83.1	178.3	35.8	<b>12.5*</b>
MT960228	<b>Eslick</b>	<b>117.1*</b>	50.5	71.8	179.4	31.9	<b>12.6*</b>
MT000047	Chinook/MT920161	<b>117.0*</b>	51.1	83.9	176.3	36.4	13.5
MT000040	Chinook/MT920161	<b>117.0*</b>	51.4	84.3	177.0	35.4	14.1
MT030042	MT910189/MT960099	<b>116.6*</b>	<b>51.9*</b>	82.5	176.2	33.9	<b>12.2*</b>
MT010081	MT886610/H1851195	<b>116.6*</b>	51.4	<b>85.9*</b>	177.4	36.3	13.5
MT970229	MT890021/Stark	<b>116.1*</b>	<b>52.4*</b>	<b>91.6*</b>	178.0	35.0	13.0*
MT010158	MT920041/Harrington	<b>116.1*</b>	50.9	<b>89.0*</b>	177.5	34.8	13.5
MT981210	MT910150/Stark	<b>115.4*</b>	51.2	<b>89.4*</b>	178.0	35.7	13.7
MT030160	MTLB 5/MT950155	115.1	49.8	72.5	178.6	33.7	13.4
2B965057	<b>Conrad</b>	115.0	50.1	<b>87.8*</b>	177.9	34.3	13.8
MT020204	MTLB 32/H1851195	114.9	<b>51.7*</b>	81.3	176.1	35.9	13.5
MT030152	MTLB 5/MT940053	114.5	51.1	80.0	178.3	36.3	13.0*
MT000125	MT910189/Lewis	114.5	<b>51.7*</b>	<b>90.8*</b>	177.4	36.7	13.2
S3482	<b>Calgary</b>	114.3	49.9	77.2	179.3	<b>29.9*</b>	13.3
MT010191	MT920053/Harrington	114.2	50.4	82.3	180.5	35.2	13.2
MT020064	MT910160/H1851195	114.1	<b>51.7*</b>	<b>92.2*</b>	177.1	35.8	<b>12.4*</b>
MT010213	MT920073/Logan	114.1	<b>52.3*</b>	<b>88.0*</b>	178.3	33.8	13.8
MT030047	MT910189/MT960101	114.0	50.2	82.2	177.7	33.3	<b>12.6*</b>
NORD2125	<b>Marthe</b>	113.9	48.9	<b>87.3*</b>	182.0	31.5	13.0
MT000138	MT920041/H1851195	113.9	<b>52.7**</b>	<b>94.0**</b>	175.6	37.8	14.1
MT030168	MTLB 5/MT960101	113.8	51.3	74.0	178.8	35.4	13.4
6B952482	<b>Tradition</b>	113.7	48.6	<b>86.7*</b>	175.1	40.1	13.0
MT030063	MT950155/Harrington	113.7	<b>52.3*</b>	<b>90.5*</b>	178.2	37.8	13.0
MT030188	MTLB 13/MT950102	113.7	50.8	83.7	176.8	35.7	13.5
MT020155	MT960225/H1851195	113.6	50.6	83.2	<b>173.6*</b>	37.0	13.1
2B914947	<b>Merit</b>	113.5	48.0	75.5	182.1	36.2	13.2
<b>MT910189</b>	ND 7293/Bearpaw	113.2	50.7	<b>90.8*</b>	176.1	35.5	13.1
MT010212	MT920073/Baronesse	113.2	50.2	83.6	177.9	34.8	13.4
MT950186	<b>Haxby</b>	113.1	<b>51.9*</b>	<b>86.9*</b>	177.1	36.9	13.1
MT030051	MT910189/MTLB 06	113.0	51.5	<b>87.1*</b>	176.3	36.1	13.9
<b>MT960101</b>	Manley/Baronesse	112.6	50.0	70.9	179.7	34.2	13.2

continued

**Table 8 Irr Barley, All Traits cont:**

		Yield	Test Wt	Plump	Heading	Height	Protein
MT030107	MT960101/MT960225	112.5	50.1	79.1	177.9	33.2	<b>12.9*</b>
MT010080	MT886610/H1851195	112.3	51.1	<b>87.7*</b>	175.8	37.6	13.6
MT030036	Logan/MT960099	111.3	51.1	<b>87.0*</b>	177.1	35.4	13.4
MT020205	MTLB 32/H1851195	111.1	51.0	<b>85.9*</b>	176.4	36.8	13.8
YU587432	Baronesse/ORCA	111.0	50.8	83.9	176.8	34.3	<b>12.8*</b>
MT030144	MTLB 5/Harrington	111.0	<b>51.7*</b>	<b>90.7*</b>	176.3	35.3	13.5
MT020167	MT960225/H3860224	110.9	51.3	<b>89.0*</b>	178.2	36.4	13.5
<b>MT970116</b>	Klages/Baronesse	110.4	<b>52.0*</b>	<b>89.8*</b>	176.3	39.4	13.3
PI610264	<b>Valier</b>	110.4	51.2	78.8	179.1	36.1	13.9
PI568246	<b>Baronesse</b>	110.1	49.9	81.2	178.5	33.3	13.3
MT010160	MT920041/Harrington	110.1	50.4	81.6	178.0	36.8	13.4
BZ596117	<b>Boulder</b>	109.0	<b>52.1*</b>	<b>87.7*</b>	178.2	34.4	13.6
MT010162	MT920041/Harrington	108.8	50.1	80.9	179.0	34.2	13.5
PI491534	<b>Gallatin</b>	108.3	51.4	83.4	176.4	36.6	13.2
MT030093	MT960099/Harrington	107.8	49.5	75.4	179.8	34.7	13.2
MT030039	Logan/MT960101	107.6	51.5	<b>88.6*</b>	<b>173.2**</b>	33.7	13.0
MT030046	MT910189/MT960101	106.5	51.4	82.7	178.6	36.2	13.6
6B932978	<b>Legacy</b>	106.2	46.6	80.8	176.2	39.4	<b>12.8*</b>
MT030003	Harrington/MT950102	106.0	50.0	<b>89.7*</b>	176.0	36.0	13.6
99373119	<b>Shakira</b>	100.7	48.9	<b>88.0*</b>	179.6	<b>28.9**</b>	13.2
SK 76333	<b>Harrington</b>	100.3	47.9	77.7	179.0	35.4	13.6
CI 15773	<b>Morex</b>	98.8	47.7	<b>85.2*</b>	<b>174.2*</b>	42.8	14.0
MT981060	<b>Hays</b>	96.7	46.5	61.8	179.9	34.8	13.4
SiteMean	SITE MEAN	113.0	50.7	83.9	177.6	35.6	13.2
C.V.	C.V. (S/Mean) * 100	5.59	1.72	8.84	0.55	3.49	5.43
P-Value		<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
L.S.D.	L.S.D. (.05)	7.86	1.09	9.24	1.23	1.55	0.90

\*\* indicates entries with highest yield, test weight, plump, earliest heading date and lowest protein within a column.

\* indicates entries equal to highest entry

**Table 9. 2005 Montana Irrigated Intrastate Barley – Yield (bu/a)**

ID	Pedigree	Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
BZ594-19	<b>WB Xena</b>	161.8	115.6	107.3	113.4	116.8	123.0	1.28	0.89
MT030081	MT950186/MT960226	154.0	117.3	103.4	116.9	122.7	122.9	1.14	0.96
YU501385	Baronesse/Camas	153.3	103.3	110.9	115.8	128.0	122.3	1.16	0.92
MT020162	MT960225/H1851195	156.2	109.4	97.8	114.6	126.6	120.9	1.38	1.00
MT030173	MTLB 5/Manley	141.1	110.1	105.8	122.1	120.1	119.8	0.83	0.96
MT020166	MT960225/H3860224	143.3	121.5	97.9	121.2	113.0	119.4	0.88	0.75
P952R522	<b>Spaulding</b>	140.1	108.6	107.5	116.2	122.7	119.0	0.82	0.99
MT030137	MTLB 2/MT940053	142.8	106.8	98.0	116.3	128.1	118.4	1.06	0.94
MT030079	MT950186/MT960225	134.8	112.1	100.5	116.4	124.1	117.6	0.76	0.92
MT030035	Logan/MT960099	141.6	108.5	111.1	107.3	118.6	117.4	0.82	0.86
MT960228	<b>Eslick</b>	147.6	105.0	98.8	118.6	115.5	117.1	1.14	0.96
MT000047	Chinook/MT920161	141.0	104.3	103.9	115.8	119.8	117.0	0.93	0.98
MT000040	Chinook/MT920161	144.4	104.5	102.1	116.6	117.2	117.0	1.03	0.98
MT030042	MT910189/MT960099	135.1	103.4	103.8	120.9	120.1	116.6	0.78	0.89
MT010081	MT886610/H1851195	149.3	98.3	103.9	113.7	118.0	116.6	1.19	0.94
MT970229	MT890021/Stark	136.1	94.8	115.8	109.8	124.2	116.1	0.74	0.60
MT010158	MT920041/Harrington	131.8	101.0	105.8	116.3	125.6	116.1	0.72	0.80
MT981210	MT910150/Stark	143.0	104.6	98.8	111.9	118.8	115.4	1.06	1.00
MT030160	MTLB 5/MT950155	155.0	100.5	99.9	107.9	112.0	115.1	1.37	0.94
2B965057	<b>Conrad</b>	146.7	105.7	94.0	113.6	114.8	115.0	1.20	0.98
MT020204	MTLB 32/H1851195	137.6	109.2	101.9	111.2	114.8	114.9	0.83	0.98
MT030152	MTLB 5/MT940053	144.7	99.4	95.5	120.3	112.9	114.5	1.16	0.92
MT000125	MT910189/Lewis	143.4	107.6	102.3	109.0	110.1	114.5	0.97	0.91
S3482	<b>Calgary</b>	136.8	114.3	99.3	110.0	111.4	114.3	0.79	0.86
MT010191	MT920053/Harrington	148.4	99.3	97.9	113.2	112.1	114.2	1.24	0.96
MT020064	MT910160/H1851195	127.7	109.0	95.0	118.8	120.2	114.1	0.68	0.76
MT010213	MT920073/Logan	135.4	104.9	97.6	110.0	122.4	114.1	0.91	0.96
MT030047	MT910189/MT960101	144.4	101.5	96.3	112.6	115.4	114.0	1.15	0.99
NORD2125	<b>Marthe</b>	137.4	104.1	102.8	115.9	109.1	113.9	0.83	0.90
MT000138	MT920041/H1851195	135.7	103.8	108.7	101.5	120.0	113.9	0.77	0.78
MT030168	MTLB 5/MT960101	145.5	95.7	93.0	113.5	121.4	113.8	1.30	0.97
6B952482	<b>Tradition</b>	136.1	108.7	98.4	113.8	111.4	113.7	0.83	0.94
MT030063	MT950155/Harrington	134.6	101.2	90.3	118.3	124.2	113.7	1.01	0.84
MT030188	MTLB 13/MT950102	139.7	105.4	104.8	106.9	111.7	113.7	0.88	0.92
MT020155	MT960225/H1851195	133.1	113.2	95.4	105.4	120.9	113.6	0.81	0.83
2B914947	<b>Merit</b>	148.1	99.9	101.6	109.8	108.2	113.5	1.16	0.90
<b>MT910189</b>	ND 7293/Bearpaw	146.5	103.0	97.6	103.1	115.7	113.2	1.20	0.96
MT010212	MT920073/Baronesse	144.1	101.0	91.1	107.6	122.2	113.2	1.26	0.98
MT950186	<b>Haxby</b>	128.5	115.9	85.2	115.4	120.5	113.1	0.80	0.62
MT030051	MT910189/MTLB 06	137.6	106.3	94.6	105.3	121.5	113.0	1.01	0.94
<b>MT960101</b>	Manley/Baronesse	154.5	97.7	89.9	112.0	109.0	112.6	1.52	0.96

continued

**Table 9 Irr Barley Yield cont:**

		Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
MT030107	MT960101/MT960225	147.3	94.3	95.5	111.9	113.6	112.5	1.30	0.96
MT010080	MT886610/H1851195	136.5	97.9	96.6	110.1	120.4	112.3	1.01	0.96
MT030036	Logan/MT960099	128.0	108.2	95.7	106.1	118.8	111.3	0.72	0.88
MT020205	MTLB 32/H1851195	132.1	109.9	93.4	104.6	115.8	111.1	0.84	0.90
YU587432	Baronesse/ORCA	129.3	102.7	99.7	108.7	114.5	111.0	0.72	0.99
MT030144	MTLB 5/Harrington	129.6	102.1	85.4	114.3	123.7	111.0	0.97	0.78
MT020167	MT960225/H3860224	142.2	103.0	85.8	110.0	113.5	110.9	1.25	0.97
<b>MT970116</b>	Klages/Baronesse	134.9	102.2	89.9	105.9	119.1	110.4	1.04	0.95
PI610264	<b>Valier</b>	133.9	106.3	92.7	107.8	111.5	110.4	0.90	0.96
PI568246	<b>Baronesse</b>	142.7	95.2	94.0	100.5	118.0	110.1	1.25	0.96
MT010160	MT920041/Harrington	137.8	95.9	92.6	104.7	119.8	110.1	1.14	0.96
BZ596117	<b>Boulder</b>	127.0	99.3	92.7	102.8	123.0	109.0	0.85	0.82
MT010162	MT920041/Harrington	130.1	90.9	100.9	106.5	115.7	108.8	0.85	0.84
PI491534	<b>Gallatin</b>	130.4	98.2	94.3	106.6	112.0	108.3	0.88	1.00
MT030093	MT960099/Harrington	132.4	104.5	88.9	101.5	111.7	107.8	0.96	0.94
MT030039	Logan/MT960101	128.4	96.8	98.9	102.2	111.9	107.6	0.78	0.94
MT030046	MT910189/MT960101	131.0	99.2	90.6	101.3	110.5	106.5	0.95	0.99
6B932978	<b>Legacy</b>	137.4	118.4	87.2	96.9	91.1	106.2	0.94	0.51
MT030003	Harrington/MT950102	138.0	88.4	89.0	103.5	110.9	106.0	1.24	0.97
99373119	<b>Shakira</b>	119.7	80.4	90.3	102.6	110.5	100.7	0.85	0.76
SK 76333	<b>Harrington</b>	127.2	92.3	85.8	96.8	99.4	100.3	0.98	0.98
CI 15773	<b>Morex</b>	134.0	105.1	73.7	93.0	88.1	98.8	1.19	0.72
MT981060	<b>Hays - forage</b>	118.6	75.9	82.0	97.7	109.2	96.7	1.00	0.81
SiteMean	SITE MEAN	138.9	103.2	96.9	109.9	116.0	113.0	1.00	1.00
C.V.	C.V. (S/Mean) * 100	5.13	8.59	7.37	6.26	5.14	5.59	***	***
F-Value		3.93	2.25	3.08	2.51	4.10	<.0001	***	***
L.S.D.	L.S.D. (.05)	12.35	15.18	12.20	11.65	10.32	7.86	***	***

**Table 10. 2005 Montana Irrigated Intrastate Barley – Test Weight (lb/bu)**

ID	Pedigree	Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
BZ594-19	<b>WB Xena</b>	50.9	48.8	50.0	53.6	49.4	50.5	0.86	0.78
MT030081	MT950186/MT960226	51.8	48.7	50.0	54.2	50.4	51.0	1.02	0.89
YU501385	Baronesse/Camas	52.1	49.8	49.9	54.7	52.7	51.8	1.01	0.89
MT020162	MT960225/H1851195	51.6	49.1	50.6	53.7	52.4	51.5	0.88	0.96
MT030173	MTLB 5/Manley	50.9	49.9	50.6	53.9	50.6	51.2	0.75	0.84
MT020166	MT960225/H3860224	50.6	49.4	49.1	53.9	50.7	50.7	0.91	0.85
P952R522	<b>Spaulding</b>	51.4	49.3	51.0	54.4	52.6	51.7	0.98	0.98
MT030137	MTLB 2/MT940053	51.0	49.9	50.9	53.9	53.2	51.8	0.80	0.84
MT030079	MT950186/MT960225	50.9	50.8	51.7	54.8	52.5	52.1	0.77	0.82
MT030035	Logan/MT960099	50.2	45.6	49.3	52.2	50.1	49.5	1.18	0.89
MT960228	<b>Eslick</b>	49.5	49.1	49.7	53.8	50.4	50.5	0.90	0.84
MT000047	Chinook/MT920161	50.6	49.0	50.8	53.8	51.4	51.1	0.88	0.97
MT000040	Chinook/MT920161	51.9	48.1	51.4	53.5	51.9	51.4	0.95	0.85
MT030042	MT910189/MT960099	49.6	50.0	51.7	55.5	52.8	51.9	1.05	0.73
MT010081	MT886610/H1851195	51.6	49.2	49.4	54.4	52.3	51.4	1.05	0.90
MT970229	MT890021/Stark	51.3	49.5	52.6	55.0	53.5	52.4	1.00	0.84
MT010158	MT920041/Harrington	51.3	47.6	50.0	54.3	51.5	50.9	1.24	0.98
MT981210	MT910150/Stark	51.6	48.1	49.7	55.1	51.6	51.2	1.34	0.98
MT030160	MTLB 5/MT950155	50.6	46.3	49.6	52.3	50.2	49.8	1.07	0.88
2B965057	<b>Conrad</b>	50.3	48.0	49.1	52.6	50.6	50.1	0.88	0.98
MT020204	MTLB 32/H1851195	51.0	49.5	49.9	55.2	52.9	51.7	1.17	0.91
MT030152	MTLB 5/MT940053	51.2	49.2	50.3	54.3	50.6	51.1	0.95	0.91
MT000125	MT910189/Lewis	51.6	49.2	52.0	53.2	52.5	51.7	0.71	0.80
S3482	<b>Calgary</b>	50.2	47.3	49.3	53.5	49.3	49.9	1.12	0.92
MT010191	MT920053/Harrington	51.1	47.6	49.9	52.8	50.8	50.4	0.96	0.93
MT020064	MT910160/H1851195	52.7	47.7	50.7	54.4	52.8	51.7	1.24	0.88
MT010213	MT920073/Logan	51.3	50.4	51.7	55.5	52.7	52.3	0.97	0.91
MT030047	MT910189/MT960101	51.3	47.1	48.6	53.3	50.8	50.2	1.19	0.91
NORD2125	<b>Marthe</b>	48.7	46.2	48.9	52.4	48.5	48.9	1.10	0.92
MT000138	MT920041/H1851195	52.8	49.8	52.1	55.5	53.4	52.7	1.06	0.98
MT030168	MTLB 5/MT960101	50.2	50.0	50.6	54.7	51.2	51.3	0.90	0.81
6B952482	<b>Tradition</b>	47.5	47.1	47.2	52.3	48.8	48.6	1.04	0.84
MT030063	MT950155/Harrington	52.0	50.0	51.0	55.4	53.2	52.3	1.07	0.97
MT030188	MTLB 13/MT950102	51.0	48.2	49.3	53.3	52.0	50.8	1.02	0.92
MT020155	MT960225/H1851195	49.4	48.2	49.3	53.5	52.4	50.6	1.07	0.84
2B914947	<b>Merit</b>	51.3	46.0	47.6	49.9	45.5	48.0	0.63	0.24
<b>MT910189</b>	ND 7293/Bearpaw	48.3	48.9	50.7	52.7	52.7	50.7	0.74	0.49
MT010212	MT920073/Baronesse	51.1	47.8	48.5	52.5	50.9	50.2	0.94	0.87
MT950186	<b>Haxby</b>	52.0	50.3	49.8	54.4	53.3	51.9	0.89	0.78
MT030051	MT910189/MTLB 06	50.6	48.8	51.2	54.7	52.2	51.5	1.09	0.94
<b>MT960101</b>	Manley/Baronesse	50.3	46.7	49.9	54.0	49.4	50.0	1.29	0.91

continued

**Table 10 Irr Barley Test Wt cont:**

		Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
MT030107	MT960101/MT960225	49.6	46.8	50.2	53.6	50.3	50.1	1.22	0.94
MT010080	MT886610/H1851195	51.3	47.5	50.7	53.5	52.5	51.1	1.11	0.88
MT030036	Logan/MT960099	50.7	47.6	51.0	53.6	52.5	51.1	1.10	0.87
MT020205	MTLB 32/H1851195	50.8	49.6	49.5	52.8	52.4	51.0	0.69	0.76
YU587432	Baronesse/ORCA	50.1	47.9	50.1	54.5	51.7	50.8	1.25	0.98
MT030144	MTLB 5/Harrington	50.0	49.4	51.4	54.9	52.9	51.7	1.05	0.83
MT020167	MT960225/H3860224	51.8	48.5	50.1	54.3	52.0	51.3	1.10	0.97
<b>MT970116</b>	Klages/Baronesse	52.2	49.4	51.1	54.0	53.3	52.0	0.88	0.89
PI610264	<b>Valier</b>	51.7	49.4	50.1	53.8	50.8	51.2	0.83	0.89
PI568246	<b>Baronesse</b>	50.1	48.2	49.1	51.6	50.5	49.9	0.66	0.96
MT010160	MT920041/Harrington	52.0	45.7	49.5	53.4	51.4	50.4	1.41	0.84
BZ596117	<b>Boulder</b>	50.4	50.7	50.6	55.2	53.7	52.1	0.95	0.71
MT010162	MT920041/Harrington	51.8	46.9	49.0	52.6	50.2	50.1	1.06	0.81
PI491534	<b>Gallatin</b>	50.9	49.3	50.1	54.5	51.9	51.4	1.02	0.97
MT030093	MT960099/Harrington	50.3	48.1	47.9	52.4	48.8	49.5	0.84	0.75
MT030039	Logan/MT960101	50.5	49.1	51.7	54.3	51.9	51.5	0.93	0.88
MT030046	MT910189/MT960101	51.3	49.1	50.4	53.8	52.4	51.4	0.92	0.96
6B932978	<b>Legacy</b>	46.5	45.4	46.8	49.0	45.4	46.6	0.60	0.62
MT030003	Harrington/MT950102	50.8	45.6	50.4	52.1	51.3	50.0	1.13	0.73
99373119	<b>Shakira</b>	48.5	46.2	49.0	53.1	47.7	48.9	1.20	0.81
SK 76333	<b>Harrington</b>	49.2	45.6	46.0	51.4	47.1	47.9	1.11	0.79
CI 15773	<b>Morex</b>	48.0	45.3	46.6	50.4	48.3	47.7	0.98	0.98
MT981060	<b>Hays - forage</b>	44.8	43.9	46.3	50.6	47.2	46.5	1.24	0.86
SiteMean	SITE MEAN	50.6	48.2	49.9	53.5	51.1	50.7	1.00	1.00
C.V.	C.V. (S/Mean) * 100	***	1.96	1.63	***	1.29	1.72	***	***
F-Value		***	7.25	8.53	***	16.57	<.0001	***	***
L.S.D.	L.S.D. (.05)	***	1.64	1.35	***	1.32	1.09	***	***

**Table 11. 2005 Montana Irrigated Intrastate Barley – Plump percent**

ID	Pedigree	Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
BZ594-19	<b>WB Xena</b>	95.4	90.0	83.8	94	32.6	79.1	1.95	0.86
MT030081	MT950186/MT960226	96.1	87.0	76.7	98	47.8	81.1	1.61	0.98
YU501385	Baronesse/Camas	97.4	84.0	78.6	98	65.2	84.6	1.08	0.98
MT020162	MT960225/H1851195	97.5	90.0	85.0	98	71.2	88.3	0.87	0.99
MT030173	MTLB 5/Manley	95.9	86.0	79.5	97	54.5	82.6	1.36	0.98
MT020166	MT960225/H3860224	95.3	88.0	83.5	98	72.1	87.4	0.81	0.99
P952R522	<b>Spaulding</b>	93.3	90.0	81.1	94	72.5	86.2	0.71	0.95
MT030137	MTLB 2/MT940053	95.4	86.0	82.5	97	75.8	87.3	0.69	0.95
MT030079	MT950186/MT960225	91.1	91.0	89.6	94	61.8	85.5	0.95	0.80
MT030035	Logan/MT960099	94.9	84.0	81.9	96	58.6	83.1	1.19	0.99
MT960228	<b>Eslick</b>	90.8	66.0	69.8	97	35.6	71.8	1.88	0.95
MT000047	Chinook/MT920161	92.9	92.0	80.7	96	58.0	83.9	1.19	0.92
MT000040	Chinook/MT920161	98.1	85.0	85.7	90	62.8	84.3	0.99	0.90
MT030042	MT910189/MT960099	87.2	83.0	81.5	96	64.6	82.5	0.87	0.91
MT010081	MT886610/H1851195	96.2	91.0	76.8	95	70.4	85.9	0.88	0.91
MT970229	MT890021/Stark	97.7	88.0	93.1	98	81.5	91.6	0.51	0.85
MT010158	MT920041/Harrington	96.2	90.0	85.8	97	76.0	89.0	0.68	0.99
MT981210	MT910150/Stark	96.6	90.0	81.6	99	79.7	89.4	0.64	0.87
MT030160	MTLB 5/MT950155	88.9	70.0	66.0	95	42.6	72.5	1.62	0.97
2B965057	<b>Conrad</b>	96.4	95.0	83.5	97	67.3	87.8	0.97	0.92
MT020204	MTLB 32/H1851195	93.8	77.0	72.2	96	67.5	81.3	0.94	0.85
MT030152	MTLB 5/MT940053	95.8	89.0	79.3	95	40.7	80.0	1.75	0.93
MT000125	MT910189/Lewis	96.2	93.0	88.8	97	78.9	90.8	0.58	0.98
S3482	<b>Calgary</b>	93.0	79.0	70.0	94	49.9	77.2	1.45	1.00
MT010191	MT920053/Harrington	97.0	77.0	83.3	92	62.1	82.3	1.03	0.90
MT020064	MT910160/H1851195	98.5	89.0	90.2	98	85.6	92.2	0.42	0.85
MT010213	MT920073/Logan	96.0	91.0	84.3	98	70.5	88.0	0.87	0.98
MT030047	MT910189/MT960101	97.3	76.0	74.5	92	71.3	82.2	0.80	0.75
NORD2125	<b>Marthe</b>	95.0	94.0	87.7	96	63.9	87.3	1.01	0.89
MT000138	MT920041/H1851195	98.3	94.0	94.2	98	85.3	94.0	0.41	0.96
MT030168	MTLB 5/MT960101	90.4	74.0	78.4	93	34.5	74.0	1.79	0.92
6B952482	<b>Tradition</b>	96.2	93.0	74.8	97	72.5	86.7	0.86	0.81
MT030063	MT950155/Harrington	98.2	92.0	86.6	99	76.8	90.5	0.73	1.00
MT030188	MTLB 13/MT950102	97.1	88.0	76.6	95	61.9	83.7	1.14	0.97
MT020155	MT960225/H1851195	92.1	80.0	75.9	95	73.0	83.2	0.71	0.83
2B914947	<b>Merit</b>	95.5	88.0	70.9	87	36.2	75.5	1.79	0.91
<b>MT910189</b>	ND 7293/Bearpaw	91.9	95.0	86.8	98	82.2	90.8	0.44	0.76
MT010212	MT920073/Baronesse	96.8	82.0	78.2	92	68.9	83.6	0.85	0.94
MT950186	<b>Haxby</b>	97.1	86.0	80.2	99	72.4	86.9	0.87	0.95
MT030051	MT910189/MTLB 06	94.7	84.0	85.3	97	74.7	87.1	0.69	0.94
<b>MT960101</b>	Manley/Baronesse	93.2	67.0	68.2	94	32.0	70.9	1.99	0.98

continued

**Table 11 Irr Barley Plump cont:**

		Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
MT030107	MT960101/MT960225	94.5	82.0	78.7	96	44.1	79.1	1.64	0.97
MT010080	MT886610/H1851195	96.2	83.0	83.0	96	80.2	87.7	0.54	0.77
MT030036	Logan/MT960099	97.4	84.0	85.7	98	70.0	87.0	0.89	0.96
MT020205	MTLB 32/H1851195	95.1	89.0	76.0	94	75.4	85.9	0.69	0.82
YU587432	Baronesse/ORCA	95.6	88.0	81.0	96	58.9	83.9	1.20	0.98
MT030144	MTLB 5/Harrington	95.0	92.0	89.8	98	78.6	90.7	0.58	0.96
MT020167	MT960225/H3860224	97.4	88.0	84.1	98	77.4	89.0	0.68	0.95
<b>MT970116</b>	Klages/Baronesse	95.5	94.0	87.7	97	74.9	89.8	0.70	0.94
PI610264	<b>Valier</b>	97.2	83.0	72.7	95	46.1	78.8	1.64	0.99
PI568246	<b>Baronesse</b>	96.8	79.0	67.6	84	78.5	81.2	0.48	0.33
MT010160	MT920041/Harrington	96.6	76.0	73.9	93	68.3	81.6	0.90	0.83
BZ596117	<b>Boulder</b>	96.8	91.0	79.1	97	74.7	87.7	0.78	0.90
MT010162	MT920041/Harrington	95.4	84.0	77.0	92	56.0	80.9	1.23	0.99
PI491534	<b>Gallatin</b>	92.9	89.0	81.1	94	60.3	83.4	1.08	0.95
MT030093	MT960099/Harrington	95.6	84.0	72.0	91	34.3	75.4	1.91	0.95
MT030039	Logan/MT960101	94.0	85.0	91.3	97	75.9	88.6	0.60	0.82
MT030046	MT910189/MT960101	96.0	89.0	72.0	92	64.3	82.7	1.03	0.89
6B932978	<b>Legacy</b>	90.4	77.0	70.5	83	82.9	80.8	0.20	0.11
MT030003	Harrington/MT950102	97.4	81.0	90.2	96	84.2	89.7	0.40	0.49
99373119	<b>Shakira</b>	95.6	92.0	89.8	98	64.6	88.0	1.02	0.91
SK 76333	<b>Harrington</b>	93.5	82.0	71.1	90	51.8	77.7	1.33	0.99
CI 15773	<b>Morex</b>	91.8	81.0	72.2	88	93.2	85.2	-0.01	0.00
MT981060	<b>Hays - forage</b>	85.7	48.0	63.0	86	26.2	61.8	1.89	0.87
SiteMean	SITE MEAN	95.0	84.9	80.0	95	64.5	83.9	1.00	1.00
C.V.	C.V. (S/Mean) * 100	***	***	7.38	***	13.06	8.84	***	***
F-Value		***	***	4.33	***	7.24	<.0001	***	***
L.S.D.	L.S.D. (.05)	***	***	9.92	***	16.94	9.24	***	***

**Table 12. 2005 Montana Irrigated Intrastate Barley – Head Date**  
Days from January 1

ID	Pedigree	Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
BZ594-19	<b>WB Xena</b>	175.8	173.3	171.3	182	188.5	178.2	1.05	0.99
MT030081	MT950186/MT960226	173.9	172.3	170.0	182	187.5	177.1	1.10	0.99
YU501385	Baronesse/Camas	172.1	172.2	170.3	180	187.0	176.3	1.05	0.99
MT020162	MT960225/H1851195	175.2	174.3	172.3	182	188.7	178.5	1.01	0.99
MT030173	MTLB 5/Manley	175.7	175.3	171.0	182	187.8	178.4	0.98	0.99
MT020166	MT960225/H3860224	173.1	173.7	172.7	181	188.0	177.7	1.00	0.98
P952R522	<b>Spaulding</b>	173.6	174.2	171.3	181	187.5	177.5	1.00	1.00
MT030137	MTLB 2/MT940053	173.4	173.5	169.3	180	185.1	176.3	0.94	1.00
MT030079	MT950186/MT960225	174.8	172.9	170.3	183	187.8	177.8	1.09	0.98
MT030035	Logan/MT960099	174.5	174.1	172.3	183	187.4	178.3	0.98	0.98
MT960228	<b>Eslick</b>	174.8	175.2	174.7	183	189.3	179.4	0.97	0.97
MT000047	Chinook/MT920161	173.5	172.5	169.3	180	186.0	176.3	1.00	0.99
MT000040	Chinook/MT920161	173.5	174.4	169.7	180	187.3	177.0	1.02	0.98
MT030042	MT910189/MT960099	172.1	173.5	169.7	179	186.7	176.2	1.01	0.98
MT010081	MT886610/H1851195	174.3	174.3	169.7	181	187.6	177.4	1.05	0.99
MT970229	MT890021/Stark	175.2	173.4	171.3	182	188.0	178.0	1.03	0.99
MT010158	MT920041/Harrington	173.4	174.1	171.0	182	187.0	177.5	1.01	0.99
MT981210	MT910150/Stark	174.0	175.3	171.0	181	188.8	178.0	1.05	0.98
MT030160	MTLB 5/MT950155	175.7	174.6	170.7	183	189.0	178.6	1.10	0.99
2B965057	<b>Conrad</b>	173.8	174.9	170.7	182	188.0	177.9	1.05	0.99
MT020204	MTLB 32/H1851195	173.1	173.0	169.7	179	185.8	176.1	0.96	1.00
MT030152	MTLB 5/MT940053	175.2	174.8	171.0	182	188.6	178.3	1.05	1.00
MT000125	MT910189/Lewis	173.8	174.4	171.0	181	187.0	177.4	0.98	1.00
S3482	<b>Calgary</b>	175.0	175.3	175.0	183	188.2	179.3	0.89	0.96
MT010191	MT920053/Harrington	178.8	176.3	173.3	184	189.9	180.5	0.98	0.98
MT020064	MT910160/H1851195	173.5	174.3	170.3	180	187.3	177.1	1.00	0.99
MT010213	MT920073/Logan	174.9	175.8	170.0	182	188.8	178.3	1.08	0.98
MT030047	MT910189/MT960101	174.6	174.8	171.3	180	187.8	177.7	0.96	0.99
NORD2125	<b>Marthe</b>	181.3	176.0	178.7	184	189.9	182.0	0.74	0.85
MT000138	MT920041/H1851195	172.4	171.9	168.0	181	184.6	175.6	1.03	0.98
MT030168	MTLB 5/MT960101	175.5	175.5	172.7	182	188.6	178.8	0.97	1.00
6B952482	<b>Tradition</b>	172.9	171.5	167.0	179	185.2	175.1	1.06	0.99
MT030063	MT950155/Harrington	175.2	173.5	171.7	182	188.7	178.2	1.06	1.00
MT030188	MTLB 13/MT950102	173.2	174.3	169.7	180	187.0	176.8	1.01	0.99
MT020155	MT960225/H1851195	171.0	170.0	166.3	178	183.0	173.6	1.00	0.99
2B914947	<b>Merit</b>	181.9	176.4	176.0	186	190.0	182.1	0.87	0.91
<b>MT910189</b>	ND 7293/Bearpaw	171.9	173.2	170.0	180	185.3	176.1	0.96	0.99
MT010212	MT920073/Baronesse	174.4	175.0	171.3	181	187.9	177.9	0.99	0.99
MT950186	<b>Haxby</b>	174.9	172.6	169.3	182	186.6	177.1	1.05	0.98
MT030051	MT910189/MTLB 06	172.8	172.9	169.3	180	186.5	176.3	1.04	1.00
<b>MT960101</b>	Manley/Baronesse	175.6	175.7	175.0	183	189.3	179.7	0.93	0.97

continued

**Table 12 Irr Bly Head Date cont:**

		Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
MT030107	MT960101/MT960225	174.4	174.4	171.0	182	187.6	177.9	1.01	0.99
MT010080	MT886610/H1851195	172.8	172.2	169.3	179	185.8	175.8	0.99	0.99
MT030036	Logan/MT960099	174.0	173.8	170.3	180	187.3	177.1	1.00	0.99
MT020205	MTLB 32/H1851195	172.9	173.4	169.0	181	185.7	176.4	1.01	0.99
YU587432	Baronesse/ORCA	172.8	173.9	170.7	181	185.6	176.8	0.94	0.99
MT030144	MTLB 5/Harrington	173.0	173.9	169.3	179	186.2	176.3	0.97	0.98
MT020167	MT960225/H3860224	174.0	173.4	174.3	182	187.0	178.2	0.89	0.95
<b>MT970116</b>	<b>Klages/Baronesse</b>	172.8	172.8	169.0	180	186.9	176.3	1.07	0.99
PI610264	<b>Valier</b>	177.9	174.9	171.0	183	188.7	179.1	1.02	0.96
PI568246	<b>Baronesse</b>	174.3	174.2	172.7	182	189.2	178.5	1.05	0.99
MT010160	MT920041/Harrington	174.2	174.5	172.0	181	188.5	178.0	1.01	0.99
BZ596117	<b>Boulder</b>	174.6	175.3	173.0	181	187.4	178.2	0.89	0.99
MT010162	MT920041/Harrington	175.3	175.5	173.0	182	189.0	179.0	0.98	0.99
PI491534	<b>Gallatin</b>	174.0	172.5	169.3	180	186.3	176.4	1.01	0.99
MT030093	MT960099/Harrington	175.4	175.0	176.7	183	189.0	179.8	0.87	0.92
MT030039	Logan/MT960101	170.1	170.1	165.7	177	183.1	173.2	1.03	0.99
MT030046	MT910189/MT960101	173.8	174.8	173.3	182	189.2	178.6	1.02	0.98
6B932978	<b>Legacy</b>	174.8	171.3	168.0	181	185.8	176.2	1.06	0.96
MT030003	Harrington/MT950102	171.9	173.1	169.3	180	185.7	176.0	1.00	0.99
99373119	<b>Shakira</b>	177.5	174.4	173.0	184	189.3	179.6	1.02	0.98
SK 76333	<b>Harrington</b>	175.4	175.4	172.3	183	188.9	179.0	1.02	1.00
CI 15773	<b>Morex</b>	172.1	169.9	165.3	180	183.7	174.2	1.11	0.96
MT981060	<b>Hays - forage</b>	176.0	174.6	176.7	183	189.3	179.9	0.89	0.92
SiteMean	SITE MEAN	174.3	173.9	171.1	181	187.4	177.6	1.00	1.00
C.V.	C.V. (S/Mean) * 100	0.52	0.47	0.51	***	0.31	0.55	***	***
F-Value		14.17	8.19	25.18	***	21.04	<.0001	***	***
L.S.D.	L.S.D. (.05)	1.52	1.41	1.41	***	0.99	1.23	***	***

**Table 13. 2005 Montana Irrigated Intrastate Barley – Height (inches)**

ID	Pedigree	Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
BZ594-19	<b>WB Xena</b>	36.4	33.4	42.3	35	33.4	36.1	0.77	0.89
MT030081	MT950186/MT960226	36.1	34.8	44.2	37	36.0	37.6	0.84	0.98
YU501385	Baronesse/Camas	34.9	32.8	43.9	34	34.3	36.0	1.00	0.98
MT020162	MT960225/H1851195	38.5	36.2	44.2	38	36.1	38.6	0.70	0.90
MT030173	MTLB 5/Manley	33.0	30.6	42.4	34	34.8	35.0	0.99	0.98
MT020166	MT960225/H3860224	32.6	32.9	42.2	34	36.5	35.6	0.84	0.89
P952R522	<b>Spaulding</b>	33.8	32.7	43.0	33	35.6	35.6	0.93	0.93
MT030137	MTLB 2/MT940053	31.4	29.8	43.7	33	32.9	34.1	1.22	0.99
MT030079	MT950186/MT960225	35.3	33.8	42.4	36	35.5	36.6	0.76	1.00
MT030035	Logan/MT960099	33.6	31.6	43.6	36	34.3	35.8	1.03	0.98
MT960228	<b>Eslick</b>	29.6	28.4	42.0	28	31.4	31.9	1.25	0.92
MT000047	Chinook/MT920161	35.8	30.4	46.1	35	34.7	36.4	1.29	0.98
MT000040	Chinook/MT920161	33.6	30.2	42.0	35	36.2	35.4	0.93	0.91
MT030042	MT910189/MT960099	30.4	29.5	43.8	33	33.0	33.9	1.27	0.98
MT010081	MT886610/H1851195	37.2	29.4	43.8	35	36.0	36.3	1.08	0.86
MT970229	MT890021/Stark	33.4	30.7	43.9	34	33.2	35.0	1.15	1.00
MT010158	MT920041/Harrington	32.8	29.3	43.6	34	34.5	34.8	1.17	0.98
MT981210	MT910150/Stark	32.4	32.3	44.4	34	35.4	35.7	1.10	0.96
MT030160	MTLB 5/MT950155	33.9	29.3	41.8	32	31.6	33.7	1.04	0.94
2B965057	<b>Conrad</b>	32.7	29.4	43.1	33	33.5	34.3	1.15	0.99
MT020204	MTLB 32/H1851195	34.2	31.5	44.1	35	35.0	35.9	1.07	1.00
MT030152	MTLB 5/MT940053	35.5	31.5	43.6	37	33.6	36.3	0.99	0.92
MT000125	MT910189/Lewis	35.4	32.6	43.3	37	35.3	36.7	0.88	0.96
S3482	<b>Calgary</b>	27.5	26.7	37.0	27	31.2	29.9	0.91	0.86
MT010191	MT920053/Harrington	33.0	30.5	42.0	34	36.6	35.2	0.93	0.90
MT020064	MT910160/H1851195	33.7	30.8	43.1	35	36.4	35.8	1.00	0.95
MT010213	MT920073/Logan	30.8	29.1	42.7	33	33.3	33.8	1.17	0.98
MT030047	MT910189/MT960101	31.0	30.0	40.8	33	31.6	33.3	0.96	0.98
NORD2125	<b>Marthe</b>	33.1	30.1	35.2	29	30.4	31.5	0.45	0.62
MT000138	MT920041/H1851195	36.2	33.2	47.4	35	37.4	37.8	1.23	0.97
MT030168	MTLB 5/MT960101	34.3	31.2	42.1	35	34.1	35.4	0.91	0.99
6B952482	<b>Tradition</b>	39.4	34.4	47.6	39	40.3	40.1	1.03	0.94
MT030063	MT950155/Harrington	36.7	34.6	44.7	37	36.0	37.8	0.88	0.99
MT030188	MTLB 13/MT950102	35.6	31.9	43.4	33	34.6	35.7	0.99	0.94
MT020155	MT960225/H1851195	35.2	32.5	46.3	37	34.1	37.0	1.21	0.97
2B914947	<b>Merit</b>	36.7	33.8	41.9	35	33.5	36.2	0.71	0.86
<b>MT910189</b>	ND 7293/Bearpaw	35.7	31.3	43.7	34	32.8	35.5	1.06	0.94
MT010212	MT920073/Baronesse	33.5	31.7	42.6	33	33.1	34.8	0.98	0.98
MT950186	<b>Haxby</b>	35.6	33.5	44.2	36	35.1	36.9	0.94	0.99
MT030051	MT910189/MTLB 06	35.0	32.6	43.5	35	34.2	36.1	0.95	0.99
<b>MT960101</b>	Manley/Baronesse	34.1	30.2	42.2	32	32.6	34.2	1.03	0.96

continued

**Table 13 Irr Barley Height cont:**

		Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
MT030107	MT960101/MT960225	30.9	31.0	40.7	30	33.5	33.2	0.92	0.87
MT010080	MT886610/H1851195	35.6	32.5	46.3	37	36.5	37.6	1.16	1.00
MT030036	Logan/MT960099	32.5	31.6	44.2	34	35.0	35.4	1.12	0.98
MT020205	MTLB 32/H1851195	34.1	31.4	46.4	36	36.3	36.8	1.27	0.99
YU587432	Baronesse/ORCA	32.9	29.3	42.5	34	32.8	34.3	1.10	0.99
MT030144	MTLB 5/Harrington	32.4	31.2	43.2	36	33.7	35.3	1.04	0.95
MT020167	MT960225/H3860224	33.9	33.4	42.7	36	36.2	36.4	0.82	0.96
<b>MT970116</b>	<b>Klages/Baronesse</b>	<b>38.7</b>	<b>35.6</b>	<b>45.8</b>	<b>38</b>	<b>38.9</b>	<b>39.4</b>	<b>0.85</b>	<b>0.98</b>
PI610264	<b>Valier</b>	35.4	31.5	43.0	36	34.8	36.1	0.93	0.97
PI568246	<b>Baronesse</b>	31.2	30.1	43.0	32	30.3	33.3	1.19	0.95
MT010160	MT920041/Harrington	35.7	32.5	44.8	37	34.2	36.8	1.04	0.95
BZ596117	<b>Boulder</b>	31.7	29.1	41.9	36	33.2	34.4	1.04	0.90
MT010162	MT920041/Harrington	33.1	30.2	41.5	32	34.3	34.2	0.95	0.96
PI491534	<b>Gallatin</b>	35.2	32.8	44.8	36	34.3	36.6	1.04	0.98
MT030093	MT960099/Harrington	31.2	30.7	41.8	36	33.7	34.7	0.95	0.89
MT030039	Logan/MT960101	30.5	30.3	42.8	35	29.8	33.7	1.15	0.87
MT030046	MT910189/MT960101	33.4	32.7	43.4	36	35.6	36.2	0.94	0.96
6B932978	<b>Legacy</b>	38.5	33.5	47.6	38	39.5	39.4	1.12	0.95
MT030003	Harrington/MT950102	33.2	31.5	44.7	35	35.3	36.0	1.14	0.99
99373119	<b>Shakira</b>	26.8	27.6	35.7	27	27.3	28.9	0.80	0.89
SK 76333	<b>Harrington</b>	33.8	32.0	42.8	34	34.6	35.4	0.94	0.99
CI 15773	<b>Morex</b>	41.6	38.3	50.0	42	42.0	42.8	0.97	0.99
MT981060	<b>Hays - forage</b>	32.2	32.7	40.6	35	33.3	34.8	0.74	0.92
Site Mean	SITE MEAN	34.0	31.6	43.3	35	34.5	35.6	1.00	1.00
C.V.	C.V. (S/Mean) * 100	6.08	5.35	3.29	***	3.85	3.49	***	***
F-Value		4.41	4.11	8.60	***	9.26	<.0001	***	***
L.S.D.	L.S.D. (.05)	3.54	2.90	2.30	***	2.19	1.55	***	***

**Table 14. 2005 Montana Irrigated Intrastate Barley – Protein percent**

ID	Pedigree	Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
BZ594-19	<b>WB Xena</b>	12.0	12.1	12.6	11.7	14.2	12.5	1.24	0.91
MT030081	MT950186/MT960226	11.4	12.7	13.1	12.3	14.9	12.9	1.40	0.69
YU501385	Baronesse/Camas	12.6	11.9	14.2	11.3	13.2	12.6	1.02	0.47
MT020162	MT960225/H1851195	13.2	14.0	13.4	13.3	14.7	13.7	0.66	0.62
MT030173	MTLB 5/Manley	13.4	12.8	12.6	12.1	15.0	13.2	1.27	0.73
MT020166	MT960225/H3860224	12.1	12.6	11.7	11.2	13.8	12.3	1.13	0.75
P952R522	<b>Spaulding</b>	11.9	12.1	12.6	11.2	12.8	12.1	0.76	0.89
MT030137	MTLB 2/MT940053	13.8	13.4	14.0	13.5	15.4	14.0	0.93	0.78
MT030079	MT950186/MT960225	12.2	12.6	12.8	11.6	13.5	12.5	0.91	0.97
MT030035	Logan/MT960099	11.7	13.0	12.4	11.8	13.9	12.5	1.01	0.74
MT960228	<b>Eslick</b>	12.3	12.8	12.4	11.3	14.3	12.6	1.36	0.92
MT000047	Chinook/MT920161	13.0	13.0	14.2	12.6	14.7	13.5	1.11	0.87
MT000040	Chinook/MT920161	14.3	13.9	13.9	13.0	15.5	14.1	1.11	0.85
MT030042	MT910189/MT960099	12.6	12.0	12.9	11.0	12.6	12.2	0.74	0.53
MT010081	MT886610/H1851195	13.0	13.0	14.1	12.9	14.6	13.5	0.93	0.80
MT970229	MT890021/Stark	13.4	12.9	12.1	12.1	14.4	13.0	0.92	0.52
MT010158	MT920041/Harrington	14.1	12.9	14.1	12.4	14.1	13.5	0.78	0.50
MT981210	MT910150/Stark	13.9	13.2	14.5	12.2	14.6	13.7	1.14	0.73
MT030160	MTLB 5/MT950155	13.3	14.1	12.7	12.2	14.7	13.4	1.07	0.62
2B965057	<b>Conrad</b>	13.9	13.6	14.3	12.3	14.9	13.8	1.22	0.88
MT020204	MTLB 32/H1851195	12.8	13.6	14.0	12.3	14.7	13.5	1.21	0.93
MT030152	MTLB 5/MT940053	12.5	13.2	12.4	12.1	14.7	13.0	1.18	0.75
MT000125	MT910189/Lewis	12.6	12.9	13.5	12.5	14.3	13.2	0.97	0.92
S3482	<b>Calgary</b>	13.5	13.4	12.9	11.7	14.9	13.3	1.37	0.82
MT010191	MT920053/Harrington	12.8	13.0	13.8	11.8	14.8	13.2	1.49	0.99
MT020064	MT910160/H1851195	13.0	14.8	14.3	12.6	7.3	12.4	-2.58	0.42
MT010213	MT920073/Logan	14.3	12.8	13.4	13.4	15.4	13.8	0.89	0.45
MT030047	MT910189/MT960101	11.4	12.8	13.8	11.5	13.6	12.6	1.22	0.65
NORD2125	<b>Marthe</b>	12.7	13.3	12.4	12.0	14.9	13.0	1.29	0.76
MT000138	MT920041/H1851195	15.0	13.1	12.8	13.8	15.8	14.1	0.73	0.19
MT030168	MTLB 5/MT960101	13.7	13.3	13.5	11.8	14.6	13.4	1.20	0.84
6B952482	<b>Tradition</b>	12.4	12.9	13.8	11.5	14.6	13.0	1.59	0.96
MT030063	MT950155/Harrington	13.0	12.8	14.4	11.7	13.2	13.0	0.79	0.38
MT030188	MTLB 13/MT950102	13.1	13.3	13.8	12.5	14.8	13.5	1.13	0.99
MT020155	MT960225/H1851195	12.4	13.0	12.8	13.4	14.1	13.1	0.43	0.25
2B914947	<b>Merit</b>	12.8	13.3	12.9	11.8	15.2	13.2	1.56	0.91
<b>MT910189</b>	ND 7293/Bearpaw	12.6	12.4	13.5	12.6	14.5	13.1	1.01	0.76
MT010212	MT920073/Baronesse	12.8	13.9	13.1	12.1	15.0	13.4	1.34	0.84
MT950186	<b>Haxby</b>	12.3	13.0	13.8	12.3	14.3	13.1	1.06	0.83
MT030051	MT910189/MTLB 06	14.0	12.6	14.4	13.7	14.9	13.9	0.69	0.35
<b>MT960101</b>	Manley/Baronesse	13.6	13.5	13.2	11.5	14.3	13.2	1.18	0.74

continued

<b>Table 14 Irr Barley Protein cont:</b>		Kalispell	Sidney	Huntley	Conrad	Bozeman	Mean	Byx	RSQ
MT030107	MT960101/MT960225	13.3	12.7	12.7	11.2	14.4	12.9	1.39	0.81
MT010080	MT886610/H1851195	13.5	13.0	13.3	13.2	14.8	13.6	0.77	0.66
MT030036	Logan/MT960099	12.3	13.6	13.4	12.9	14.7	13.4	0.93	0.64
MT020205	MTLB 32/H1851195	13.4	13.6	14.3	13.1	14.7	13.8	0.84	0.91
YU587432	Baronesse/ORCA	12.8	12.8	12.2	12.3	14.1	12.8	0.79	0.61
MT030144	MTLB 5/Harrington	14.2	12.7	13.9	12.8	14.0	13.5	0.51	0.30
MT020167	MT960225/H3860224	12.3	13.5	14.6	12.5	14.6	13.5	1.23	0.69
<b>MT970116</b>	<b>Klages/Baronesse</b>	12.5	12.6	14.8	12.7	14.1	13.3	0.92	0.43
PI610264	<b>Valier</b>	13.6	13.3	13.5	13.9	15.2	13.9	0.62	0.40
PI568246	<b>Baronesse</b>	13.1	13.4	13.2	12.1	14.6	13.3	1.13	0.94
MT010160	MT920041/Harrington	13.1	13.2	14.3	11.9	14.6	13.4	1.33	0.88
BZ596117	<b>Boulder</b>	13.6	13.1	14.2	12.5	14.8	13.6	1.09	0.87
MT010162	MT920041/Harrington	12.9	13.5	14.2	12.6	14.6	13.5	1.07	0.89
PI491534	<b>Gallatin</b>	13.1	12.7	13.5	12.3	14.5	13.2	1.10	0.92
MT030093	MT960099/Harrington	12.5	12.9	13.3	12.6	14.8	13.2	1.14	0.84
MT030039	Logan/MT960101	12.8	12.7	13.0	12.5	14.2	13.0	0.82	0.89
MT030046	MT910189/MT960101	13.6	13.2	15.0	12.1	14.1	13.6	1.04	0.52
6B932978	<b>Legacy</b>	11.9	12.9	12.5	12.2	14.8	12.8	1.30	0.74
MT030003	Harrington/MT950102	12.9	14.2	13.8	12.9	14.4	13.6	0.74	0.65
99373119	<b>Shakira</b>	12.3	13.8	12.4	12.6	14.7	13.2	1.00	0.51
SK 76333	<b>Harrington</b>	12.1	14.4	15.1	12.0	14.4	13.6	1.34	0.49
CI 15773	<b>Morex</b>	14.7	14.1	14.7	11.8	14.9	14.0	1.35	0.61
MT981060	<b>Hays - forage</b>	12.4	15.0	13.2	12.1	14.5	13.4	1.08	0.41
Site Mean	SITE MEAN	13.0	13.2	13.5	12.3	14.4	13.2	1.00	1.00
C.V.	C.V. (S/Mean) * 100	***	6.17	***	4.15	9.69	5.43	***	***
F-Value		***	1.59	***	4.75	1.19	<.0001	***	***
L.S.D.	L.S.D. (.05)	***	1.38	***	0.87	2.78	0.90	***	***