

**TITLE:** 2010 Statewide Barley Performance Trials

**PRINCIPLE INVESTIGATOR:** Tom Blake & Stan Bates, Research Center personnel involved with this project include Gregg Carlson, Peggy Lamb, Ken Kephart, Bob Stougaard, Dave Wichman, Joyce Eckhoff, and John Miller.

**OBJECTIVES:** Evaluate the effects of differing systems on crop and variety performance under diverse environments represented across the Montana Agricultural Experiment Station – Research Center Network.

**RESULTS:** The statewide (intrastate) barley variety nursery was grown at six dryland locations and five irrigated locations in the state. The dryland locations were Bozeman, Conrad, Havre, Huntley, Moccasin, and Sidney, The irrigated locations included Bozeman, Conrad, Huntley, Kalispell, and Sidney. Table 1 summarizes all traits across all locations in the state, while Table 2 summarizes all traits for dryland locations. Table 9 is a summary of all traits for irrigated locations in Montana. Specific performance traits at each location can be found in tables 3 through 8 for dryland, and tables 10 through 15 for irrigated production.

The top yielder for dryland production in 2010 was Baronesse with a statewide average of over 92 bu/acre. Other released varieties that were statistically equal to Baronesse include Conrad, Copeland, Geraldine, Harrington, Scarlett, and Amsterdam. For Irrigated production the top released variety was Conrad, with Baronesse, Scarlett, Geraldine, Copeland, Haxby, and Harrington in the same yield group.

**FUNDING SUMMARY:** Expenditure information will be provided by OSP upon request.

**FUTURE PLANS:** These trials will continue in 2011. The Statewide Barley Performance Trials are not a component of the Research Center's umbrella project. This information is presented here for the convenience of the MWBC and the growers who generate MWBC check-off dollars.

Table 1. Montana Intrastate Barley Statewide Average for All Traits, all Locations 2010

ID	Pedigree	Yield	Test Wt	Plump	Thin	Protein	Heading Date	Plant Ht
		bu/Acre	lbs/bu	%	%	%	(Julian)	in
2B965057	Conrad	99.07	50.46	93.19	2.06	11.84	181.66	28.91
6B952482	Tradition	77.86	49.56	90.41	1.85	11.45	178.54	32.51
COPELAND	Copeland	95.00	50.19	92.82	1.94	10.92	181.45	32.87
EM090117	03013-25	97.46	50.24	93.42	1.64	11.59	185.74	26.54
EM090128	03021-03	101.64	50.74	88.14	3.60	11.14	184.00	25.67
EM090130	03021-35	97.63	51.47	93.02	2.23	11.39	186.15	25.43
EM090134	03021-74	89.74	50.25	91.30	2.44	11.60	184.37	28.33
MT010158	Amsterdam	89.28	50.91	92.56	2.11	12.12	180.00	28.65
MT010160	MT920041/Harrington	88.56	51.74	90.81	2.66	11.31	180.91	30.75
MT020155	MT960225/H1851195	95.32	50.77	89.16	3.71	11.43	177.80	30.77
MT020162	MT960225/H1851195	94.51	51.13	91.24	2.53	11.52	182.08	30.66
MT020167	MT960225/H3860224	89.23	51.86	93.07	2.24	11.68	180.42	30.57
MT020204	MTLB 32/H1851195	96.13	51.91	90.02	3.16	11.36	178.30	30.30
MT020205	MTLB 32/H1851195	96.19	51.39	90.93	3.41	11.99	178.40	30.86
MT030042	MT910189/MT960099	90.42	52.02	87.87	4.80	10.62	179.25	28.00
MT030063	MT950155/Harrington	88.33	52.31	93.95	1.91	11.46	181.23	31.47
MT030079	MT950186/MT960225	90.09	52.33	91.17	2.71	11.05	180.38	29.79
MT040073	MT960045/Harrington	91.11	52.58	90.26	3.01	11.73	180.12	29.80
MT040209	MT960228/MT950186	98.24	51.41	87.53	3.58	11.25	181.90	29.56
MT050030	GS 1750/Bearpaw	98.25	51.09	93.05	2.06	10.81	181.20	30.39
MT050062	Harrington/MT960225	91.40	52.21	93.67	1.84	10.65	181.70	32.28
MT061032	Baronesse/MT981210	102.33	50.73	89.94	3.16	11.23	182.00	28.34
MT061035	Baronesse/MT981210	102.56	50.90	90.42	2.96	11.38	181.62	29.48
MT061104	Harrington/MT970229	93.25	51.13	94.33	1.76	11.46	179.48	30.74
MT061169	MT960101/Coors 37	97.14	51.61	91.36	3.12	11.54	182.04	28.26
MT070063	MT010178/MT970116	87.84	51.72	92.45	2.32	11.21	179.17	38.03
MT070086	MT970148/Coors 37	95.72	50.81	91.30	2.65	11.55	182.82	23.55
MT070111	MT010178/Harrington	91.96	51.25	86.27	4.20	11.07	181.29	30.46
MT070125	MT981210/MT970116	94.64	51.71	92.63	2.33	11.33	181.70	31.22
MT070148	MT990172/Metcalfe	95.01	51.35	95.71	1.17	11.51	179.92	29.41
MT070156	MT970148/Klages	99.84	51.15	91.56	2.52	11.14	179.97	28.44
MT070157	MT970148/Klages	98.41	51.71	93.21	2.00	11.10	180.03	28.66
MT070158	MT970148/Klages	100.32	51.68	94.39	1.77	11.48	180.45	28.49
MT070159	MT970148/Klages	96.72	51.37	92.55	2.28	11.05	179.94	27.90
MT070161	MT970148/Klages	99.70	51.85	94.26	1.79	11.23	179.87	27.75
MT070175	LK644///Hockett F5	91.93	50.88	93.43	2.35	10.48	180.20	31.25
MT080001	Amulet/Metcalfe	91.61	51.71	94.79	1.17	12.39	183.02	26.15
MT080017	Amulet/MT960101	97.77	51.70	94.15	1.46	10.95	182.89	30.93
MT080077	Coors/Kendall	93.79	51.16	93.55	2.01	11.77	183.11	27.25
MT080081	Coors/Metcalfe	93.68	50.89	92.41	2.48	11.84	183.29	27.42
MT080083	Coors/Metcalfe	95.52	50.88	93.04	2.01	12.08	182.80	27.61
MT080084	Coors/Metcalfe	92.96	51.10	92.90	2.10	12.06	183.31	27.03
MT080085	Coors/Metcalfe	99.13	51.45	89.41	3.53	11.51	182.62	29.07

ID	Pedigree	Yield	Test Wt	Plump	Thin	Protein	Heading Date	Plant Ht
		bu/Acre	lbs/bu	%	%	%	(Julian)	in
MT080100	Karma	48.59	59.57	77.87	15.22	14.43	180.76	32.78
MT080172	Klages/Stratus	91.65	50.16	86.35	4.00	11.76	180.28	30.25
MT080179	Metcalfe/MT990106	88.60	52.05	95.44	1.09	11.96	179.42	32.12
MT080243	MT960101/MT981210	92.45	50.96	86.56	3.80	11.33	181.30	31.49
MT080261	MT970026/MT981091	90.31	51.13	85.73	5.24	11.76	178.48	29.18
MT080274	MT970148/Conlon	100.45	51.29	93.27	1.99	10.80	178.88	28.28
MT080277	MT970148/Merit	92.70	50.48	89.89	2.97	11.30	180.62	28.01
MT080279	MT970148/MT970116	99.54	50.80	90.69	2.74	11.23	180.79	27.88
MT080281	MT970148/MT970116	96.72	50.79	91.84	2.62	10.88	180.43	27.39
MT080283	MT970148/MT970116	101.05	50.90	92.78	2.19	11.09	180.02	27.22
MT080284	MT970148/MT970116	100.76	50.89	91.31	2.43	11.02	179.89	27.64
MT080285	MT970148/MT970116	99.10	51.45	92.82	2.05	11.10	181.12	26.98
MT910189	Hockett	90.26	51.57	90.62	3.08	11.14	178.34	30.01
MT950186	Haxby	88.27	52.54	91.31	2.48	11.24	178.96	29.63
MT960101	Geraldine	95.40	50.66	86.63	4.60	11.29	183.42	28.54
MT970116	Craft	84.84	52.31	93.54	2.18	11.66	178.92	33.10
PI568246	Baronesse	102.62	51.51	92.16	2.28	11.34	182.20	28.39
PI643354	Pinnacle	86.80	50.69	95.27	1.54	10.45	178.33	30.45
SCARLETT	Scarlett	94.11	50.61	93.74	1.78	11.30	183.44	26.45
SK 76333	Harrington	93.48	50.45	91.66	2.45	11.22	181.58	30.82
TR232	Metcalfe	90.16	50.54	90.25	3.07	11.54	180.07	31.04
	Mean	93.67	51.35	91.43	2.76	11.41	181.01	29.36
	C.V.	8.84	1.65	5.91	161.75	4.83	0.69	7.97
	P-value	<0.0001	<0.0001	<0.0001	0.002	<0.0001	<0.0001	<0.0001
	F-Value	56.49	28.64	3.19	1.63	30.24	304.88	30.80
	L.S.D.	8.14	0.84	5.31	4.38	0.54	1.22	2.30

Table 2. Montana Intrastate Barley Statewide, All Traits, Averages for all Dryland Locations 2010

ID	Pedigree	Yield	Test Wt	Plump	Thin	Protein	Heading Date	Plant Ht
		bu/acre	lbs/bu	%	%	%	(Julian)	in
2B965057	Conrad	86.70	50.07	94.35	1.69	11.37	181.67	27.53
6B952482	Tradition	63.75	49.72	91.06	1.74	11.04	178.18	31.82
COPELAND	Copeland	85.04	50.09	93.25	1.64	10.67	181.20	31.54
EM090117	03013-25	87.95	49.99	92.63	2.14	11.07	186.02	24.90
EM090128	03021-03	89.56	50.89	87.09	4.28	10.72	183.97	24.45
EM090130	03021-35	85.87	51.24	92.75	2.70	11.04	186.69	24.59
EM090134	03021-74	78.60	50.33	92.15	2.58	11.23	184.61	27.15
MT010158	Amsterdam	81.99	51.30	94.06	1.56	11.93	179.68	27.63
MT010160	MT920041/Harrington	81.50	51.79	92.47	1.99	10.67	180.38	29.68
MT020155	MT960225/H1851195	85.96	51.11	91.17	2.89	11.19	177.79	30.33
MT020162	MT960225/H1851195	84.55	50.99	91.43	2.49	11.19	182.07	29.47
MT020167	MT960225/H3860224	77.82	52.08	93.77	1.90	11.24	180.02	29.59
MT020204	MTLB 32/H1851195	89.10	52.28	92.06	2.53	10.87	178.01	29.35
MT020205	MTLB 32/H1851195	84.71	51.99	93.87	2.26	11.59	178.41	29.93
MT030042	MT910189/MT960099	81.43	52.28	89.02	4.12	10.42	179.39	27.20
MT030063	MT950155/Harrington	76.09	52.68	95.24	1.52	11.36	180.73	30.43
MT030079	MT950186/MT960225	77.51	52.21	90.37	2.97	10.71	179.83	28.67
MT040073	MT960045/Harrington	82.45	52.55	90.37	2.79	11.17	179.91	28.51
MT040209	MT960228/MT950186	85.39	51.61	87.80	3.17	10.96	182.05	27.94
MT050030	GS 1750/Bearpaw	87.09	51.30	94.12	1.66	10.52	180.83	29.23
MT050062	Harrington/MT960225	79.52	52.35	94.49	1.50	10.54	181.10	30.92
MT061032	Baronesse/MT981210	92.29	50.70	89.51	3.12	10.79	181.93	27.13
MT061035	Baronesse/MT981210	91.98	50.80	90.24	2.73	11.10	181.42	28.15
MT061104	Harrington/MT970229	82.39	51.33	95.72	1.21	11.03	179.24	30.04
MT061169	MT960101/Coors 37	85.47	51.83	92.88	2.53	10.99	182.08	26.81
MT070063	MT010178/MT970116	74.93	51.80	94.05	1.79	10.74	178.73	31.55
MT070086	MT970148/Coors 37	82.85	50.99	91.71	2.76	11.47	183.26	21.84
MT070111	MT010178/Harrington	84.90	51.31	84.52	4.19	10.55	181.01	29.41
MT070125	MT981210/MT970116	83.95	51.70	93.45	1.88	11.12	181.52	30.85
MT070148	MT990172/Metcalfe	83.75	51.28	95.42	1.35	11.06	179.57	28.12
MT070156	MT970148/Klages	88.14	51.02	91.13	2.46	10.78	180.23	27.33
MT070157	MT970148/Klages	88.78	51.84	93.44	1.79	10.61	180.41	27.94
MT070158	MT970148/Klages	90.36	51.75	95.05	1.41	11.25	180.49	27.46
MT070159	MT970148/Klages	83.34	51.38	93.34	1.77	10.59	179.92	26.41
MT070161	MT970148/Klages	88.44	52.04	95.39	1.20	10.91	180.11	26.97
MT070175	LK644///Hockett F5	82.66	50.93	94.22	2.20	10.34	179.81	29.98
MT080001	Amulet/Metcalfe	81.28	51.37	95.01	1.04	12.13	182.88	24.84
MT080017	Amulet/MT960101	87.85	51.56	94.67	1.39	10.63	182.63	29.56
MT080077	Coors/Kendall	80.45	51.21	93.65	2.10	11.50	182.80	25.82
MT080081	Coors/Metcalfe	83.34	50.80	92.75	2.52	11.39	182.95	26.06
MT080083	Coors/Metcalfe	84.15	50.95	93.71	2.02	11.96	182.75	26.08
MT080084	Coors/Metcalfe	82.40	50.97	92.80	2.48	11.89	182.99	25.59
MT080085	Coors/Metcalfe	88.95	51.53	88.71	3.76	11.24	182.78	28.07

ID	Pedigree	Yield	Test Wt	Plump	Thin	Protein	Heading Date	Plant Ht
		bu/acre	lbs/bu	%	%	%	(Julian)	in
MT080100	Karma	47.08	59.88	71.78	22.08	13.90	179.95	32.27
MT080172	Klages/Stratus	84.34	50.33	85.91	3.66	11.44	180.43	29.62
MT080179	Metcalfe/MT990106	78.30	52.08	96.00	0.94	11.69	178.91	30.65
MT080243	MT960101/MT981210	83.20	50.97	84.82	3.78	10.88	181.00	30.15
MT080261	MT970026/MT981091	81.04	51.61	87.93	4.23	11.55	177.82	28.77
MT080274	MT970148/Conlon	90.86	51.84	94.55	1.49	10.32	178.98	27.59
MT080277	MT970148/Merit	82.30	50.63	89.31	2.95	10.90	180.77	26.84
MT080279	MT970148/MT970116	89.00	50.78	90.74	2.67	11.00	181.21	27.09
MT080281	MT970148/MT970116	87.20	50.98	92.20	2.48	10.52	180.85	26.70
MT080283	MT970148/MT970116	90.57	50.83	92.83	1.98	10.70	179.97	26.66
MT080284	MT970148/MT970116	90.58	50.89	91.10	2.39	10.69	180.10	26.45
MT080285	MT970148/MT970116	88.10	51.50	92.72	2.02	10.70	181.69	25.81
MT910189	Hockett	81.15	51.65	91.29	2.65	10.82	178.15	28.78
MT950186	Haxby	74.58	52.92	91.67	2.11	10.71	178.58	28.41
MT960101	Geraldine	84.62	50.56	86.36	4.67	11.08	183.74	27.23
MT970116	Craft	71.91	52.25	94.44	1.80	11.52	178.07	31.97
PI568246	Baronesse	92.74	51.33	92.11	2.18	10.98	182.20	27.47
PI643354	Pinnacle	79.75	50.86	95.48	1.59	10.31	178.45	29.03
SCARLETT	Scarlett	82.16	50.41	93.06	2.17	10.79	183.22	24.82
SK 76333	Harrington	83.86	50.60	92.08	2.27	10.82	181.41	29.51
TR232	Metcalfe	81.58	50.55	90.02	3.12	11.12	179.83	30.04
	Mean	83.28	51.43	91.74	2.67	11.06	180.90	28.17
	C.V.	10.63	1.77	7.19	209.17	5.72	0.69	4.58
	P-value	<.0001	<.0001	<.0001	0.16	<.0001	<.0001	<.0001
	F-Value	29.10	14.65	2.04	1.20	14.88	150.90	53.00
	L.S.D.	11.02	1.13	8.21	6.96	0.79	1.56	1.61

Table 3. Montana Intrastate Barley, Yield (bu/acre) Averages for all Dryland Locations 2010

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
2B965057	Conrad	82.32	74.66	63.11	86.53	126.89	86.7
6B952482	Tradition	7.36	72.35	54.5	88.42	96.15	63.75
MT010158	Amsterdam	78.23	64.88	61.92	87.92	117.01	81.99
MT010160	MT920041/Harrington	70.19	61.58	66.27	89.44	120	81.5
MT020155	MT960225/H1851195	75.6	80.25	62.32	97.32	114.32	85.96
MT020162	MT960225/H1851195	72.82	75.38	64.01	83.7	126.81	84.55
MT020167	MT960225/H3860224	64.58	72.25	62.64	93.9	95.72	77.82
MT020204	MTLB 32/H1851195	87.27	77.7	63.33	83.49	133.72	89.1
MT020205	MTLB 32/H1851195	73.84	81.75	61.63	83.75	122.56	84.71
MT030042	MT910189/MT960099	74.42	71.9	60	96.38	104.44	81.43
MT030063	MT950155/Harrington	28.25	66.48	71.72	90.45	123.57	76.09
MT030079	MT950186/MT960225	51.02	70.76	63.11	88.9	113.75	77.51
MT040073	MT960045/Harrington	72.26	71.34	57.97	84.1	126.58	82.45
MT040209	MT960228/MT950186	76.45	74.67	60.87	92.54	122.4	85.39
MT050030	GS 1750/Bearpaw	70.48	70.39	65.98	98.2	130.4	87.09
MT050062	Harrington/MT960225	50.06	80.21	63.67	87.19	116.49	79.52
MT061032	Baronesse/MT981210	88.29	75.71	58.87	109.3	129.31	92.29
MT061035	Baronesse/MT981210	89.72	74.31	59.57	101.72	134.56	91.98
EM090117	03013-25	85.89	75.67	59.01	86.51	132.67	87.95
EM090128	03021-03	78.76	76.75	63.3	87.91	141.08	89.56
MT061104	Harrington/MT970229	65.2	82.92	58.03	88.01	117.82	82.39
MT061169	MT960101/Coors 37	81.57	66.36	62.91	88.2	128.3	85.47
MT070063	MT010178/MT970116	42.13	63.26	58.47	85.61	125.18	74.93
MT070086	MT970148/Coors 37	74.93	68.17	56.3	84.79	130.05	82.85
MT070111	MT010178/Harrington	78.36	76.1	62.97	88.36	118.68	84.9
MT070125	MT981210/MT970116	63.16	80.13	67.13	91.94	117.41	83.95
MT070148	MT990172/Metcalfe	71.34	72	68.34	90.24	116.85	83.75
MT070156	MT970148/Klages	79.95	69.12	65.04	96.11	130.47	88.14
MT070157	MT970148/Klages	83.54	67.19	59.12	102.77	131.3	88.78
MT070158	MT970148/Klages	92.76	75.78	62.21	93.59	127.47	90.36
MT070159	MT970148/Klages	76.82	61.67	58.75	94.31	125.15	83.34
MT070161	MT970148/Klages	84.34	78.05	64.33	90.98	124.51	88.44
MT070175	LK644///Hockett F5	81.02	73.18	64.56	82.82	111.74	82.66
MT080001	Amulet/Metcalfe	73.53	72.17	58.69	78.4	123.6	81.28
MT080017	Amulet/MT960101	80.55	75.82	60.54	97.93	124.43	87.85
MT080077	Coors/Kendall	74.54	71.29	45.18	83.15	128.07	80.45
MT080081	Coors/Metcalfe	78.26	64.59	49.48	85.02	139.38	83.34
MT080083	Coors/Metcalfe	82.98	61.21	59.09	89.38	128.11	84.15
MT080084	Coors/Metcalfe	85.88	65.37	43.94	86.85	129.98	82.4
MT080085	Coors/Metcalfe	83.38	85.03	66.9	93.34	116.1	88.95
EM090130	03021-35	83.81	68.34	64.96	84.43	127.83	85.87
EM090134	03021-74	77.99	58.16	59.12	72.72	125.01	78.6
MT080100	Karma	42.43	42.26	42.65	41.03	67.02	47.08
MT080172	Klages/Stratus	75.31	70.53	65.34	91.3	119.21	84.34
MT080179	Metcalfe/MT990106	70.90	65.67	54.00	83.88	117.05	78.30

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
MT080243	MT960101/MT981210	82.00	71.74	60.45	89.39	112.43	83.20
MT080261	MT970026/MT981091	77.51	73.33	64.52	76.30	113.52	81.04
MT080274	MT970148/Conlon	87.52	73.62	67.62	104.38	121.13	90.86
MT080277	MT970148/Merit	73.13	64.38	62.64	92.58	118.78	82.30
MT080279	MT970148/MT970116	83.51	70.16	70.26	95.35	125.71	89.00
MT080281	MT970148/MT970116	80.42	76.19	62.90	95.04	121.46	87.20
MT080283	MT970148/MT970116	92.93	69.99	67.16	98.21	124.54	90.57
MT080284	MT970148/MT970116	82.90	74.25	63.54	103.09	129.11	90.58
MT080285	MT970148/MT970116	86.90	61.27	59.41	108.42	124.48	88.10
MT910189	Hockett	77.66	75.52	60.48	88.34	103.73	81.15
MT950186	Haxby	51.58	69.97	56.86	86.85	107.65	74.58
MT960101	Geraldine	93.26	63.69	55.02	95.82	115.32	84.62
MT970116	Craft	37.36	68.20	56.70	84.95	112.32	71.91
PI568246	Baronesse	89.39	79.26	61.25	102.77	131.02	92.74
PI643354	Pinnacle	76.07	72.95	60.80	89.87	99.07	79.75
SK76333	Harrington	82.47	67.91	64.26	82.45	122.21	83.86
TR232	Metcalfe	77.85	68.24	67.53	87.35	106.96	81.58
COPELAND	Copeland	77.00	73.33	59.62	91.56	123.67	85.04
SCARLETT	Scarlett	83.20	68.74	60.68	80.42	117.77	82.16
	Mean	74.30	71.03	60.99	89.62	120.47	83.28
	C.V.	12.69	9.69	7.67	7.84	4.62	8.50
	F-value	5.38	1.87	2.29	4.59	13.50	5.53
	L.S.D.	17.67	14.18	10.31	11.99	8.62	12.55
	Efficiency Rel to RCB	100	211.48	140.26	104.60	115.98	***

Table 4. Montana Intrastate Barley, Test Weight (lbs/bu) Averages for all Dryland Locations 2010

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
2B965057	Conrad	49.15	48.50	51.29	51.01	50.42	50.07
6B952482	Tradition	47.92	50.50	50.53	48.47	51.19	49.72
MT010158	Amsterdam	49.87	52.00	51.58	51.13	51.90	51.30
MT010160	MT920041/Harrington	50.23	52.50	51.88	51.71	52.61	51.79
MT020155	MT960225/H1851195	49.69	51.50	52.80	50.31	51.24	51.11
MT020162	MT960225/H1851195	49.45	50.50	51.63	51.19	52.17	50.99
MT020167	MT960225/H3860224	51.26	53.50	53.36	51.77	50.52	52.08
MT020204	MTLB 32/H1851195	50.82	53.50	52.65	51.89	52.55	52.28
MT020205	MTLB 32/H1851195	50.51	53.00	52.84	51.66	51.93	51.99
MT030042	MT910189/MT960099	51.36	52.00	53.63	52.76	51.68	52.28
MT030063	MT950155/Harrington	51.23	53.00	53.65	51.42	54.12	52.68
MT030079	MT950186/MT960225	51.10	53.00	52.49	51.81	52.63	52.21
MT040073	MT960045/Harrington	51.18	52.50	53.21	51.75	54.09	52.55
MT040209	MT960228/MT950186	50.20	51.50	52.07	52.38	51.89	51.61
MT050030	GS 1750/Bearpaw	49.40	52.50	52.66	50.20	51.72	51.30
MT050062	Harrington/MT960225	50.58	53.50	52.80	52.13	52.77	52.35
MT061032	Baronesse/MT981210	48.80	52.50	50.93	49.48	51.77	50.70
MT061035	Baronesse/MT981210	48.30	52.00	51.22	49.56	52.95	50.80
EM090117	03013-25	47.55	50.50	50.16	49.08	52.69	49.99
EM090128	03021-03	49.32	51.00	52.63	48.64	52.85	50.89
MT061104	Harrington/MT970229	50.04	51.00	52.05	51.93	51.65	51.33
MT061169	MT960101/Coors 37	50.32	52.50	53.17	51.46	51.72	51.83
MT070063	MT010178/MT970116	50.60	52.00	51.86	51.85	52.71	51.80
MT070086	MT970148/Coors 37	49.94	51.50	51.60	48.39	53.52	50.99
MT070111	MT010178/Harrington	50.12	51.50	52.08	50.85	52.02	51.31
MT070125	MT981210/MT970116	50.27	52.50	51.78	51.95	52.01	51.70
MT070148	MT990172/Metcalfe	49.54	52.50	50.91	51.07	52.38	51.28
MT070156	MT970148/Klages	49.75	49.50	52.06	50.87	52.91	51.02
MT070157	MT970148/Klages	50.60	52.50	53.05	51.30	51.73	51.84
MT070158	MT970148/Klages	50.62	52.50	53.25	50.86	51.51	51.75
MT070159	MT970148/Klages	49.89	51.50	52.52	50.64	52.35	51.38
MT070161	MT970148/Klages	50.58	53.00	53.81	50.98	51.82	52.04
MT070175	LK644///Hockett F5	49.35	51.50	52.90	50.04	50.86	50.93
MT080001	Amulet/Metcalfe	50.28	52.00	52.77	49.46	52.34	51.37
MT080017	Amulet/MT960101	49.95	52.50	52.21	51.36	51.75	51.56
MT080077	Coors/Kendall	48.46	53.00	52.55	49.26	52.75	51.21
MT080081	Coors/Metcalfe	48.24	51.50	52.16	48.89	53.21	50.80
MT080083	Coors/Metcalfe	48.32	51.50	52.68	49.31	52.95	50.95
MT080084	Coors/Metcalfe	48.06	52.50	52.82	48.53	52.95	50.97
MT080085	Coors/Metcalfe	49.81	51.50	53.16	52.00	51.19	51.53
EM090130	03021-35	49.08	51.00	53.19	50.22	52.69	51.24
EM090134	03021-74	48.64	52.00	51.90	47.69	51.42	50.33
MT080100	Karma	59.41	62.00	62.50	59.12	56.36	59.88
MT080172	Klages/Stratus	47.90	50.00	52.66	48.98	52.11	50.33
MT080179	Metcalfe/MT990106	49.84	52.50	53.15	51.38	53.56	52.08

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
MT080243	MT960101/MT981210	48.89	51.00	50.99	50.50	53.47	50.97
MT080261	MT970026/MT981091	50.06	52.00	52.93	51.69	51.38	51.61
MT080274	MT970148/Conlon	50.11	52.00	53.93	50.92	52.22	51.84
MT080277	MT970148/Merit	49.09	51.00	51.99	50.29	50.77	50.63
MT080279	MT970148/MT970116	50.23	49.50	52.33	50.32	51.55	50.78
MT080281	MT970148/MT970116	49.47	52.00	51.78	50.15	51.51	50.98
MT080283	MT970148/MT970116	50.53	50.00	51.86	50.48	51.30	50.83
MT080284	MT970148/MT970116	49.80	50.00	51.95	50.68	52.04	50.89
MT080285	MT970148/MT970116	50.33	53.50	51.11	50.04	52.49	51.50
MT910189	Hockett	51.20	50.50	53.80	52.01	50.75	51.65
MT950186	Haxby	50.66	54.00	53.58	52.06	54.28	52.92
MT960101	Geraldine	49.34	49.00	52.11	51.04	51.30	50.56
MT970116	Craft	50.60	52.00	53.26	52.10	53.30	52.25
PI568246	Baronesse	49.44	53.00	51.48	49.93	52.80	51.33
PI643354	Pinnacle	49.64	51.50	51.78	50.70	50.68	50.86
SK 76333	Harrington	49.16	50.00	51.61	50.89	51.32	50.60
TR232	Metcalfe	48.26	50.50	53.15	49.97	50.86	50.55
COPELAND	Copeland	48.43	49.50	51.38	49.68	51.44	50.09
SCARLETT	Scarlett	48.92	49.00	51.44	49.68	52.99	50.41
	Mean	49.87	51.80	52.49	50.78	52.20	51.43
	C.V.	0.78	***	***	0.98	1.53	1.1
	F-value	20.93	***	***	12.84	2.46	12.08
	L.S.D.	0.93	***	***	1.13	1.78	1.28
	Efficiency Rel RCB	113.81	***	***	102.8	97	***

Table 5. Montana Intrastate Barley, % Plump Averages for all Dryland Locations 2010

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
2B965057	Conrad	96.60	88.00	98.50	94.14	94.49	94.35
6B952482	Tradition	90.40	93.00	89.80	89.51	92.60	91.06
MT010158	Amsterdam	97.00	94.00	91.40	93.28	94.61	94.06
MT010160	MT920041/Harrington	96.80	94.00	87.50	92.22	91.82	92.47
MT020155	MT960225/H1851195	96.80	92.00	93.30	89.54	84.21	91.17
MT020162	MT960225/H1851195	93.60	89.00	90.40	90.24	93.91	91.43
MT020167	MT960225/H3860224	98.30	95.00	92.40	94.91	88.22	93.77
MT020204	MTLB 32/H1851195	95.40	94.00	92.40	91.18	87.30	92.06
MT020205	MTLB 32/H1851195	98.20	94.00	96.40	91.62	89.12	93.87
MT030042	MT910189/MT960099	94.30	86.00	94.80	89.14	80.88	89.02
MT030063	MT950155/Harrington	97.70	95.00	97.50	93.13	92.90	95.24
MT030079	MT950186/MT960225	96.10	90.00	90.10	85.90	89.75	90.37
MT040073	MT960045/Harrington	95.90	87.00	89.00	88.63	91.34	90.37
MT040209	MT960228/MT950186	97.50	84.00	85.20	84.74	87.55	87.80
MT050030	GS 1750/Bearpaw	98.80	95.00	94.90	88.38	93.53	94.12
MT050062	Harrington/MT960225	98.00	96.00	96.70	90.86	90.91	94.49
MT061032	Baronesse/MT981210	91.70	95.00	90.30	77.70	92.87	89.51
MT061035	Baronesse/MT981210	91.30	93.00	92.10	81.97	92.84	90.24
EM090117	03013-25	95.50	92.00	93.70	83.82	98.14	92.63
EM090128	03021-03	96.00	91.00	89.10	63.27	96.06	87.09
MT061104	Harrington/MT970229	98.20	95.00	97.00	94.95	93.46	95.72
MT061169	MT960101/Coors 37	94.70	93.00	96.30	91.01	89.38	92.88
MT070063	MT010178/MT970116	97.80	93.00	94.50	92.38	92.57	94.05
MT070086	MT970148/Coors 37	96.10	94.00	96.30	75.78	96.38	91.71
MT070111	MT010178/Harrington	95.00	91.00	57.10	90.12	89.39	84.52
MT070125	MT981210/MT970116	97.60	94.00	92.40	92.43	90.83	93.45
MT070148	MT990172/Metcalfe	97.20	98.00	92.80	94.21	94.87	95.42
MT070156	MT970148/Klages	95.80	85.00	89.40	91.43	94.02	91.13
MT070157	MT970148/Klages	97.50	94.00	86.40	93.30	96.01	93.44
MT070158	MT970148/Klages	97.80	95.00	93.30	94.05	95.11	95.05
MT070159	MT970148/Klages	97.10	91.00	92.90	92.29	93.41	93.34
MT070161	MT970148/Klages	98.20	96.00	91.30	95.24	96.22	95.39
MT070175	LK644///Hockett F5	96.70	95.00	97.30	87.61	94.48	94.22
MT080001	Amulet/Metcalfe	97.80	93.00	97.90	90.13	96.21	95.01
MT080017	Amulet/MT960101	95.60	95.00	93.20	94.36	95.19	94.67
MT080077	Coors/Kendall	93.20	98.00	95.90	83.34	97.81	93.65
MT080081	Coors/Metcalfe	92.30	93.00	98.40	82.06	97.98	92.75
MT080083	Coors/Metcalfe	93.10	94.00	97.90	85.38	98.18	93.71
MT080084	Coors/Metcalfe	91.80	96.00	98.00	80.19	97.99	92.80
MT080085	Coors/Metcalfe	92.60	85.00	92.10	86.19	87.67	88.71
EM090130	03021-35	95.60	95.00	95.50	80.39	97.27	92.75
EM090134	03021-74	96.30	97.00	93.10	79.29	95.04	92.15
MT080100	Karma	92.20	94.00	1.00	78.13	93.56	71.78
MT080172	Klages/Stratus	93.60	89.00	78.70	79.73	88.52	85.91
MT080179	Metcalfe/MT990106	97.40	96.00	97.60	94.10	94.89	96.00

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
MT080243	MT960101/MT981210	92.80	87.00	72.50	84.15	87.62	84.82
MT080261	MT970026/MT981091	92.70	88.00	91.20	88.25	79.52	87.93
MT080274	MT970148/Conlon	97.40	91.00	96.40	95.70	92.26	94.55
MT080277	MT970148/Merit	93.60	93.00	82.70	87.15	90.08	89.31
MT080279	MT970148/MT970116	95.00	83.00	93.40	88.88	93.42	90.74
MT080281	MT970148/MT970116	91.90	92.00	94.70	90.85	91.54	92.20
MT080283	MT970148/MT970116	96.20	90.00	94.30	90.03	93.62	92.83
MT080284	MT970148/MT970116	94.70	84.00	93.70	89.77	93.32	91.10
MT080285	MT970148/MT970116	96.50	96.00	87.40	90.52	93.18	92.72
MT910189	Hockett	97.20	88.00	91.60	94.59	85.06	91.29
MT950186	Haxby	93.90	92.00	90.60	90.97	90.88	91.67
MT960101	Geraldine	92.30	82.00	91.80	83.16	82.56	86.36
MT970116	Craft	97.30	94.00	97.60	93.46	89.83	94.44
PI568246	Baronesse	94.90	91.00	95.70	86.08	92.89	92.11
PI643354	Pinnacle	96.90	95.00	98.20	94.33	92.98	95.48
SK 76333	Harrington	95.70	91.00	91.10	91.77	90.82	92.08
TR232	Metcalfe	92.00	89.00	91.70	90.91	86.47	90.02
COPELAND	Copeland	94.80	92.00	91.80	93.43	94.24	93.25
SCARLETT	Scarlett	95.50	90.00	94.20	88.17	97.43	93.06
	Mean	95.44	91.94	90.66	88.51	92.14	91.74
	C.V.	***	***	***	4.09	1.59	2.84
	F-value	***	***	***	6.22	20.27	13.25
	L.S.D.	***	***	***	6.57	2.47	4.52
	Efficiency Rel RCB	***	***	***	119.77	103.63	***

Table 6. Montana Intrastate Barley, Heading Date (Julian) Averages for all Dryland Locations 2010

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
2B965057	Conrad	187.55	179.47	183.66	168.36	189.34	181.67
6B952482	Tradition	179.00	177.90	180.37	165.96	187.67	178.18
MT010158	Amsterdam	182.41	178.67	181.61	168.70	187.01	179.68
MT010160	MT920041/Harrington	183.55	179.36	182.34	168.65	188.00	180.38
MT020155	MT960225/H1851195	179.22	176.07	179.99	166.98	186.67	177.79
MT020162	MT960225/H1851195	185.72	179.94	184.36	170.35	189.99	182.07
MT020167	MT960225/H3860224	183.27	178.46	182.32	168.38	187.67	180.02
MT020204	MTLB 32/H1851195	179.64	177.09	180.66	165.00	187.67	178.01
MT020205	MTLB 32/H1851195	179.78	177.29	180.98	166.65	187.33	178.41
MT030042	MT910189/MT960099	181.31	177.65	182.70	168.30	187.00	179.39
MT030063	MT950155/Harrington	182.73	179.96	181.60	170.35	189.00	180.73
MT030079	MT950186/MT960225	181.75	178.05	181.69	168.34	189.34	179.83
MT040073	MT960045/Harrington	182.28	179.52	183.71	166.05	188.00	179.91
MT040209	MT960228/MT950186	186.07	179.19	184.36	171.32	189.33	182.05
MT050030	GS 1750/Bearpaw	184.59	179.52	183.71	166.67	189.67	180.83
MT050062	Harrington/MT960225	183.82	181.07	183.96	166.34	190.33	181.10
MT061032	Baronesse/MT981210	187.98	179.30	183.68	169.67	189.00	181.93
MT061035	Baronesse/MT981210	185.79	178.70	185.32	168.98	188.34	181.42
EM090117	03013-25	190.56	182.86	189.62	172.07	195.00	186.02
EM090128	03021-03	185.60	181.93	186.69	172.32	193.33	183.97
MT061104	Harrington/MT970229	179.94	178.17	183.06	167.68	187.33	179.24
MT061169	MT960101/Coors 37	187.00	179.78	184.32	170.29	189.00	182.08
MT070063	MT010178/MT970116	179.21	178.13	181.96	166.68	187.66	178.73
MT070086	MT970148/Coors 37	187.35	180.89	188.36	168.69	191.00	183.26
MT070111	MT010178/Harrington	185.98	177.81	182.95	169.66	188.66	181.01
MT070125	MT981210/MT970116	183.84	180.10	183.34	170.00	190.33	181.52
MT070148	MT990172/Metcalfe	180.24	178.96	182.66	168.67	187.33	179.57
MT070156	MT970148/Klages	182.36	178.74	183.05	169.68	187.33	180.23
MT070157	MT970148/Klages	182.77	178.58	183.07	170.32	187.34	180.41
MT070158	MT970148/Klages	182.78	178.71	183.00	170.65	187.34	180.49
MT070159	MT970148/Klages	184.06	178.55	182.66	166.65	187.67	179.92
MT070161	MT970148/Klages	183.70	177.49	181.67	169.33	188.34	180.11
MT070175	LK644///Hockett F5	181.68	179.12	181.30	167.96	189.00	179.81
MT080001	Amulet/Metcalfe	188.53	179.84	185.66	168.04	192.34	182.88
MT080017	Amulet/MT960101	186.44	181.72	184.66	169.31	191.00	182.63
MT080077	Coors/Kendall	184.98	180.70	185.38	170.96	192.00	182.80
MT080081	Coors/Metcalfe	185.08	180.67	186.30	171.35	191.33	182.95
MT080083	Coors/Metcalfe	184.51	180.51	184.99	171.72	192.00	182.75
MT080084	Coors/Metcalfe	186.20	179.72	186.34	170.70	192.00	182.99
MT080085	Coors/Metcalfe	186.62	179.28	185.70	171.32	191.00	182.78
EM090130	03021-35	193.25	182.84	189.65	173.39	194.33	186.69
EM090134	03021-74	186.13	181.62	187.65	173.65	194.00	184.61
MT080100	Karma	180.36	178.09	183.36	168.64	189.33	179.95
MT080172	Klages/Stratus	185.41	178.07	181.68	168.01	189.00	180.43
MT080179	Metcalfe/MT990106	181.39	178.53	181.99	165.32	187.33	178.91

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
MT080243	MT960101/MT981210	184.64	179.06	183.68	168.98	188.67	181.00
MT080261	MT970026/MT981091	178.87	177.20	180.67	165.68	186.67	177.82
MT080274	MT970148/Conlon	181.24	177.36	181.99	166.65	187.67	178.98
MT080277	MT970148/Merit	182.59	179.29	182.67	171.96	187.34	180.77
MT080279	MT970148/MT970116	184.95	179.07	182.99	171.35	187.67	181.21
MT080281	MT970148/MT970116	184.00	178.35	183.28	170.95	187.67	180.85
MT080283	MT970148/MT970116	183.74	179.09	182.29	167.05	187.67	179.97
MT080284	MT970148/MT970116	183.82	177.61	183.04	168.67	187.34	180.10
MT080285	MT970148/MT970116	186.52	179.20	186.35	169.04	187.33	181.69
MT910189	Hockett	180.27	177.09	181.37	165.33	186.66	178.15
MT950186	Haxby	179.71	177.87	181.69	166.99	186.66	178.58
MT960101	Geraldine	188.70	181.29	187.39	171.32	190.00	183.74
MT970116	Craft	179.40	178.30	180.63	165.00	187.00	178.07
PI568246	Baronesse	187.30	179.38	185.33	170.67	188.34	182.20
PI643354	Pinnacle	179.99	177.26	181.97	166.01	187.00	178.45
SK 76333	Harrington	183.56	179.28	184.26	169.29	190.67	181.41
TR232	Metcalfe	182.65	178.22	181.62	167.65	189.00	179.83
COPELAND	Copeland	185.72	178.61	184.70	167.65	189.33	181.20
SCARLETT	Scarlett	183.88	181.54	187.36	172.00	191.34	183.22
	Mean	183.81	179.12	183.61	168.91	189.03	180.90
	C.V.	1.04	0.64	0.77	1.60	0.61	0.93
	F-value	12.52	7.88	12.10	2.77	15.97	10.25
	L.S.D.	2.27	1.47	1.70	3.35	1.35	2.03
	Efficiency Rel RCB	101.90	124.37	100.29	99.10	100.00	***

Table 7. Montana Intrastate Barley, Plant Height (in) Averages for all Dryland Locations 2010

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
2B965057	Conrad	29.11	23.23	24.80	33.92	26.60	27.53
6B952482	Tradition	34.58	25.35	30.54	37.85	30.76	31.82
MT010158	Amsterdam	29.31	20.10	27.83	33.85	27.09	27.63
MT010160	MT920041/Harrington	28.71	23.50	28.46	38.04	29.68	29.68
MT020155	MT960225/H1851195	31.36	24.41	28.49	38.32	29.06	30.33
MT020162	MT960225/H1851195	32.04	25.04	26.51	35.17	28.61	29.47
MT020167	MT960225/H3860224	31.16	24.84	27.12	37.07	27.75	29.59
MT020204	MTLB 32/H1851195	30.21	23.62	27.09	35.38	30.44	29.35
MT020205	MTLB 32/H1851195	30.02	24.59	28.28	37.63	29.14	29.93
MT030042	MT910189/MT960099	28.82	21.33	26.14	32.99	26.72	27.20
MT030063	MT950155/Harrington	30.17	25.34	29.36	37.19	30.09	30.43
MT030079	MT950186/MT960225	30.13	23.71	27.07	35.66	26.75	28.67
MT040073	MT960045/Harrington	30.78	22.97	25.46	36.07	27.25	28.51
MT040209	MT960228/MT950186	31.26	21.49	24.86	35.28	26.81	27.94
MT050030	GS 1750/Bearpaw	30.80	23.17	27.47	36.32	28.39	29.23
MT050062	Harrington/MT960225	30.84	27.05	29.47	38.11	29.13	30.92
MT061032	Baronesse/MT981210	27.40	24.59	23.34	33.34	26.99	27.13
MT061035	Baronesse/MT981210	28.61	23.50	25.19	33.95	29.51	28.15
EM090117	03013-25	24.93	21.41	21.79	30.28	26.11	24.90
EM090128	03021-03	23.20	21.30	23.39	29.14	25.20	24.45
MT061104	Harrington/MT970229	31.92	24.46	27.70	37.79	28.34	30.04
MT061169	MT960101/Coors 37	26.92	21.62	24.56	33.98	26.98	26.81
MT070063	MT010178/MT970116	33.14	24.52	30.69	38.46	30.97	31.55
MT070086	MT970148/Coors 37	23.91	18.07	19.51	25.98	21.72	21.84
MT070111	MT010178/Harrington	31.32	27.02	25.92	34.47	28.31	29.41
MT070125	MT981210/MT970116	32.37	26.91	29.05	37.13	28.81	30.85
MT070148	MT990172/Metcalfe	29.21	23.19	25.67	35.63	26.92	28.12
MT070156	MT970148/Klages	27.16	23.05	25.40	34.64	26.40	27.33
MT070157	MT970148/Klages	29.98	23.28	25.59	34.85	26.00	27.94
MT070158	MT970148/Klages	30.34	22.29	24.40	33.20	27.08	27.46
MT070159	MT970148/Klages	27.90	22.50	23.77	32.65	25.22	26.41
MT070161	MT970148/Klages	29.57	20.25	24.73	33.60	26.72	26.97
MT070175	LK644///Hockett F5	32.28	23.03	29.14	37.90	27.53	29.98
MT080001	Amulet/Metcalfe	25.22	22.87	23.06	27.59	25.49	24.84
MT080017	Amulet/MT960101	29.39	23.51	27.55	37.34	30.02	29.56
MT080077	Coors/Kendall	26.80	21.05	23.81	30.90	26.54	25.82
MT080081	Coors/Metcalfe	27.04	22.38	22.92	30.96	27.02	26.06
MT080083	Coors/Metcalfe	26.07	23.19	24.84	30.35	25.93	26.08
MT080084	Coors/Metcalfe	24.80	22.24	23.45	30.94	26.51	25.59
MT080085	Coors/Metcalfe	28.77	25.27	26.10	32.93	27.26	28.07
EM090130	03021-35	25.40	22.54	21.89	28.78	24.32	24.59
EM090134	03021-74	28.69	24.44	24.19	31.17	27.25	27.15
MT080100	Karma	32.42	27.54	31.12	38.78	31.47	32.27
MT080172	Klages/Stratus	30.77	22.00	29.68	37.75	27.89	29.62
MT080179	Metcalfe/MT990106	34.19	21.98	28.13	38.06	30.89	30.65

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
MT080243	MT960101/MT981210	30.76	24.95	26.99	36.81	31.23	30.15
MT080261	MT970026/MT981091	29.73	23.79	28.88	34.56	26.88	28.77
MT080274	MT970148/Conlon	29.93	20.56	26.98	33.74	26.76	27.59
MT080277	MT970148/Merit	28.08	22.36	25.53	32.30	25.93	26.84
MT080279	MT970148/MT970116	28.36	22.01	26.03	32.82	26.24	27.09
MT080281	MT970148/MT970116	28.39	21.69	24.60	31.61	27.24	26.70
MT080283	MT970148/MT970116	28.53	20.80	25.09	32.46	26.42	26.66
MT080284	MT970148/MT970116	26.90	21.30	24.44	33.16	26.46	26.45
MT080285	MT970148/MT970116	27.94	20.32	23.01	31.32	26.44	25.81
MT910189	Hockett	28.92	23.92	27.60	36.09	27.36	28.78
MT950186	Haxby	31.29	20.61	26.14	36.72	27.30	28.41
MT960101	Geraldine	27.33	23.01	23.81	35.13	26.87	27.23
MT970116	Craft	33.97	26.15	30.89	38.30	30.54	31.97
PI568246	Baronesse	27.91	22.99	23.67	34.91	27.87	27.47
PI643354	Pinnacle	31.27	22.51	26.02	36.95	28.40	29.03
SK 76333	Harrington	32.59	24.05	28.50	34.36	28.02	29.51
TR232	Metcalfe	30.17	26.46	29.53	35.12	28.91	30.04
COPELAND	Copeland	32.90	25.52	28.49	38.34	32.45	31.54
SCARLETT	Scarlett	26.94	21.25	21.31	29.27	25.35	24.82
	Mean	29.39	23.19	26.14	34.46	27.66	28.17
	C.V.	3.28	4.31	3.07	2.42	1.97	3.01
	F-value	5.45	2.34	7.01	10.94	9.04	6.96
	L.S.D.	2.99	3.57	2.54	2.30	1.74	2.63
	Efficiency Rel RCB	106.41	139.17	101.32	102.78	106.11	***

Table 8. Montana Intrastate Barley Protein (%) Averages for all Dryland Locations 2010

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
2B965057	Conrad	12.75	11.49	11.40	9.67	11.53	11.37
6B952482	Tradition	12.19	11.45	9.90	9.90	11.74	11.04
MT010158	Amsterdam	13.22	12.14	12.00	10.29	12.00	11.93
MT010160	MT920041/Harrington	11.99	10.41	10.00	9.68	11.25	10.67
MT020155	MT960225/H1851195	12.95	10.55	10.80	9.87	11.78	11.19
MT020162	MT960225/H1851195	13.17	11.60	9.20	9.99	12.00	11.19
MT020167	MT960225/H3860224	12.08	12.24	9.80	9.59	12.47	11.24
MT020204	MTLB 32/H1851195	12.81	11.88	8.60	9.72	11.34	10.87
MT020205	MTLB 32/H1851195	12.79	11.33	12.10	10.06	11.67	11.59
MT030042	MT910189/MT960099	11.05	10.68	10.80	9.15	10.44	10.42
MT030063	MT950155/Harrington	12.44	11.44	11.90	9.59	11.44	11.36
MT030079	MT950186/MT960225	11.90	11.41	8.90	9.10	12.22	10.71
MT040073	MT960045/Harrington	12.56	10.78	9.60	10.33	12.57	11.17
MT040209	MT960228/MT950186	13.24	10.76	9.40	10.15	11.27	10.96
MT050030	GS 1750/Bearpaw	11.36	11.31	9.60	9.26	11.10	10.52
MT050062	Harrington/MT960225	11.37	10.96	10.20	9.11	11.05	10.54
MT061032	Baronesse/MT981210	12.45	11.48	8.70	9.46	11.85	10.79
MT061035	Baronesse/MT981210	12.58	11.12	11.30	9.09	11.43	11.10
EM090117	03013-25	12.74	11.67	9.00	9.91	12.01	11.07
EM090128	03021-03	11.84	10.76	9.80	9.81	11.37	10.72
MT061104	Harrington/MT970229	12.80	11.05	9.90	9.97	11.44	11.03
MT061169	MT960101/Coors 37	12.45	11.58	9.70	9.54	11.70	10.99
MT070063	MT010178/MT970116	12.34	11.08	9.60	9.51	11.15	10.74
MT070086	MT970148/Coors 37	12.90	13.06	10.20	9.31	11.86	11.47
MT070111	MT010178/Harrington	12.19	10.99	9.20	9.33	11.04	10.55
MT070125	MT981210/MT970116	12.52	11.34	10.60	9.89	11.24	11.12
MT070148	MT990172/Metcalfe	12.41	11.56	9.20	10.30	11.84	11.06
MT070156	MT970148/Klages	12.19	11.31	9.50	9.86	11.02	10.78
MT070157	MT970148/Klages	12.46	11.11	8.80	9.90	10.79	10.61
MT070158	MT970148/Klages	12.60	11.81	10.30	9.71	11.84	11.25
MT070159	MT970148/Klages	12.08	10.75	9.60	9.53	10.97	10.59
MT070161	MT970148/Klages	12.51	11.76	9.10	9.60	11.56	10.91
MT070175	LK644///Hockett F5	11.61	10.17	9.40	9.60	10.90	10.34
MT080001	Amulet/Metcalfe	13.16	11.84	13.00	9.58	13.08	12.13
MT080017	Amulet/MT960101	12.19	10.89	8.70	9.86	11.52	10.63
MT080077	Coors/Kendall	12.24	11.98	11.90	9.74	11.63	11.50
MT080081	Coors/Metcalfe	12.36	11.58	11.30	9.74	11.96	11.39
MT080083	Coors/Metcalfe	12.26	12.55	13.10	9.76	12.13	11.96
MT080084	Coors/Metcalfe	12.65	12.26	12.60	9.96	11.96	11.89
MT080085	Coors/Metcalfe	12.46	11.72	11.40	9.75	10.89	11.24
EM090130	03021-35	12.36	11.35	9.80	10.11	11.59	11.04
EM090134	03021-74	12.85	11.29	10.30	9.83	11.86	11.23
MT080100	Karma	14.07	14.07	12.30	14.68	14.40	13.90
MT080172	Klages/Stratus	13.01	10.56	11.90	10.26	11.46	11.44
MT080179	Metcalfe/MT990106	13.08	12.71	10.40	10.23	12.03	11.69

ID	PEDIGREE	Havre	Sidney	Moccasin	Huntley	Bozeman	Mean
2B965057	Conrad	12.75	11.49	11.40	9.67	11.53	11.37
MT080243	MT960101/MT981210	12.57	12.13	8.70	9.49	11.48	10.88
MT080261	MT970026/MT981091	12.55	10.98	12.20	10.04	12.00	11.55
MT080274	MT970148/Conlon	12.33	10.05	8.90	9.41	10.91	10.32
MT080277	MT970148/Merit	12.20	10.93	9.90	9.84	11.62	10.90
MT080279	MT970148/MT970116	12.13	12.19	10.30	9.14	11.24	11.00
MT080281	MT970148/MT970116	12.17	11.54	8.80	9.17	10.92	10.52
MT080283	MT970148/MT970116	12.32	11.30	9.30	9.42	11.15	10.70
MT080284	MT970148/MT970116	12.27	10.91	9.50	9.36	11.42	10.69
MT080285	MT970148/MT970116	12.86	11.05	8.80	9.40	11.41	10.70
MT910189	Hockett	12.12	10.88	9.60	9.98	11.54	10.82
MT950186	Haxby	11.90	10.04	9.60	10.09	11.89	10.71
MT960101	Geraldine	12.68	12.71	9.30	9.76	10.97	11.08
MT970116	Craft	12.54	11.87	11.00	10.28	11.92	11.52
PI568246	Baronesse	11.81	11.86	10.50	9.08	11.64	10.98
PI643354	Pinnacle	11.99	10.06	9.40	9.14	10.97	10.31
SK 76333	Harrington	12.45	10.81	9.10	10.12	11.61	10.82
TR232	Metcalfe	13.01	10.52	10.50	9.89	11.69	11.12
COPELAND	Copeland	13.01	10.82	9.00	9.56	10.94	10.67
SCARLETT	Scarlett	12.22	9.57	9.60	10.20	12.38	10.79
	Mean	12.44	11.34	10.14	9.79	11.60	11.06
	C.V.	1.63	1.83	***	1.06	1.02	1.38
	F-value	1.99	4.39	***	11.47	7.93	6.45
	L.S.D.	0.99	1.07	***	0.58	0.59	0.81
	Efficiency Rel RCB	159.06	169.39	***	136.93	160.72	***

Table 9. Montana Intrastate Barley Statewide, All Traits, Averages for all Irrigated Locations 2010

ID	Pedigree	Yield	Test Wt	Plump	Thin	Protein	Heading Date	Plant Ht
		bu/acre	lbs/bushel	%	%	%	(Julian)	in
2B965057	Conrad	119.70	51.12	91.26	2.69	12.63	181.64	31.21
6B952482	Tradition	101.36	49.29	89.32	2.03	12.14	179.16	33.67
COPELAND	Copeland	111.61	50.35	92.10	2.44	11.34	181.87	35.08
EM090117	03013-25	113.31	50.64	94.74	0.81	12.47	185.28	29.27
EM090128	03021-03	121.79	50.50	89.91	2.46	11.85	184.04	27.70
EM090130	03021-35	117.24	51.86	93.47	1.45	11.96	185.24	26.83
EM090134	03021-74	108.31	50.12	89.90	2.22	12.22	183.97	30.30
MT010158	Amsterdam	101.43	50.27	90.08	3.02	12.42	180.54	30.34
MT010160	MT920041/Harrington	100.34	51.67	88.05	3.79	12.40	181.78	32.52
MT020155	MT960225/H1851195	110.93	50.21	85.82	5.09	11.83	177.83	31.52
MT020162	MT960225/H1851195	111.13	51.38	90.93	2.61	12.07	182.09	32.64
MT020167	MT960225/H3860224	108.25	51.49	91.90	2.80	12.41	181.08	32.20
MT020204	MTLB 32/H1851195	107.84	51.29	86.64	4.21	12.17	178.79	31.90
MT020205	MTLB 32/H1851195	115.34	50.40	86.03	5.33	12.67	178.39	32.39
MT030042	MT910189/MT960099	105.40	51.59	85.96	5.94	10.94	179.01	29.34
MT030063	MT950155/Harrington	108.72	51.69	91.78	2.57	11.62	182.06	33.20
MT030079	MT950186/MT960225	111.07	52.54	92.50	2.28	11.62	181.29	31.68
MT040073	MT960045/Harrington	105.56	52.63	90.06	3.37	12.67	180.48	31.95
MT040209	MT960228/MT950186	119.66	51.09	87.08	4.27	11.74	181.64	32.25
MT050030	GS 1750/Bearpaw	116.85	50.75	91.27	2.74	11.28	181.82	32.33
MT050062	Harrington/MT960225	111.21	51.96	92.30	2.39	10.82	182.69	34.54
MT061032	Baronesse/MT981210	119.06	50.79	90.64	3.23	11.98	182.11	30.36
MT061035	Baronesse/MT981210	120.20	51.06	90.71	3.33	11.85	181.95	31.70
MT061104	Harrington/MT970229	111.34	50.79	92.01	2.67	12.18	179.87	31.89
MT061169	MT960101/Coors 37	116.59	51.24	88.84	4.11	12.45	181.99	30.67
MT070063	MT010178/MT970116	109.37	51.58	89.78	3.21	11.99	179.90	48.83
MT070086	MT970148/Coors 37	117.17	50.50	90.62	2.46	11.68	182.09	26.40
MT070111	MT010178/Harrington	103.74	51.15	89.19	4.22	11.94	181.76	32.20
MT070125	MT981210/MT970116	112.46	51.71	91.25	3.07	11.68	182.00	31.82
MT070148	MT990172/Metcalfe	113.77	51.47	96.19	0.88	12.26	180.51	31.54
MT070156	MT970148/Klages	119.33	51.36	92.28	2.61	11.75	179.54	30.29
MT070157	MT970148/Klages	114.45	51.51	92.83	2.35	11.92	179.39	29.86
MT070158	MT970148/Klages	116.93	51.56	93.28	2.36	11.86	180.37	30.22
MT070159	MT970148/Klages	119.01	51.34	91.23	3.12	11.81	179.98	30.39
MT070161	MT970148/Klages	118.46	51.55	92.38	2.79	11.77	179.47	29.05
MT070175	LK644///Hockett F5	107.37	50.78	92.13	2.60	10.72	180.85	33.37
MT080001	Amulet/Metcalfe	108.83	52.28	94.43	1.37	12.83	183.24	28.33
MT080017	Amulet/MT960101	114.29	51.93	93.27	1.58	11.47	183.33	33.22
MT080077	Coors/Kendall	116.02	51.09	93.38	1.87	12.22	183.61	29.64
MT080081	Coors/Metcalfe	110.91	51.03	91.83	2.40	12.59	183.87	29.68
MT080083	Coors/Metcalfe	114.46	50.77	91.91	1.99	12.28	182.88	30.15
MT080084	Coors/Metcalfe	110.55	51.31	93.06	1.48	12.36	183.85	29.44
MT080085	Coors/Metcalfe	116.10	51.32	90.56	3.14	11.95	182.36	30.74

ID	Pedigree	Yield	Test Wt	Plump	Thin	Protein	Heading Date	Plant Ht
		bu/acre	Lbs/bushel	%	%	%	(Julian)	in
MT080100	Karma	51.11	59.07	88.02	3.79	15.30	182.11	33.62
MT080172	Klages/Stratus	103.83	49.86	87.09	4.57	12.30	180.01	31.31
MT080179	Metcalfe/MT990106	105.77	52.00	94.51	1.33	12.42	180.27	34.58
MT080243	MT960101/MT981210	107.86	50.93	89.47	3.83	12.09	181.80	33.72
MT080261	MT970026/MT981091	105.77	50.33	82.05	6.91	12.12	179.58	29.86
MT080274	MT970148/Conlon	116.45	50.38	91.13	2.83	11.59	178.70	29.43
MT080277	MT970148/Merit	110.02	50.23	90.87	2.99	11.97	180.36	29.95
MT080279	MT970148/MT970116	117.11	50.82	90.60	2.85	11.60	180.10	29.19
MT080281	MT970148/MT970116	112.58	50.48	91.24	2.85	11.47	179.72	28.54
MT080283	MT970148/MT970116	118.53	51.02	92.71	2.53	11.75	180.10	28.15
MT080284	MT970148/MT970116	117.74	50.89	91.67	2.49	11.57	179.55	29.63
MT080285	MT970148/MT970116	117.44	51.37	93.00	2.11	11.77	180.18	28.94
MT910189	Hockett	105.44	51.42	89.51	3.80	11.66	178.67	32.06
MT950186	Haxby	111.08	51.90	90.71	3.10	12.14	179.59	31.65
MT960101	Geraldine	113.35	50.83	87.07	4.48	11.63	182.90	30.73
MT970116	Craft	106.39	52.41	92.05	2.80	11.90	180.35	34.98
PI568246	Baronesse	119.10	51.81	92.24	2.46	11.94	182.20	29.94
PI643354	Pinnacle	98.53	50.40	94.92	1.44	10.68	178.13	32.81
SCARLETT	Scarlett	114.03	50.95	94.87	1.12	12.14	183.79	29.17
SK 76333	Harrington	109.52	50.22	90.97	2.77	11.88	181.88	33.02
TR232	Metcalfe	104.46	50.51	90.63	2.98	12.23	180.47	32.70
	Mean	110.99	51.23	90.91	2.90	11.98	181.19	31.35
	C.V.	6.73	1.51	2.61	36.05	3.18	0.70	11.12
	P-value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	F-Value	8.23	16.98	4.71	7.25	16.66	166.26	6.52
	L.S.D.	12.08	1.25	3.84	1.69	0.62	2.05	5.63

Table 10. Montana Intrastate Barley Yield (bu/acre) Averages for all Irrigated Locations 2010

<b>ID</b>	<b>PEDIGREE</b>	<b>Bozeman</b>	<b>Sidney</b>	<b>Huntley</b>	<b>Mean</b>
2B965057	Conrad	122.48	106.56	130.05	119.70
6B952482	Tradition	86.27	101.25	116.56	101.36
MT010158	Amsterdam	105.33	83.40	115.55	101.43
MT010160	MT920041/Harrington	90.71	90.82	119.50	100.34
MT020155	MT960225/H1851195	91.64	113.45	127.69	110.93
MT020162	MT960225/H1851195	110.93	101.81	120.65	111.13
MT020167	MT960225/H3860224	96.46	107.59	120.70	108.25
MT020204	MTLB 32/H1851195	100.65	103.55	119.31	107.84
MT020205	MTLB 32/H1851195	109.96	108.92	127.15	115.34
MT030042	MT910189/MT960099	84.06	101.84	130.29	105.40
MT030063	MT950155/Harrington	108.86	102.35	114.93	108.72
MT030079	MT950186/MT960225	105.52	106.40	121.28	111.07
MT040073	MT960045/Harrington	103.47	110.87	102.32	105.56
MT040209	MT960228/MT950186	122.13	117.24	119.61	119.66
MT050030	GS 1750/Bearpaw	108.21	117.21	125.14	116.85
MT050062	Harrington/MT960225	103.83	106.56	123.23	111.21
MT061032	Baronesse/MT981210	107.33	116.14	133.73	119.06
MT061035	Baronesse/MT981210	121.17	110.32	129.12	120.20
EM090117	03013-25	120.97	94.34	124.61	113.31
EM090128	03021-03	120.41	112.93	132.02	121.79
MT061104	Harrington/MT970229	101.10	107.24	125.69	111.34
MT061169	MT960101/Coors 37	116.77	110.89	122.11	116.59
MT070063	MT010178/MT970116	109.55	101.81	116.75	109.37
MT070086	MT970148/Coors 37	117.70	92.30	141.52	117.17
MT070111	MT010178/Harrington	98.66	99.01	113.56	103.74
MT070125	MT981210/MT970116	105.79	111.61	119.97	112.46
MT070148	MT990172/Metcalfe	101.91	108.80	130.59	113.77
MT070156	MT970148/Klages	109.23	113.59	135.18	119.33
MT070157	MT970148/Klages	111.28	105.22	126.85	114.45
MT070158	MT970148/Klages	112.34	101.59	136.85	116.93
MT070159	MT970148/Klages	110.41	111.12	135.49	119.01
MT070161	MT970148/Klages	113.18	105.09	137.12	118.46
MT070175	LK644///Hockett F5	101.07	100.31	120.72	107.37
MT080001	Amulet/Metcalfe	101.34	105.27	119.87	108.83
MT080017	Amulet/MT960101	106.03	108.75	128.08	114.29
MT080077	Coors/Kendall	118.98	104.97	124.11	116.02
MT080081	Coors/Metcalfe	111.23	100.34	121.17	110.91
MT080083	Coors/Metcalfe	114.95	108.85	119.59	114.46
MT080084	Coors/Metcalfe	106.91	102.79	121.97	110.55
MT080085	Coors/Metcalfe	105.19	114.10	129.02	116.10
EM090130	03021-35	112.31	103.29	136.11	117.24
EM090134	03021-74	112.17	92.09	120.68	108.31
MT080100	Karma	65.53	44.49	43.30	51.11
MT080172	Klages/Stratus	101.56	102.56	107.36	103.83
MT080179	Metcalfe/MT990106	101.56	105.31	110.45	105.77

<b>ID</b>	<b>PEDIGREE</b>	<b>Bozeman</b>	<b>Sidney</b>	<b>Huntley</b>	<b>Mean</b>
MT080243	MT960101/MT981210	103.51	108.49	111.56	107.86
MT080261	MT970026/MT981091	95.36	101.78	120.16	105.77
MT080274	MT970148/Conlon	103.99	113.84	131.52	116.45
MT080277	MT970148/Merit	97.69	105.91	126.45	110.02
MT080279	MT970148/MT970116	108.41	107.55	135.38	117.11
MT080281	MT970148/MT970116	102.48	104.14	131.13	112.58
MT080283	MT970148/MT970116	103.26	111.09	141.25	118.53
MT080284	MT970148/MT970116	110.53	107.53	135.16	117.74
MT080285	MT970148/MT970116	112.93	113.83	125.55	117.44
MT910189	Hockett	96.29	103.56	116.46	105.44
MT950186	Haxby	102.55	115.45	115.22	111.08
MT960101	Geraldine	106.91	107.12	126.03	113.35
MT970116	Craft	99.80	109.62	109.74	106.39
PI568246	Baronesse	110.81	114.46	132.02	119.10
PI643354	Pinnacle	84.54	102.39	108.67	98.53
SK 76333	Harrington	97.66	106.05	124.85	109.52
TR232	Metcalfe	90.68	108.89	113.80	104.46
COPELAND	Copeland	104.56	111.31	118.95	111.61
SCARLETT	Scarlett	114.08	100.65	127.37	114.03
	Mean	105.21	105.13	122.64	110.99
	C.V.	7.23	5.70	6.53	6.48
	F-Value	5.18	7.74	8.82	7.25
	L.S.D.	12.60	9.85	11.68	11.38
	Efficiency Rel RCB	114.54	107.96	101.56	***

Table 11. Montana Intrastate Barley Test Weight (lbs/bu) Averages for all Irrigated Locations 2010

ID	PEDIGREE	Bozeman	Sidney	Huntley	Mean
2B965057	Conrad	50.35	50.00	53.00	51.12
6B952482	Tradition	49.18	46.50	52.20	49.29
MT010158	Amsterdam	50.62	47.50	52.70	50.27
MT010160	MT920041/Harrington	52.43	49.50	53.07	51.67
MT020155	MT960225/H1851195	49.72	48.50	52.41	50.21
MT020162	MT960225/H1851195	51.49	49.50	53.14	51.38
MT020167	MT960225/H3860224	49.73	51.00	53.74	51.49
MT020204	MTLB 32/H1851195	50.67	49.50	53.69	51.29
MT020205	MTLB 32/H1851195	49.45	49.00	52.74	50.40
MT030042	MT910189/MT960099	50.24	50.50	54.01	51.59
MT030063	MT950155/Harrington	51.83	50.00	53.25	51.69
MT030079	MT950186/MT960225	52.29	51.00	54.33	52.54
MT040073	MT960045/Harrington	52.70	52.00	53.20	52.63
MT040209	MT960228/MT950186	50.91	49.50	52.86	51.09
MT050030	GS 1750/Bearpaw	49.78	49.50	52.97	50.75
MT050062	Harrington/MT960225	50.62	51.00	54.27	51.96
MT061032	Baronesse/MT981210	49.31	50.50	52.57	50.79
MT061035	Baronesse/MT981210	50.20	50.00	52.98	51.06
EM090117	03013-25	50.91	48.00	53.00	50.64
EM090128	03021-03	49.95	49.00	52.56	50.50
MT061104	Harrington/MT970229	49.70	49.00	53.66	50.79
MT061169	MT960101/Coors 37	51.62	49.00	53.09	51.24
MT070063	MT010178/MT970116	51.35	50.00	53.39	51.58
MT070086	MT970148/Coors 37	50.58	48.50	52.43	50.50
MT070111	MT010178/Harrington	50.44	50.00	53.01	51.15
MT070125	MT981210/MT970116	50.79	51.00	53.35	51.71
MT070148	MT990172/Metcalfe	50.86	49.50	54.05	51.47
MT070156	MT970148/Klages	50.90	50.00	53.18	51.36
MT070157	MT970148/Klages	51.61	49.50	53.42	51.51
MT070158	MT970148/Klages	51.55	50.00	53.12	51.56
MT070159	MT970148/Klages	50.78	50.50	52.74	51.34
MT070161	MT970148/Klages	51.62	49.50	53.53	51.55
MT070175	LK644///Hockett F5	49.99	50.00	52.37	50.78
MT080001	Amulet/Metcalfe	50.50	52.00	54.35	52.28
MT080017	Amulet/MT960101	51.36	50.00	54.44	51.93
MT080077	Coors/Kendall	51.28	49.00	52.99	51.09
MT080081	Coors/Metcalfe	51.32	49.00	52.77	51.03
MT080083	Coors/Metcalfe	51.40	48.00	52.91	50.77
MT080084	Coors/Metcalfe	50.84	50.00	53.10	51.31
MT080085	Coors/Metcalfe	48.85	51.00	54.12	51.32
EM090130	03021-35	51.32	50.00	54.27	51.86
EM090134	03021-74	49.58	48.00	52.79	50.12
MT080100	Karma	60.40	57.50	59.31	59.07
MT080172	Klages/Stratus	49.17	48.50	51.91	49.86

<b>ID</b>	<b>PEDIGREE</b>	<b>Bozeman</b>	<b>Sidney</b>	<b>Huntley</b>	<b>Mean</b>
MT080179	Metcalfe/MT990106	51.85	51.00	53.16	52.00
MT080243	MT960101/MT981210	49.82	50.50	52.47	50.93
MT080261	MT970026/MT981091	50.69	48.00	52.30	50.33
MT080274	MT970148/Conlon	49.34	50.00	51.79	50.38
MT080277	MT970148/Merit	49.61	48.50	52.57	50.23
MT080279	MT970148/MT970116	50.43	49.50	52.53	50.82
MT080281	MT970148/MT970116	50.38	48.00	53.07	50.48
MT080283	MT970148/MT970116	50.53	49.50	53.03	51.02
MT080284	MT970148/MT970116	50.91	48.50	53.24	50.89
MT080285	MT970148/MT970116	50.76	50.00	53.34	51.37
MT910189	Hockett	50.82	50.00	53.43	51.42
MT950186	Haxby	50.71	52.00	53.01	51.90
MT960101	Geraldine	49.71	49.00	53.78	50.83
MT970116	Craft	52.20	51.00	54.03	52.41
PI568246	Baronesse	51.06	51.00	53.36	51.81
PI643354	Pinnacle	49.39	49.50	52.31	50.40
SK 76333	Harrington	48.13	50.00	52.53	50.22
TR232	Metcalfe	49.38	50.00	52.16	50.51
COPELAND	Copeland	49.82	49.50	51.74	50.35
SCARLETT	Scarlett	50.13	50.00	52.72	50.95
	Mean	50.72	49.80	53.18	51.23
	C.V.	1.50	***	0.73	1.11
	F-Value	5.23	***	9.53	7.38
	L.S.D.	1.73	***	0.86	1.30
	Efficiency Rel RCB	97.54	***	98.85	***

Table 12. Montana Intrastate Barley % Plump Averages for all Irrigated Locations 2010

ID	PEDIGREE	Bozeman	Sidney	Huntley	Mean
2B965057	Conrad	92.52	90.00	91.25	91.26
6B952482	Tradition	92.61	82.00	93.36	89.32
MT010158	Amsterdam	93.97	85.00	91.26	90.08
MT010160	MT920041/Harrington	94.09	84.00	86.06	88.05
MT020155	MT960225/H1851195	89.43	82.00	86.04	85.82
MT020162	MT960225/H1851195	94.98	88.00	89.81	90.93
MT020167	MT960225/H3860224	90.83	92.00	92.87	91.90
MT020204	MTLB 32/H1851195	90.79	80.00	89.12	86.64
MT020205	MTLB 32/H1851195	89.48	83.00	85.60	86.03
MT030042	MT910189/MT960099	80.59	90.00	87.28	85.96
MT030063	MT950155/Harrington	94.68	89.00	91.67	91.78
MT030079	MT950186/MT960225	93.45	91.00	93.06	92.50
MT040073	MT960045/Harrington	94.36	89.00	86.83	90.06
MT040209	MT960228/MT950186	90.30	88.00	82.93	87.08
MT050030	GS 1750/Bearpaw	93.08	89.00	91.73	91.27
MT050062	Harrington/MT960225	93.65	90.00	93.25	92.30
MT061032	Baronesse/MT981210	94.30	89.00	88.63	90.64
MT061035	Baronesse/MT981210	93.76	88.00	90.37	90.71
EM090117	03013-25	97.49	91.00	95.72	94.74
EM090128	03021-03	91.49	86.00	92.24	89.91
MT061104	Harrington/MT970229	95.16	88.00	92.88	92.01
MT061169	MT960101/Coors 37	87.67	89.00	89.85	88.84
MT070063	MT010178/MT970116	93.88	87.00	88.46	89.78
MT070086	MT970148/Coors 37	94.08	87.00	90.79	90.62
MT070111	MT010178/Harrington	89.86	89.00	88.72	89.19
MT070125	MT981210/MT970116	92.01	90.00	91.76	91.25
MT070148	MT990172/Metcalfe	96.76	95.00	96.81	96.19
MT070156	MT970148/Klages	95.43	89.00	92.41	92.28
MT070157	MT970148/Klages	94.98	91.00	92.49	92.83
MT070158	MT970148/Klages	95.42	93.00	91.43	93.28
MT070159	MT970148/Klages	92.87	91.00	89.82	91.23
MT070161	MT970148/Klages	94.96	90.00	92.19	92.38
MT070175	LK644///Hockett F5	93.77	91.00	91.61	92.13
MT080001	Amulet/Metcalfe	96.81	91.00	95.48	94.43
MT080017	Amulet/MT960101	94.78	90.00	95.03	93.27
MT080077	Coors/Kendall	96.34	89.00	94.78	93.38
MT080081	Coors/Metcalfe	94.47	88.00	93.03	91.83
MT080083	Coors/Metcalfe	96.14	85.00	94.57	91.91
MT080084	Coors/Metcalfe	96.89	88.00	94.31	93.06
MT080085	Coors/Metcalfe	85.90	93.00	92.79	90.56
EM090130	03021-35	97.16	89.00	94.25	93.47
EM090134	03021-74	92.80	86.00	90.89	89.90
MT080100	Karma	91.29	88.00	84.77	88.02
MT080172	Klages/Stratus	89.30	87.00	84.96	87.09
MT080179	Metcalfe/MT990106	95.35	94.00	94.19	94.51

ID	PEDIGREE	Bozeman	Sidney	Huntley	Mean
MT080243	MT960101/MT981210	89.37	91.00	88.06	89.47
MT080261	MT970026/MT981091	84.18	77.00	84.97	82.05
MT080274	MT970148/Conlon	93.97	90.00	89.41	91.13
MT080277	MT970148/Merit	92.29	88.00	92.31	90.87
MT080279	MT970148/MT970116	92.31	90.00	89.51	90.60
MT080281	MT970148/MT970116	93.47	89.00	91.25	91.24
MT080283	MT970148/MT970116	95.03	91.00	92.09	92.71
MT080284	MT970148/MT970116	92.59	90.00	92.42	91.67
MT080285	MT970148/MT970116	92.75	92.00	94.24	93.00
MT910189	Hockett	87.80	88.00	92.73	89.51
MT950186	Haxby	91.65	90.00	90.49	90.71
MT960101	Geraldine	87.18	83.00	91.04	87.07
MT970116	Craft	92.72	91.00	92.45	92.05
PI568246	Baronesse	94.12	92.00	90.61	92.24
PI643354	Pinnacle	95.96	94.00	94.80	94.92
SK 76333	Harrington	92.42	91.00	89.49	90.97
TR232	Metcalfe	91.29	91.00	89.60	90.63
COPELAND	Copeland	94.57	93.00	88.72	92.10
SCARLETT	Scarlett	96.15	93.00	95.47	94.87
	Mean	92.81	88.88	91.05	90.91
	C.V.	1.76	***	2.27	2.02
	F-Value	9.58	***	5.18	7.38
	L.S.D.	2.74	***	3.50	3.12
	Efficiency Rel RCB	100.94	***	101.85	***

Table 13. Montana Intrastate Barley Heading Date (Julian) Averages for all Irrigated Locations 2010

ID	PEDIGREE	Bozeman	Sidney	Huntley	Mean
2B965057	Conrad	192.25	182.68	170.00	181.64
6B952482	Tradition	191.38	180.70	165.38	179.16
MT010158	Amsterdam	190.04	182.33	169.23	180.54
MT010160	MT920041/Harrington	193.31	182.31	169.73	181.78
MT020155	MT960225/H1851195	188.44	180.34	164.71	177.83
MT020162	MT960225/H1851195	193.21	183.01	170.04	182.09
MT020167	MT960225/H3860224	191.62	182.00	169.60	181.08
MT020204	MTLB 32/H1851195	190.30	180.98	165.09	178.79
MT020205	MTLB 32/H1851195	188.60	181.30	165.27	178.39
MT030042	MT910189/MT960099	189.07	181.36	166.60	179.01
MT030063	MT950155/Harrington	193.85	183.32	169.00	182.06
MT030079	MT950186/MT960225	192.57	181.66	169.64	181.29
MT040073	MT960045/Harrington	191.33	181.34	168.77	180.48
MT040209	MT960228/MT950186	192.27	182.35	170.30	181.64
MT050030	GS 1750/Bearpaw	194.04	182.69	168.72	181.82
MT050062	Harrington/MT960225	194.67	182.67	170.73	182.69
MT061032	Baronesse/MT981210	192.73	182.67	170.94	182.11
MT061035	Baronesse/MT981210	192.53	182.98	170.34	181.95
EM090117	03013-25	196.79	184.01	175.05	185.28
EM090128	03021-03	195.51	183.00	173.60	184.04
MT061104	Harrington/MT970229	191.99	181.99	165.63	179.87
MT061169	MT960101/Coors 37	192.30	182.65	171.00	181.99
MT070063	MT010178/MT970116	192.06	181.34	166.30	179.90
MT070086	MT970148/Coors 37	193.26	181.31	171.70	182.09
MT070111	MT010178/Harrington	192.61	182.33	170.33	181.76
MT070125	MT981210/MT970116	194.70	183.02	168.29	182.00
MT070148	MT990172/Metcalfe	191.92	181.32	168.28	180.51
MT070156	MT970148/Klages	189.96	180.99	167.69	179.54
MT070157	MT970148/Klages	188.49	181.34	168.33	179.39
MT070158	MT970148/Klages	191.17	181.35	168.60	180.37
MT070159	MT970148/Klages	188.97	181.67	169.30	179.98
MT070161	MT970148/Klages	189.68	181.03	167.71	179.47
MT070175	LK644///Hockett F5	192.88	181.96	167.72	180.85
MT080001	Amulet/Metcalfe	195.10	182.98	171.64	183.24
MT080017	Amulet/MT960101	194.21	183.68	172.10	183.33
MT080077	Coors/Kendall	194.92	182.63	173.29	183.61
MT080081	Coors/Metcalfe	195.60	182.00	174.01	183.87
MT080083	Coors/Metcalfe	193.95	182.36	172.34	182.88
MT080084	Coors/Metcalfe	195.27	182.65	173.62	183.85
MT080085	Coors/Metcalfe	192.37	182.99	171.71	182.36
EM090130	03021-35	196.07	184.00	175.66	185.24
EM090134	03021-74	194.93	183.00	173.99	183.97
MT080100	Karma	195.31	182.64	168.36	182.11
MT080172	Klages/Stratus	190.73	182.32	166.99	180.01
MT080179	Metcalfe/MT990106	191.83	181.34	167.65	180.27

<b>ID</b>	<b>PEDIGREE</b>	<b>Bozeman</b>	<b>Sidney</b>	<b>Huntley</b>	<b>Mean</b>
MT080243	MT960101/MT981210	193.32	182.67	169.43	181.80
MT080261	MT970026/MT981091	191.66	181.02	166.07	179.58
MT080274	MT970148/Conlon	189.00	180.64	166.44	178.70
MT080277	MT970148/Merit	190.02	181.67	169.39	180.36
MT080279	MT970148/MT970116	190.43	181.66	168.22	180.10
MT080281	MT970148/MT970116	190.10	180.67	168.41	179.72
MT080283	MT970148/MT970116	190.36	181.67	168.28	180.10
MT080284	MT970148/MT970116	190.37	181.32	166.97	179.55
MT080285	MT970148/MT970116	190.87	181.67	167.99	180.18
MT910189	Hockett	188.30	182.03	165.69	178.67
MT950186	Haxby	191.10	180.68	166.99	179.59
MT960101	Geraldine	192.80	183.31	172.58	182.90
MT970116	Craft	191.71	181.99	167.35	180.35
PI568246	Baronesse	193.31	182.34	170.97	182.20
PI643354	Pinnacle	189.05	180.67	164.67	178.13
SK 76333	Harrington	193.33	181.99	170.30	181.88
TR232	Metcalfe	191.44	182.32	167.66	180.47
<b>COPELAND</b>	<b>Copeland</b>	<b>192.62</b>	<b>183.03</b>	<b>169.98</b>	<b>181.87</b>
SCARLETT	Scarlett	194.73	182.99	173.65	183.79
	Mean	192.18	182.08	169.31	181.19
	C.V.	0.67	0.37	0.62	0.55
	F-Value	13.04	8.17	28.60	16.60
	L.S.D.	1.51	0.81	1.31	1.21
	Efficiency Rel RCB	103.05	97.80	101.21	***

Table 14. Montana Intrastate Barley Plant Height (in) Averages for all Irrigated Locations 2010

ID	PEDIGREE	Bozeman	Sidney	Huntley	Mean
2B965057	Conrad	29.14	26.92	37.56	31.21
6B952482	Tradition	31.89	29.29	39.85	33.67
MT010158	Amsterdam	28.00	26.11	36.92	30.34
MT010160	MT920041/Harrington	29.13	29.92	38.53	32.52
MT020155	MT960225/H1851195	27.07	28.82	38.65	31.52
MT020162	MT960225/H1851195	30.31	30.50	37.09	32.64
MT020167	MT960225/H3860224	29.33	29.89	37.39	32.20
MT020204	MTLB 32/H1851195	28.35	28.22	39.12	31.90
MT020205	MTLB 32/H1851195	29.77	28.94	38.46	32.39
MT030042	MT910189/MT960099	25.60	27.11	35.32	29.34
MT030063	MT950155/Harrington	29.31	30.80	39.48	33.20
MT030079	MT950186/MT960225	27.95	29.06	38.02	31.68
MT040073	MT960045/Harrington	28.56	29.11	38.18	31.95
MT040209	MT960228/MT950186	29.19	28.98	38.58	32.25
MT050030	GS 1750/Bearpaw	28.93	28.53	39.53	32.33
MT050062	Harrington/MT960225	30.70	30.75	42.16	34.54
MT061032	Baronesse/MT981210	28.23	27.15	35.69	30.36
MT061035	Baronesse/MT981210	30.18	28.66	36.25	31.70
EM090117	03013-25	26.43	27.63	33.76	29.27
EM090128	03021-03	24.57	26.21	32.33	27.70
MT061104	Harrington/MT970229	27.94	28.97	38.77	31.89
MT061169	MT960101/Coors 37	28.40	26.72	36.89	30.67
MT070063	MT010178/MT970116	32.54	30.09	83.86	48.83
MT070086	MT970148/Coors 37	23.41	28.14	27.65	26.40
MT070111	MT010178/Harrington	27.52	30.24	38.84	32.20
MT070125	MT981210/MT970116	30.24	29.08	36.16	31.82
MT070148	MT990172/Metcalfe	29.03	28.78	36.81	31.54
MT070156	MT970148/Klages	25.01	28.23	37.63	30.29
MT070157	MT970148/Klages	26.55	27.51	35.53	29.86
MT070158	MT970148/Klages	26.46	28.53	35.66	30.22
MT070159	MT970148/Klages	26.61	28.27	36.28	30.39
MT070161	MT970148/Klages	26.92	26.62	33.60	29.05
MT070175	LK644///Hockett F5	29.73	29.49	40.88	33.37
MT080001	Amulet/Metcalfe	25.53	26.26	33.21	28.33
MT080017	Amulet/MT960101	30.86	28.61	40.19	33.22
MT080077	Coors/Kendall	27.77	27.52	33.61	29.64
MT080081	Coors/Metcalfe	27.56	25.52	35.95	29.68
MT080083	Coors/Metcalfe	27.43	28.53	34.50	30.15
MT080084	Coors/Metcalfe	25.04	27.45	35.83	29.44
MT080085	Coors/Metcalfe	28.48	28.24	35.51	30.74
EM090130	03021-35	23.32	27.40	29.77	26.83
EM090134	03021-74	26.89	29.39	34.60	30.30
MT080100	Karma	31.76	31.14	37.98	33.62
MT080172	Klages/Stratus	28.74	28.69	36.49	31.31
MT080179	Metcalfe/MT990106	32.90	30.19	40.66	34.58

<b>ID</b>	<b>PEDIGREE</b>	<b>Bozeman</b>	<b>Sidney</b>	<b>Huntley</b>	<b>Mean</b>
MT080243	MT960101/MT981210	31.49	29.51	40.15	33.72
MT080261	MT970026/MT981091	27.08	27.33	35.17	29.86
MT080274	MT970148/Conlon	26.45	27.67	34.17	29.43
MT080277	MT970148/Merit	25.75	29.02	35.09	29.95
MT080279	MT970148/MT970116	25.37	27.47	34.74	29.19
MT080281	MT970148/MT970116	25.64	26.71	33.26	28.54
MT080283	MT970148/MT970116	26.07	26.85	31.52	28.15
T080284	MT970148/MT970116	26.53	28.77	33.59	29.63
MT080285	MT970148/MT970116	26.79	26.44	33.59	28.94
MT910189	Hockett	28.44	30.25	37.49	32.06
MT950186	Haxby	27.30	28.37	39.30	31.65
MT960101	Geraldine	28.43	27.42	36.35	30.73
MT970116	Craft	31.44	31.27	42.21	34.98
PI568246	Baronesse	27.35	28.22	34.24	29.94
PI643354	Pinnacle	29.55	28.30	40.59	32.81
SK 76333	Harrington	28.84	30.92	39.31	33.02
TR232	Metcalfe	29.33	30.91	37.85	32.70
COPELAND	Copeland	32.16	30.30	42.78	35.08
SCARLETT	Scarlett	26.20	28.93	32.38	29.17
	Mean	28.12	28.55	37.40	31.35
	C.V.	2.54	2.94	16.13	7.20
	F-Value	6.91	2.14	1.20	3.42
	L.S.D.	2.27	2.65	15.93	6.95
	Efficiency Rel RCB	109.09	108.03	98.14	105.09

Table 15. Montana Intrastate Barley Protein (%) Averages for all Irrigated Locations 2010

ID	PEDIGREE	Bozeman	Sidney	Huntley	Mean
2B965057	Conrad	12.41	13.57	11.90	12.63
6B952482	Tradition	12.46	12.56	11.39	12.14
MT010158	Amsterdam	12.42	12.99	11.86	12.42
MT010160	MT920041/Harrington	12.12	12.85	12.21	12.40
MT020155	MT960225/H1851195	11.90	12.03	11.56	11.83
MT020162	MT960225/H1851195	11.99	12.61	11.61	12.07
MT020167	MT960225/H3860224	12.29	13.29	11.65	12.41
MT020204	MTLB 32/H1851195	11.98	12.97	11.56	12.17
MT020205	MTLB 32/H1851195	12.29	13.23	12.49	12.67
MT030042	MT910189/MT960099	10.40	11.78	10.63	10.94
MT030063	MT950155/Harrington	11.10	12.64	11.11	11.62
MT030079	MT950186/MT960225	11.47	12.45	10.94	11.62
MT040073	MT960045/Harrington	12.31	13.03	12.68	12.67
MT040209	MT960228/MT950186	11.19	12.47	11.55	11.74
MT050030	GS 1750/Bearpaw	11.29	11.74	10.81	11.28
MT050062	Harrington/MT960225	10.60	11.72	10.15	10.82
MT061032	Baronesse/MT981210	11.70	13.00	11.23	11.98
MT061035	Baronesse/MT981210	11.91	12.88	10.75	11.85
EM090117	03013-25	12.03	13.71	11.68	12.47
EM090128	03021-03	11.40	13.16	10.99	11.85
MT061104	Harrington/MT970229	11.68	13.36	11.49	12.18
MT061169	MT960101/Coors 37	12.27	13.27	11.82	12.45
MT070063	MT010178/MT970116	11.51	13.09	11.36	11.99
MT070086	MT970148/Coors 37	11.51	13.11	10.41	11.68
MT070111	MT010178/Harrington	11.73	13.00	11.08	11.94
MT070125	MT981210/MT970116	11.30	12.60	11.13	11.68
MT070148	MT990172/Metcalfe	12.01	13.50	11.27	12.26
MT070156	MT970148/Klages	11.85	12.86	10.55	11.75
MT070157	MT970148/Klages	11.93	13.00	10.84	11.92
MT070158	MT970148/Klages	11.93	12.74	10.91	11.86
MT070159	MT970148/Klages	11.75	12.68	11.00	11.81
MT070161	MT970148/Klages	11.85	12.71	10.76	11.77
MT070175	LK644///Hockett F5	10.59	11.36	10.22	10.72
MT080001	Amulet/Metcalfe	12.68	13.78	12.03	12.83
MT080017	Amulet/MT960101	11.50	11.91	11.01	11.47
MT080077	Coors/Kendall	11.87	13.82	10.98	12.22
MT080081	Coors/Metcalfe	12.34	13.81	11.62	12.59
MT080083	Coors/Metcalfe	11.94	13.62	11.27	12.28
MT080084	Coors/Metcalfe	12.06	13.51	11.52	12.36
MT080085	Coors/Metcalfe	11.62	13.48	10.75	11.95
EM090130	03021-35	11.46	13.33	11.09	11.96
EM090134	03021-74	11.79	13.67	11.20	12.22
MT080100	Karma	14.20	16.38	15.31	15.30
MT080172	Klages/Stratus	11.83	12.92	12.15	12.30
MT080179	Metcalfe/MT990106	12.32	13.58	11.36	12.42

<b>ID</b>	<b>PEDIGREE</b>	<b>Bozeman</b>	<b>Sidney</b>	<b>Huntley</b>	<b>Mean</b>
MT080243	MT960101/MT981210	11.52	13.08	11.67	12.09
MT080261	MT970026/MT981091	11.74	12.80	11.81	12.12
MT080274	MT970148/Conlon	11.60	11.94	11.24	11.59
MT080277	MT970148/Merit	11.96	12.57	11.38	11.97
MT080279	MT970148/MT970116	11.55	12.43	10.83	11.60
MT080281	MT970148/MT970116	11.52	12.27	10.62	11.47
MT080283	MT970148/MT970116	11.87	12.81	10.56	11.75
MT080284	MT970148/MT970116	11.72	12.65	10.35	11.57
MT080285	MT970148/MT970116	12.07	13.01	10.24	11.77
MT910189	Hockett	11.61	11.99	11.38	11.66
MT950186	Haxby	12.07	12.66	11.70	12.14
MT960101	Geraldine	11.55	12.85	10.50	11.63
MT970116	Craft	11.86	12.36	11.50	11.90
PI568246	Baronesse	12.04	12.78	10.99	11.94
PI643354	Pinnacle	10.96	11.37	9.70	10.68
SK 76333	Harrington	12.02	12.34	11.29	11.88
TR232	Metcalfe	11.91	13.24	11.54	12.23
COPELAND	Copeland	11.45	11.75	10.82	11.34
SCARLETT	Scarlett	12.02	13.15	11.26	12.14
	Mean	11.81	12.87	11.27	11.98
	C.V.	0.92	0.92	1.33	1.06
	F-Value	7.68	14.27	8.06	7.87
	L.S.D.	0.55	0.56	0.72	0.61
	Efficiency Rel RCB	118.46	119.58	100.24	***