

PROJECT TITLE: Statewide Spring Wheat Variety Performance - 2012

PRINCIPAL INVESTIGATION:

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Personnel:

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OBJECTIVE: To evaluate new and existing varieties and experimental lines of spring wheat under various growing conditions and environments in Montana.

RESULTS: The 2012 Advanced Spring Wheat yield trial was grown at two irrigated and seven rain-fed sites across Montana. Irrigated sites were at Sidney and Bozeman. Rain-fed sites were at Havre, Sidney, Moccasin, Huntley, Conrad, Bozeman and Kalispell. Replicated multiple-row plots were established at all locations using standard research techniques. The nursery at NWARC-Kalispell was severely infested with stripe rust and orange wheat blossom midge. Data from that site are shown but not included in the averages. Summaries of yield, test weight, protein content, heading date, and plant height are shown in Tables 1, 2, 3, 4, and 5, respectively. A summary of averaged data across sites is shown in Table 6.

Highest yielding varieties at individual sites were MT1119 at **Havre**, Brennan at **Sidney rain fed**, MT1008 at **Sidney irrigated**, WB Gunnison at **Moccasin**, MT1164 at **Huntley**, MT1053 at **Conrad**, MT01053 at **Bozeman rain fed**, MT1142 at **Bozeman irrigated**, and Volt at **Kalispell**. Highest yielding line on a statewide basis was MT1053 (Table 1).

The entry with the highest test weight on a statewide basis was Kelby (Table 2). The entry with the highest protein on a statewide basis was Vantage (Table 3). Earliest heading entry on a statewide basis was MTHW1152, while latest was Vantage (Table 4). Shortest entry was WestBred Rockland while tallest was Thatcher (Table 5). An overall summary for the advanced spring wheat nursery grown across Montana is shown in Table 6.

SUMMARY: Highest yielding varieties at individual sites were MT1119 at **Havre**, Brennan at **Sidney rain fed**, MT1008 at **Sidney irrigated**, WB Gunnison at **Moccasin**, MT1164 at **Huntley**, MT1053 at **Conrad**, MT01053 at **Bozeman rain fed**, MT1142 at **Bozeman irrigated**, and Volt at **Kalispell**. Highest yielding line on a statewide basis was MT1053.

FUNDING SUMMARY: Expenditure information to be provided by OSP. No other grants support this project.

FUTURE PLANS: These trials will continue in 2013. The Statewide Spring Wheat 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. 2012 yield (bu/ac) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
VOLT	27.9*	31.0	38.7	26.0*	57.9*	80.9*	56.6	97.6*	52.1	50	<u>88.2</u>
BRENNAN	38.3	<u>43.9</u>	72.4*	25.2*	59.3*	70.8	55.5	88.1	56.7	11	61.6
SY TYRA	26.4	36.0	64.9	19.0	53.4	82.1*	62.2*	95.7*	55.0	26	40.3
SY605 CL	30.3	34.9	65.9	18.9	54.1	78.6	52.7	82.5	52.2	49	56.2
SY SOREN	28.4	38.1	53.0	20.8	55.8	76.4	54.3	87.7	51.8	52	52.3
KELBY	35.9*	43.0*	49.7	26.9*	55.5	72.2	53.2	86.5	52.9	41	59.5
AP604 CL	30.1	34.5	38.6	24.4	61.1*	72.7	51.7	94.5*	50.9	56	32.4
WB GUNNISON	33.3	38.2	68.4*	<u>30.2</u>	50.2	71.2	56.6	80.6	53.6	38	54.3
CONAN	34.4	29.7	58.7	23.1	56.3	70.2	45.0	72.1	48.7	62	31.3
CORBIN	32.1	39.0	61.7	21.2	62.4*	78.6	58.2	94.0*	55.9	16	43.9
ONEAL	34.1	37.0	68.3*	22.0	58.3*	79.7*	59.6	83.8	55.3	23	37.0
JEDD	33.9	36.5	71.2*	21.7	53.5	71.6	53.3	94.2*	54.5	31	17.2
CAP 34-1	31.1	30.9	44.6	18.9	56.6	80.2*	51.3	86.4	50.0	58	45.4
CAP197-3	35.1*	39.9*	54.9	27.7*	56.1	81.1*	64.9*	99.1*	57.4	10	52.3
CAP219-3	35.1*	41.3*	69.9*	23.9	64.1*	77.4	61.9*	101.5*	59.4*	3	42.8
CAP400-1	31.5	34.9	48.2	25.4*	53.3	71.5	51.9	92.5*	51.2	53	84.3*
CHOTWHT1	31.8	27.7	69.9*	19.4	59.0*	73.9	55.8	83.3	52.6	44	49.6
THATCHER	27.1	26.7	53.3	16.6	42.5	57.9	46.6	71.6	42.8	64	27.6
FORTUNA	32.7	36.5	50.3	21.6	52.4	62.6	46.1	60.1	45.3	63	59.1
HANKWHT1	32.9	39.8*	59.0	21.1	57.6	74.5	58.7	101.4*	55.6	20	32.8
BUCK PRONTO	32.0	33.9	49.1	26.3*	57.6	68.2	56.2	93.5*	52.1	51	75.0
11FX MN	24.4	39.1*	44.3	19.4	52.2	70.9	53.3	89.0	49.1	61	64.9
MT 1002	34.7*	34.6	61.4	24.0	57.2	79.8*	56.9	100.2*	56.1	14	43.4
MT 1007	36.7*	35.5	68.1	24.2	63.9*	78.2	58.4	99.4*	58.1*	6	30.3
MT 1008	31.5	38.5	<u>84.5</u>	23.9	58.6*	75.9	61.5*	103.9*	59.8*	2	41.1
MT 1016	32.7	33.9	42.7	17.1	50.8	73.6	50.1	95.3*	49.5	60	51.0
MT 1053	35.1*	42.7*	81.1*	25.7*	63.9*	<u>87.2</u>	<u>66.2</u>	97.4*	<u>62.4</u>	1	38.5
MT 1073	36.4*	38.6*	51.3	25.9*	60.9*	80.2*	58.3	90.4*	55.2	25	75.7
MT 1103	31.9	34.8	72.1*	23.6	60.7*	81.0*	54.6	87.0	55.7	18	47.1
MT 1106	26.1	29.9	61.7	19.1	53.7	77.5	53.0	99.8*	52.6	45	54.0
MT 1108	31.1	33.5	69.7*	20.1	51.2	72.2	50.8	80.9	51.2	54	45.8
MT 1111	36.9*	37.6	64.6	23.6	57.8*	74.0	53.1	95.3*	55.4	22	30.2
MT 1112	35.5*	37.9	55.8	20.4	62.7*	76.9	52.1	87.3	53.6	39	48.5
MT 1113	32.8	37.5	73.3*	22.0	58.1*	70.5	51.9	93.5*	55.0	27	49.3
MT 1118	32.6	37.8	70.7*	23.4	56.7	77.1	53.7	99.8*	56.5	12	58.6
MT 1119	<u>38.9</u>	37.0	49.9	21.1	59.6*	75.7	49.7	86.5	52.3	48	41.0
MT 1120	31.9	31.0	62.8	20.3	56.3	76.8	53.2	99.4*	54.0	33	56.8
MT 1133	35.7*	37.1	54.9	23.2	60.2*	82.7*	55.1	90.8*	55.0	28	60.8
MT 1142	30.8	40.7*	72.1*	22.4	56.3	81.6*	61.8*	<u>104.4</u>	58.7*	4	60.2
MT 1146	33.7	38.2	60.9	24.3	60.9*	72.0	52.5	81.3	53.0	40	58.4

(continued)

Table 1 (continued). 2012 yield (bu/ac) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
MT 1154	34.7*	36.3	70.7*	25.5*	58.2*	74.1	55.2	90.7*	55.7	19	46.6
MT 1156	33.6	34.7	64.2	18.8	57.6*	71.2	51.2	100.1*	53.9	34	50.8
MT 1157	37.8*	36.4	63.8	21.1	58.3*	77.4	52.3	92.5	54.9	29	43.1
MT 1164	37.4*	38.6*	59.0	29.7*	<u>64.7</u>	80.3*	56.7	100.1*	58.3*	5	49.8
MT 1166	29.9	42.0*	66.6	21.7	60.6*	79.3	58.4	88.0	55.8	17	59.4
MT 1168	27.2	38.2	60.9	21.2	56.6	71.4	55.1	89.0	52.5	46	50.5
MT 1172	35.3*	43.0*	71.6*	26.1*	62.6*	76.9	60.1	86.4	57.7*	9	77.2
MT 1173	32.2	38.4	66.7	26.5*	56.1	77.7	60.1	91.1*	56.1	15	35.5
MTHW1057	31.0	37.6	51.4	26.8*	54.6	82.0	56.8	89.2	53.7	36	62.6
MTHW1060	28.2	37.6	52.4	18.9	59.5*	69.6	59.6	103.9*	53.7	37	32.6
MTHW1064	38.4*	37.8	49.5	23.7	51.4	71.0	59.9	90.8*	52.8	43	69.3
MTHW1150	30.4	34.7	66.2	23.7	56.3	81.2*	62.3*	95.2*	56.2	13	53.1
MTHW1152	29.6	34.7	60.3	20.2	46.7	73.6	57.0	97.2*	52.4	47	51.2
REEDER	31.4	41.3*	71.2*	24.4	61.5*	74.2	55.4	82.8	55.3	24	63.7
MOTT	30.6	31.4	54.4	21.0	56.6	71.7	52.9	82.3	50.1	57	34.6
MCNEAL	33.2	35.8	67.8	23.9	55.2	74.5	54.4	89.8*	54.3	32	56.4
CHOTEAU	30.5	37.3	56.3	18.9	54.1	75.0	54.2	97.2*	52.9	42	43.1
VIDA	35.4*	40.0*	66.8	24.2	60.0*	79.9*	64.7*	91.9*	57.9*	8	53.4
DUCLAIR	33.9	39.8*	60.7	21.8	61.7*	74.3	55.4	91.5*	54.9	30	57.0
VIDAWHT1	35.3*	40.5*	69.9*	20.7	63.4*	82.3*	61.2*	91.1*	58.1*	7	52.7
VANTAGE	29.8	29.5	53.8	19.5	52.0	70.0	55.1	89.1	49.9	59	41.8
WB ROCKLAND	30.8	33.5	54.4	24.2	57.3	72.7	50.8	86.3	51.2	55	78.2
WB MAYVILLE	32.4	35.3	65.0	23.2	53.8	74.6	57.4	88.7	53.8	35	59.3
WB9879CL	30.4	36.3	64.2	15.2	61.2*	76.5	57.6	100.1*	55.5	21	48.9
site mean	32.6	36.6	60.9	22.6	57.2	75.4	55.7	91.1	54.0		51.1
CV (S/mean)	6.2	8.5	16.3	14.1	7.3	5.9	6.1	9.4	9.2		9.8
F-value	4.54**	4.03**	2.79**	2.45**	2.62**	3.06**	4.37**	2.38**	3.59**		22.36**
LSD (.05)	4.21	5.29	16.35	5.37	7.03	7.56	5.81	14.55	4.86		8.43

Means followed by an asterisk are not significantly different at the .05 level when compared to the highest yielding wheat which is underlined

¹ The nursery at NWARC-Kalispell was severely infested with stripe rust and orange wheat blossom midge, data is shown but not included in average

Table 2. 2012 test weight (lb/bu) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
VOLT	53.9	58.0	57.6	58.0	61.6*	63.9	63.1	61.4	59.7*	8	<u>62.6</u>
BRENNAN	<u>56.2</u>	<u>60.0</u>	59.7	56.4	<u>63.0</u>	63.3	61.7	61.9	60.3*	3	61.1*
SY TYRA	52.1	59.0	<u>60.1</u>	55.6	61.0	63.2	62.0	62.1	59.4	13	54.1
SY605 CL	54.8*	57.5	59.9	57.3	61.9*	63.1	61.9	62.5	59.9*	5	60.3
SY SOREN	51.6	58.0	58.0	53.7	60.9	63.2	60.4	62.3	58.5	36	59.1
KELBY	56.2*	60.0	58.8	58.1	62.8*	63.1	61.8	62.9	<u>60.5</u>	1	60.9*
AP604 CL	52.6	59.0	59.9	56.4	61.9*	63.7	62.1	<u>63.1</u>	59.8*	6	53.8
WB GUNNISON	53.3	58.5	59.1	56.3	59.5	62.7	60.8	60.2	58.8	26	60.4
CONAN	55.9*	58.5	58.6	56.2	61.6*	61.4	60.6	60.4	59.2	16	55.9
CORBIN	51.5	58.0	58.6	55.8	61.8*	62.9	62.4	60.8	59.0	22	57.3
ONEAL	53.4	58.5	57.9	56.8	59.8	62.7	60.9	58.5	58.6	31	56.2
JEDD	54.8*	59.5	59.1	56.8	60.5	62.2	62.5	60.9	59.5	12	52.5
CAP 34-1	53.2	59.0	57.6	55.3	62.1*	63.6	62.6	61.6	59.4	14	55.7
CAP197-3	50.2	56.5	56.2	52.6	58.4	60.9	60.0	58.8	56.7	59	57.8
CAP219-3	53.7	57.5	58.5	55.9	62.7*	62.3	63.6	61.0	59.4	15	56.3
CAP400-1	53.6	57.0	56.2	54.3	59.4	61.3	59.8	60.1	57.7	49	60.6*
CHOTWHT1	53.1	56.5	56.8	55.4	60.5	62.3	62.8	60.3	58.5	37	56.5
THATCHER	50.2	55.0	55.9	54.0	57.4	51.1	59.2	59.0	55.2	64	59.4
FORTUNA	54.7*	58.5	58.3	56.6	60.6	62.1	62.2	60.6	59.2	17	61.5*
HANKWHT1	50.6	54.5	55.9	51.9	57.7	59.8	61.7	59.9	56.5	61	50.8
BUCK PRONTO	53.3	56.0	57.4	55.3	60.0	61.1	61.4	60.9	58.2	42	60.7*
11FX MN	52.8	59.5	59.7	55.7	60.0	63.9	63.0	62.3	59.6*	10	61.1*
MT 1002	52.7	55.0	55.7	54.7	60.0	61.9	61.1	60.4	57.7	50	57.2
MT 1007	54.6*	58.5	58.3	57.0	62.9*	63.7	61.6	62.0	59.8*	7	55.4
MT 1008	52.3	58.0	58.6	56.4	60.7	62.4	61.5	60.1	58.7	29	57.7
MT 1016	51.6	56.0	56.1	54.5	59.1	62.1	60.5	60.1	57.5	54	58.2
MT 1053	52.4	58.0	57.7	55.9	60.6	62.6	62.0	62.3	58.9	25	55.7
MT 1073	55.0*	59.5	58.9	56.9	62.2*	62.7	61.1	61.0	59.7*	9	61.5*
MT 1103	53.4	58.0	57.4	57.0	62.1*	62.6	61.4	61.6	59.2	18	59.2
MT 1106	52.7	56.0	56.9	55.3	60.5	61.1	60.6	60.2	57.9	48	58.7
MT 1108	53.3	56.5	58.2	56.2	61.0	62.0	60.9	60.8	58.6	32	57.3
MT 1111	53.3	57.0	57.2	55.0	60.8	62.5	61.8	61.4	58.6	33	49.8
MT 1112	54.2	57.5	57.5	56.3	61.3	62.0	<u>63.6</u>	61.3	59.2	19	55.4
MT 1113	53.5	56.5	58.2	56.2	61.5*	61.8*	61.2	59.9	58.6	34	56.6
MT 1118	49.9	55.5	56.0	52.0	58.3	60.5	60.9	60.4	56.7	60	56.4
MT 1119	52.9	56.5	56.1	53.9	61.3	61.5	61.6	60.8	58.1	46	54.7
MT 1120	50.8	55.5	56.6	52.9	59.8	60.6	60.0	59.9	57.0	57	58.3
MT 1133	52.4	57.5	57.3	54.0	60.4	62.0	61.8	60.3	58.2	43	59.6
MT 1142	53.5	57.0	57.4	54.7	60.1	62.4	61.5	61.0	58.5	38	59.6
MT 1146	51.5	55.0	56.4	53.3	60.3	61.9	60.1	61.4	57.5	55	59.0

(continued)

Table 2 (continued). 2012 test weight (lb/bu) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
MT 1154	53.5	57.5	57.9	55.4	60.4	62.5	61.7	60.9	58.7	30	57.0
MT 1156	53.4	57.5	58.4	55.7	62.2*	62.3	61.0	62.1	59.1	20	58.2
MT 1157	56.1*	59.5	58.8	56.7	62.6*	63.3	61.7	61.7	60.1*	4	58.2
MT 1164	52.5	56.0	56.5	55.7	60.6	61.2	60.4	58.5	57.7	51	57.0
MT 1166	52.4	56.5	58.3	55.3	60.9	61.2	59.9	60.4	58.1	47	57.9
MT 1168	48.5	54.5	57.1	53.5	59.0	60.7	60.1	61.2	56.8	58	53.3
MT 1172	51.1	57.5	57.1	54.2	59.7	61.3	60.5	60.1	57.7	52	59.0
MT 1173	49.6	56.5	56.4	54.4	57.9	60.7	58.4	57.5	56.4	62	57.5
MTHW1057	52.4	58.5	57.7	55.9	59.3	62.6	61.0	59.9	58.4	39	60.1*
MTHW1060	51.7	56.5	59.2	55.3	62.5*	62.3	62.9	62.5	59.1	21	53.1
MTHW1064	55.5*	58.5	58.9	57.5	61.3	62.0	62.3	60.7	59.6*	11	59.4
MTHW1150	53.5	58.0	58.6	57.0	60.6	61.7	61.2	59.9	58.8	27	59.7
MTHW1152	49.2	55.5	55.7	50.8	56.5	60.0	60.3	60.0	56.0	63	55.4
REEDER	52.4	58.5	58.7	55.8	61.0	62.2	61.7	61.5	59.0	23	60.9*
MOTT	52.0	56.5	58.2	54.7	60.5	61.7	62.7	60.5	58.3	41	58.9
MCNEAL	52.2	56.0	56.4	55.0	58.3	61.7	60.6	60.8	57.6	53	58.7
CHOTEAU	51.8	57.5	56.9	54.3	61.1	61.5	61.8	60.6	58.2	44	57.1
VIDA	51.9	57.0	57.9	55.7	60.1	62.1	62.1	58.9	58.2	45	58.2
DUCLAIR	51.7	57.0	56.6	53.4	59.9	61.0	59.8	60.1	57.4	56	56.9
VIDAWHT1	52.9	58.5	58.2	55.8	61.0	62.6	61.8	59.7	58.8	28	58.5
VANTAGE	56.1*	59.0	60.0	<u>58.3</u>	62.7*	64.2	61.9	61.8	60.5*	2	61.4*
WB ROCKLAND	52.8	56.5	57.2	53.9	62.0*	62.8	61.9	60.5	58.4	40	59.2
WB MAYVILLE	53.3	58.0	59.7	54.9	61.8*	62.0	61.0	61.1	59.0	24	60.2
WB9879CL	52.2	57.5	57.2	55.0	61.7*	62.4	61.0	61.5	58.6	35	57.8
site mean	52.8	57.4	57.8	55.3	60.7	62.0	61.4	60.8	58.5		57.8
CV (S/mean)	1.5	1 rep	1 rep	1 rep	1.6	3.3	1 rep	1 rep	1.6		2.2
F-value	7.92**				6.2**	1.93**			11.22**		12.39**
LSD (.05)	1.69				1.58	3.37			0.91		2.11

Means followed by an asterisk are not significantly different at the .05 level when compared to the highest yielding wheat which is underlined

¹ The nursery at NWARC-Kalispell was severely infested with stripe rust and orange wheat blossom midge, data is shown but not included in average

Table 3. 2012 grain protein content (percent) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	Kalispell rain fed	average ¹	rank
VOLT	17.7	14.9	15.7	16.6	12.7	11.9	13.3	14.1	14.0	14.5	53
BRENNAN	17.1	14.2	16.3	17.4	14.1	13.5	14.8	15.2	13.6	15.1	19
SY TYRA	17.1	13.4	14.8	17.6	12.8	11.8	13.3	13.2	13.7	14.2	59
SY605 CL	17.9	16.1	16.3	18.8	13.2	13.0	15.4	16.3	14.4	15.7	5
SY SOREN	17.9	14.4	16.0	19.0	13.5	12.9	15.1	15.0	14.1	15.3	11
KELBY	17.2	14.0	17.1	16.4	14.0	13.5	15.0	14.4	13.7	15.0	28
AP604 CL	18.2	14.6	16.3	17.4	12.8	12.5	15.4	15.6	13.2	15.1	20
WB GUNNISON	17.0	13.9	14.8	16.1	13.0	12.1	13.6	13.4	13.0	14.1	61
CONAN	17.1	14.7	16.3	17.4	13.6	13.3	14.5	14.3	14.4	15.1	21
CORBIN	18.5	14.3	15.8	18.3	12.3	12.5	13.9	15.4	14.6	15.1	22
ONEAL	18.0	14.1	15.6	18.4	12.6	12.0	14.8	14.6	14.2	14.9	34
JEDD	17.1	13.5	15.6	18.2	13.1	11.7	14.2	13.9	14.2	14.6	48
CAP 34-1	16.8	13.7	16.4	17.4	13.3	11.5	14.9	13.6	14.1	14.6	49
CAP197-3	17.1	13.2	15.0	16.4	12.7	12.6	13.7	15.2	13.0	14.3	58
CAP219-3	18.3	14.5	15.3	15.8	11.6	13.8	13.9	16.1	13.2	14.7	44
CAP400-1	16.5	14.3	<u>17.3</u>	<u>19.9</u>	13.6	12.6	15.9	14.4	<u>16.2</u>	15.6	6
CHOTWHT1	17.7	15.0	15.8	17.7	13.2	12.3	14.2	<u>16.3</u>	15.0	15.2	16
THATCHER	17.7	14.6	15.9	17.5	14.4	12.7	14.7	14.7	13.6	15.1	23
FORTUNA	16.7	13.4	15.9	17.9	14.1	12.6	15.3	14.8	13.2	14.9	35
HANKWHT1	17.2	14.7	15.9	18.4	13.4	12.0	13.9	13.8	14.3	14.8	41
BUCK PRONTO	17.9	15.5	17.0	18.6	13.9	13.3	14.5	15.4	14.6	15.6	7
11FX MN	17.0	13.6	16.7	17.6	13.5	12.8	15.1	14.3	13.1	14.9	36
MT 1002	16.7	14.9	16.0	17.4	12.7	12.2	14.1	14.0	14.2	14.7	45
MT 1007	16.8	14.4	15.7	17.5	12.5	12.7	14.5	14.8	14.6	14.8	42
MT 1008	17.1	12.8	14.3	17.0	12.4	12.0	14.2	13.2	14.4	14.2	60
MT 1016	17.6	14.4	16.2	17.7	13.0	13.0	14.9	14.2	13.4	14.9	37
MT 1053	16.7	12.8	14.5	17.0	12.2	11.5	13.3	14.2	14.8	14.1	62
MT 1073	16.4	13.1	15.8	16.9	12.8	12.5	14.2	14.2	14.4	14.5	54
MT 1103	17.1	14.4	15.6	18.4	12.7	12.2	15.1	15.6	14.3	15.0	29
MT 1106	16.9	14.6	15.8	17.8	13.0	12.7	14.5	14.0	14.5	14.9	38
MT 1108	17.4	15.9	15.7	17.8	13.4	13.2	15.3	15.8	13.9	15.4	8
MT 1111	16.6	14.6	15.8	16.7	13.3	12.9	14.4	14.0	14.1	14.7	46
MT 1112	15.9	14.0	16.2	16.8	12.4	12.8	14.2	15.0	13.8	14.6	50
MT 1113	16.2	14.9	15.2	17.0	12.5	12.6	14.3	14.2	13.0	14.4	56
MT 1118	17.3	13.9	16.1	18.0	12.7	12.5	15.0	14.5	14.8	15.0	30
MT 1119	17.2	14.0	16.9	17.5	12.9	12.8	15.0	15.2	14.6	15.1	24
MT 1120	17.4	14.7	15.9	18.4	13.4	12.8	14.7	14.1	14.4	15.1	25
MT 1133	17.2	14.2	16.3	18.3	12.6	13.3	14.9	15.0	15.4	15.2	17
MT 1142	17.3	14.6	16.4	18.6	13.0	13.0	14.9	14.9	15.5	15.4	9
MT 1146	18.1	16.2	17.0	18.6	13.7	13.7	15.7	16.0	15.1	16.0*	2

(continued)

Table 3 (continued). 2012 protein content (percent) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	Kalispell rain fed	average ¹	rank
MT 1154	17.1	14.4	15.2	17.6	13.2	13.1	14.9	14.4	13.2	14.8	43
MT 1156	18.3	15.5	16.7	18.9	12.6	13.6	15.7	15.3	15.2	15.8	4
MT 1157	17.5	15.3	16.4	18.4	13.4	13.0	15.3	14.9	13.9	15.3	12
MT 1164	17.8	14.7	16.5	17.6	12.5	12.6	14.3	14.3	15.1	15.0	31
MT 1166	17.1	13.3	14.2	17.8	12.0	12.1	14.0	14.7	14.3	14.4	57
MT 1168	18.6	14.3	15.7	18.2	13.1	12.6	15.0	15.1	15.4	15.3	13
MT 1172	16.0	12.9	15.2	17.6	12.0	12.8	14.3	15.5	15.1	14.6	51
MT 1173	17.6	12.9	15.4	18.3	12.7	12.0	14.5	14.7	14.3	14.7	47
MTHW1057	17.3	13.3	14.2	17.5	13.0	11.6	12.9	12.9	13.6	14.0	64
MTHW1060	17.4	15.4	15.8	18.3	12.3	12.2	13.8	13.8	15.9	15.0	32
MTHW1064	17.0	14.1	15.2	17.6	13.4	12.4	14.3	13.2	13.1	14.5	55
MTHW1150	18.1	14.4	15.5	16.9	13.5	12.6	14.4	14.6	14.1	14.9	39
MTHW1152	17.9	14.3	16.1	18.7	14.4	12.8	14.7	14.7	13.9	15.3	14
REEDER	17.5	13.2	16.0	17.7	13.1	13.1	15.0	16.0	14.9	15.2	18
MOTT	18.4	15.7	15.6	19.1	13.9	13.2	15.0	14.5	13.5	15.4	10
MCNEAL	16.9	14.4	16.2	18.8	13.0	12.5	14.8	15.1	13.8	15.1	26
CHOTEAU	17.5	14.1	16.1	17.9	13.5	12.9	15.0	14.3	14.4	15.1	27
VIDA	17.1	13.6	14.8	17.7	12.4	12.3	14.1	14.3	14.9	14.6	52
DUCLAIR	18.0	13.3	15.7	18.1	12.8	12.6	14.1	14.5	15.2	14.9	40
VIDAWHT1	16.3	12.3	14.5	18.2	11.3	11.9	13.8	14.1	14.8	14.1	63
VANTAGE	<u>19.2</u>	<u>16.7</u>	17.1	19.7	<u>15.1</u>	13.3	15.8	15.9	15.9	<u>16.5</u>	1
WB ROCKLAND	18.1	15.8	16.1	18.6	13.2	<u>14.1</u>	<u>16.1</u>	15.7	16.1	16.0	3
WB MAYVILLE	17.6	14.8	16.4	17.4	13.5	13.1	14.6	15.3	14.7	15.3	15
WB9879CL	17.4	14.6	15.8	17.7	13.2	12.9	14.9	14.2	14.3	15.0	33
site mean	17.4	14.3	15.8	17.8	13.1	12.7	14.6	14.7	14.3	15.0	
CV (S/mean)	1 REP	1 REP	1 REP	1 REP	1 REP	1 REP	1 REP	1 REP	1 REP	3.90	
F-value										6.4**	
LSD (.05)										0.54	

Means followed by an asterisk are not significantly different at the .05 level when compared to the highest yielding wheat which is underlined

¹ The nursery at NWARC-Kalispell was severely infested with stripe rust and orange wheat blossom midge, data is shown but not included in average

Table 4. 2012 heading date (days from January 1) summary for the advanced spring wheat nursery grown across Montana. 178= June 27

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
VOLT	180	170	172	178	163	182	188	191	178.0	61	184
BRENNAN	176	165	<u>169</u>	178	162*	177*	183	185	174.4*	10	178*
SY TYRA	179	168	171	178	165	181	185	186	176.6	48	181
SY605 CL	174*	<u>165</u>	170*	<u>176</u>	<u>161</u>	178	183	184	173.7*	2	177*
SY SOREN	177	168	170*	179	162*	180	183	184	175.4	28	182
KELBY	177	165*	170*	176*	162*	177*	182	184	174.0*	5	178*
AP604 CL	175	165*	169*	177*	162*	179	182	<u>183</u>	174.1*	6	179
WB GUNNISON	176	168	171	178	163	180	184	186	175.8	34	180
CONAN	176	168	171	177	163	180	184	185	175.4	29	180
CORBIN	176	166*	170*	177*	162*	179	184	185	174.9	19	180
ONEAL	177	169	171	179	164	180	185	189	176.8	51	183
JEDD	176	166*	171	177*	163	180	183	186	175.1	24	179
CAP 34-1	176	167	171	177*	164	180	184	185	175.4	30	181
CAP197-3	177	169	171	179	165	181	184	186	176.4	45	184
CAP219-3	176	166*	169*	179	163	180	184	185	175.3	25	181
CAP400-1	179	170	170*	179	164	180	185	188	177.0	56	184
CHOTWHT1	175	166*	170*	178	163	178*	182	184	174.3*	9	179
THATCHER	180	171	171	181	165	183	187	189	178.3	62	187
FORTUNA	176	167	171	179	163	180	185	186	175.9	37	183
HANKWHT1	175	166*	170*	177*	162*	179	183	185	174.6	14	179
BUCK PRONTO	173	166*	170*	176*	163	177*	182	185	174.1*	7	177*
11FX MN	175	165*	170*	178	163	179	184	186	174.9	20	178*
MT 1002	179	168	171	178	164	181	185	187	176.7	50	184
MT 1007	176	168	170*	177*	164	180	185	185	175.7	33	182
MT 1008	179	169	172	177*	164	181	186	187	176.8	52	185
MT 1016	178	169	171	178	164	180	185	187	176.6	49	183
MT 1053	177	168	171	178	163	180	184	185	175.8	35	182
MT 1073	176	166*	170*	177*	163	179	184	186	175.0	22	180
MT 1103	180	170	171	177	164	182	185	186	176.9	54	185
MT 1106	177	169	171	179	164	181	185	187	176.5	46	184
MT 1108	176	167	169*	177*	163	179	183	184	174.8	17	181
MT 1111	175	166*	170*	178	163	178*	182	184	174.5	12	178*
MT 1112	175	166*	170*	178	162*	179	183	184	174.5	13	179
MT 1113	175	166*	169*	176*	164	177*	181	184	174.1*	8	178*
MT 1118	176	167	171	177*	163	178*	183	185	174.9	21	181
MT 1119	173.*	165*	170*	176*	162*	177*	182	184	173.7*	3	180
MT 1120	177	167	170*	177	163	180	184	186	175.5	31	182
MT 1133	178	168	170*	178	163	180	185	186	176.1	42	184
MT 1142	178	167	171	179	163	181	184	186	176.1	43	181
MT 1146	177	168	171	178	163	181	184	185	175.9	38	183

(continued)

Table 4 (continued). 2012 heading date (days from January 1) summary for the advanced spring wheat nursery grown across Montana. 178= June 27

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
MT 1154	179	168	171	179	165	181	185	187	176.9	55	182
MT 1156	175	166*	169*	178	162*	179	183	185	174.7	15	180
MT 1157	176	167	170*	177	163	180	183	185	175.0	23	182
MT 1164	176	167	171	177*	163	180	183	185	175.3	26	181
MT 1166	176	165*	170*	178	162*	180	183	184	174.7	16	182
MT 1168	177	167	170*	176*	163	180	184	186	175.3	27	180
MT 1172	179	171	171	179	163	182	185	186	177.0	57	184
MT 1173	180	172	172	180	164	184	187	188	178.4	63	186
MTHW1057	177	170	172	179	165	182	186	189	177.4	60	184
MTHW1060	173*	165*	170*	178	163	177*	181	184	173.9*	4	177*
MTHW1064	176	169	171	178	163	180	184	187	176.0	40	181
MTHW1150	179	169	172	179	164	180	186	189	177.2	58	185
MTHW1152	<u>172</u>	165*	170*	177*	162*	177*	<u>181</u>	184	<u>173.5</u>	1	177*
REEDER	177	168	171	179	163	180	184	186	176.0	41	182
MOTT	180	168	171	178	166	181	186	188	177.2	59	185
MCNEAL	178	168	172	178	164	180	185	187	176.5	47	184
CHOTEAU	178	167	171	178	162*	180	184	186	175.8	36	183
VIDA	177	168	171	179	163	181	185	187	176.3	44	183
DUCLAIR	176	166*	170*	176*	163	178*	182	184	174.4*	11	180
VIDAWHT1	177	168	171	178	161*	180	185	185	175.6	32	183
VANTAGE	180	170	171	183	165	184	187	190	178.8	64	187
WB ROCKLAND	177	170	172	178	162*	179	186	191	176.8	53	178*
WB MAYVILLE	176	166*	170*	178	162*	179	183	185	174.8	18	180
WB9879CL	177	168	171	178	163	180	184	186	175.9	39	181
site mean	177	167	171	178	163	180	184	186	175.7		181
CV (S/mean)	0.4	0.5	0.4	1.1	0.5	0.4	1 rep	1 rep	0.5		0.5
F-value	11.6**	10.66**	1.97**	26.4**	4.06**	16.94**			16.16**		18.48**
LSD (.05)	1.52	1.50	1.56	1.01	1.41	4.05			0.85		1.63

Means followed by an asterisk are not significantly different at the .05 level when compared to the highest yielding wheat which is underlined

¹ The nursery at NWARC-Kalispell was severely infested with stripe rust and orange wheat blossom midge, data is shown but not included in average

Table 5. 2012 plant height (inches) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
VOLT	29.8	26.1	25.5	22.5	29.8	30.0	27.7	33.5	28.1	52	34.5
BRENNAN	27.4	26.0	29.9	20.4	29.3	27.9	24.7	30.9	27.1	57	32.2
SY TYRA	25.5	24.1	28.1	20.4	29.5	27.0	25.8	31.1	26.4	61	30.9
SY605 CL	31.3	28.6	31.5	23.1	32.9	34.2	29.2	35.0	30.7	8	37.4
SY SOREN	27.3	26.8	26.2	21.0	28.7	29.3	25.0	28.9	26.6	60	33.6
KELBY	28.2	26.6	26.2	21.2	28.3	28.7	23.9	31.4	26.8	59	32.3
AP604 CL	30.5	29.0	24.3	23.5	32.8	32.1	27.7	34.7	29.3	27	35.7
WB GUNNISON	28.7	27.9	30.4	23.7	28.9	30.2	25.1	32.6	28.5	44	33.8
CONAN	27.7	25.9	29.8	23.0	31.3	31.3	26.4	33.5	28.6	41	35.1
CORBIN	30.6	27.5	28.0	22.6	33.2	30.4	28.2	34.3	29.3	28	35.4
ONEAL	29.4	29.1	31.7	22.4	32.6	32.8	29.7	36.3	30.5	11	33.4
JEDD	24.9	25.3	25.4	21.2	28.0	26.9	23.8	28.6	25.5	63	26.5
CAP 34-1	26.7	25.7	27.2	21.3	30.1	29.6	24.8	31.5	27.1	58	31.3
CAP197-3	32.1	29.3	28.8	23.1	33.4	33.3	32.2	37.9	31.3	5	34.8
CAP219-3	28.2	28.1	30.8	22.0	32.7	31.9	29.7	35.5	29.9	16	31.9
CAP400-1	26.6	28.7	28.4	23.2	32.9	30.9	29.6	36.2	29.6	22	37.6
CHOTWHT1	30.1	27.6	31.0	23.2	33.7	30.6	28.7	34.7	29.9	17	33.5
THATCHER	<u>36.4</u>	<u>35.5</u>	<u>36.5</u>	<u>27.0</u>	<u>40.7</u>	<u>41.5</u>	<u>36.8</u>	<u>45.8</u>	<u>37.5</u>	1	42.6*
FORTUNA	34.6*	34.0*	33.0	24.1*	38.8*	37.6	35.2	41.5	34.9	2	<u>42.8</u>
HANKWHT1	26.8	27.2	28.1	22.1	28.9	27.8	24.7	31.7	27.2	56	30.9
BUCK PRONTO	27.8	28.1	25.3	23.1	30.6	30.1	26.6	33.3	28.1	53	34.3
11FX MN	28.4	26.8	27.8	22.0	29.2	29.1	26.7	31.9	27.7	55	34.4
MT 1002	30.8	28.2	26.6	21.7	32.9	31.3	29.4	36.9	29.7	21	34.7
MT 1007	27.2	26.6	27.2	22.7	30.8	30.6	27.6	33.4	28.3	49	31.5
MT 1008	29.8	27.2	30.8	21.0	32.1	30.4	28.9	36.9	29.6	23	33.0
MT 1016	30.1	27.5	26.5	22.0	29.6	29.9	27.6	35.2	28.5	45	37.5
MT 1053	26.4	26.4	31.0	20.0	32.1	29.3	27.7	33.1	28.3	50	33.6
MT 1073	29.0	27.5	26.6	23.0	30.4	30.1	28.0	34.4	28.6	42	33.4
MT 1103	28.7	25.4	31.9	22.6	32.6	30.9	27.9	35.8	29.5	25	33.6
MT 1106	27.0	26.3	30.9	18.6	32.4	31.2	29.1	33.8	28.6	43	34.3
MT 1108	27.4	25.4	30.3	22.6	30.4	29.5	27.1	33.1	28.2	51	30.0
MT 1111	28.4	27.2	29.0	21.9	30.8	29.9	26.0	34.9	28.5	46	32.5
MT 1112	28.8	27.1	25.8	20.8	31.6	30.5	27.3	35.1	28.4	47	35.3
MT 1113	28.2	26.6	32.8	21.6	31.4	30.0	27.2	35.3	29.1	32	33.4
MT 1118	26.9	26.6	30.7	24.4	29.8	30.3	26.7	33.9	28.7	36	32.7
MT 1119	27.9	26.3	25.9	21.8	31.8	29.9	26.6	33.4	27.9	54	34.5
MT 1120	27.9	28.3	28.3	21.8	33.1	32.3	28.0	36.8	29.6	24	34.9
MT 1133	30.1	28.2	26.6	22.3	31.5	30.9	27.9	35.5	29.1	33	33.6
MT 1142	29.0	28.7	30.6	23.8	32.1	31.0	30.6	37.4	30.4	12	37.7
MT 1146	28.5	28.3	32.7	21.5	33.7	33.8	28.7	36.0	30.4	13	36.1

(continued)

Table 5 (continued). 2012 plant height (inches) summary for the advanced spring wheat nursery grown across Montana.

ID	Havre rain fed	Sidney rain fed	Sidney irrigated	Moccasin rain fed	Huntley rain fed	Conrad rain fed	Bozeman rain fed	Bozeman irrigated	average ¹	rank	Kalispell rain fed
MT 1154	30.3	27.8	30.5	23.7	34.4	32.0	29.6	36.9	30.6	9	35.1
MT 1156	28.7	27.4	33.2	21.6	31.1	31.2	27.9	33.8	29.4	26	31.7
MT 1157	29.2	26.6	30.4	22.2	31.2	31.8	29.4	33.9	29.3	29	33.3
MT 1164	28.6	27.5	28.8	22.7	30.8	30.9	27.0	33.7	28.7	37	33.3
MT 1166	31.8	30.0	29.9	22.2	35.9	34.9	32.3	40.0	32.1	3	38.1
MT 1168	27.7	26.8	29.2	22.6	31.7	30.0	27.9	33.5	28.7	38	33.4
MT 1172	30.3	26.4	29.8	22.5	31.9	30.8	28.4	33.6	29.2	30	36.3
MT 1173	29.3	28.3	30.4	22.5	33.1	35.0	31.0	38.1	31.0	7	36.5
MTHW1057	29.1	27.8	27.5	23.0	32.5	30.7	27.9	34.6	29.1	34	36.5
MTHW1060	27.2	28.1	29.0	23.5	31.9	29.2	28.1	33.5	28.8	35	32.0
MTHW1064	31.0	28.6	30.1	23.1	29.3	31.0	29.5	35.9	29.8	19	36.7
MTHW1150	30.4	29.3	30.6	24.1*	34.6	32.2	30.7	38.2	31.3	6	38.5
MTHW1152	28.7	27.6	26.1	23.7	31.0	29.9	27.7	32.6	28.4	48	33.3
REEDER	29.3	28.1	30.8	20.5	33.5	33.6	29.7	37.7	30.4	14	39.6
MOTT	31.1	29.6	30.5	23.2	36.2	34.4	30.1	39.4	31.8	4	35.9
MCNEAL	30.4	29.2	31.1	22.5	33.4	31.8	30.1	36.7	30.6	10	37.7
CHOTEAU	28.7	27.0	30.1	20.2	30.8	30.3	27.7	34.9	28.7	39	32.1
VIDA	30.2	28.9	27.8	22.4	31.2	32.4	29.9	36.3	29.9	18	35.1
DUCLAIR	31.3	28.3	28.3	21.5	32.3	31.3	29.9	35.3	29.8	20	34.5
VIDAWHT1	29.5	28.4	31.0	21.1	33.7	33.2	28.4	34.7	30.0	15	35.5
VANTAGE	29.4	25.5	27.6	21.1	31.8	30.5	27.5	35.9	28.7	40	34.4
WB ROCKLAND	27.4	24.0	24.3	19.8	25.3	25.4	24.6	28.9	24.9	64	28.9
WB MAYVILLE	25.9	24.2	27.5	22.3	29.5	28.1	24.7	28.7	26.4	62	31.6
WB9879CL	28.1	28.2	29.7	21.3	31.4	31.2	28.8	35.1	29.2	31	32.7
site mean	29.0	27.6	29.1	22.2	31.8	31.0	28.2	34.7	29.2		34.4
CV (S/mean)	6.0	4.3	6.3	8.3	4.2	3.6	3.0	3.4	4.4		4.1
F-value	2.46**	6.66**	4.93**	1.44*	9.08**	13.17**	21.7**	16.48**	17.84**		11.36**
LSD (.05)	3.52	2.02	3.00	3.04	2.21	1.89	1.42	2.01	1.26		2.36

Means followed by an asterisk are not significantly different at the .05 level when compared to the highest yielding wheat which is underlined

¹ The nursery at NWARC-Kalispell was severely infested with stripe rust and orange wheat blossom midge, data is shown but not included in average

Table 6. 2012 over-all summary for the advanced spring wheat nursery grown across Montana.

Line or variety	Grain yield (bu/ac)		Test weight (lb/bu)		Heading date (178= June 27)		Plant height (in)		Grain protein (%)	
	AVE	RANK	AVE	RANK	AVE	RANK	AVE	RANK	AVE	RANK
VOLT	52.1	50	59.7*	8	178.0	61	28.1	52	14.5	53
BRENNAN	56.7	11	60.3*	3	174.4*	10	27.1	57	15.1	19
SY TYRA	55.0	26	59.4	13	176.6	48	26.4	61	14.2	59
SY605 CL	52.2	49	59.9*	5	173.7*	2	30.7	8	15.7	5
SY SOREN	51.8	52	58.5	36	175.4	28	26.6	60	15.3	11
KELBY	52.9	41	<u>60.5</u>	1	174.0*	5	26.8	59	15.0	28
AP604 CL	50.9	56	59.8*	6	174.1*	6	29.3	27	15.1	20
WB GUNNISON	53.6	38	58.8	26	175.8	34	28.5	44	14.1	61
CONAN	48.7	62	59.2	16	175.4	29	28.6	41	15.1	21
CORBIN	55.9	16	59.0	22	174.9	19	29.3	28	15.1	22
ONEAL	55.3	23	58.6	31	176.8	51	30.5	11	14.9	34
JEDD	54.5	31	59.5	12	175.1	24	25.5	63	14.6	48
CAP 34-1	50.0	58	59.4	14	175.4	30	27.1	58	14.6	49
CAP197-3	57.4	10	56.7	59	176.4	45	31.3	5	14.3	58
CAP219-3	59.4*	3	59.4	15	175.3	25	29.9	16	14.7	44
CAP400-1	51.2	53	57.7	49	177.0	56	29.6	22	15.6	6
CHOTWHT1	52.6	44	58.5	37	174.3*	9	29.9	17	15.2	16
THATCHER	42.8	64	55.2	64	178.3	62	<u>37.5</u>	1	15.1	23
FORTUNA	45.3	63	59.2	17	175.9	37	34.9	2	14.9	35
HANKWHT1	55.6	20	56.5	61	174.6	14	27.2	56	14.8	41
BUCK PRONTO	52.1	51	58.2	42	174.1*	7	28.1	53	15.6	7
11FX MN	49.1	61	59.6*	10	174.9	20	27.7	55	14.9	36
MT 1002	56.1	14	57.7	50	176.7	50	29.7	21	14.7	45
MT 1007	58.1*	6	59.8*	7	175.7	33	28.3	49	14.8	42
MT 1008	59.8*	2	58.7	29	176.8	52	29.6	23	14.2	60
MT 1016	49.5	60	57.5	54	176.6	49	28.5	45	14.9	37
MT 1053	<u>62.4</u>	1	58.9	25	175.8	35	28.3	50	14.1	62
MT 1073	55.2	25	59.7*	9	175.0	22	28.6	42	14.5	54
MT 1103	55.7	18	59.2	18	176.9	54	29.5	25	15.0	29
MT 1106	52.6	45	57.9	48	176.5	46	28.6	43	14.9	38
MT 1108	51.2	54	58.6	32	174.8	17	28.2	51	15.4	8
MT 1111	55.4	22	58.6	33	174.5	12	28.5	46	14.7	46
MT 1112	53.6	39	59.2	19	174.5	13	28.4	47	14.6	50
MT 1113	55.0	27	58.6	34	174.1*	8	29.1	32	14.4	56
MT 1118	56.5	12	56.7	60	174.9	21	28.7	36	15.0	30
MT 1119	52.3	48	58.1	46	173.7*	3	27.9	54	15.1	24
MT 1120	54.0	33	57.0	57	175.5	31	29.6	24	15.1	25
MT 1133	55.0	28	58.2	43	176.1	42	29.1	33	15.2	17
MT 1142	58.7*	4	58.5	38	176.1	43	30.4	12	15.4	9
MT 1146	53.0	40	57.5	55	175.9	38	30.4	13	16.0*	2

(continued)

Table 6 (continued). 2012 over-all summary for the advanced spring wheat nursery grown across Montana.

Line or variety	Grain yield (bu/ac)		Test weight (lb/bu)		Heading date (178= June 27)		Plant height (in)		Grain protein (%)	
	AVE	RANK	AVE	RANK	AVE	RANK	AVE	RANK	AVE	RANK
MT 1154	55.7	19	58.7	30	176.9	55	30.6	9	14.8	43
MT 1156	53.9	34	59.1	20	174.7	15	29.4	26	15.8	4
MT 1157	54.9	29	60.1*	4	175.0	23	29.3	29	15.3	12
MT 1164	58.3*	5	57.7	51	175.3	26	28.7	37	15.0	31
MT 1166	55.8	17	58.1	47	174.7	16	32.1	3	14.4	57
MT 1168	52.5	46	56.8	58	175.3	27	28.7	38	15.3	13
MT 1172	57.7*	9	57.7	52	177.0	57	29.2	30	14.6	51
MT 1173	56.1	15	56.4	62	178.4	63	31.0	7	14.7	47
MTHW1057	53.7	36	58.4	39	177.4	60	29.1	34	14.0	64
MTHW1060	53.7	37	59.1	21	173.9*	4	28.8	35	15.0	32
MTHW1064	52.8	43	59.6*	11	176.0	40	29.8	19	14.5	55
MTHW1150	56.2	13	58.8	27	177.2	58	31.3	6	14.9	39
MTHW1152	52.4	47	56.0	63	<u>173.5</u>	1	28.4	48	15.3	14
REEDER	55.3	24	59.0	23	176.0	41	30.4	14	15.2	18
MOTT	50.1	57	58.3	41	177.2	59	31.8	4	15.4	10
MCNEAL	54.3	32	57.6	53	176.5	47	30.6	10	15.1	26
CHOTEAU	52.9	42	58.2	44	175.8	36	28.7	39	15.1	27
VIDA	57.9*	8	58.2	45	176.3	44	29.9	18	14.6	52
DUCLAIR	54.9	30	57.4	56	174.4*	11	29.8	20	14.9	40
VIDAWHT1	58.1*	7	58.8	28	175.6	32	30.0	15	14.1	63
VANTAGE	49.9	59	60.5*	2	178.8	64	28.7	40	<u>16.5</u>	1
WB ROCKLAND	51.2	55	58.4	40	176.8	53	24.9	64	16.0	3
WB MAYVILLE	53.8	35	59.0	24	174.8	18	26.4	62	15.3	15
WB9879CL	55.5	21	58.6	35	175.9	39	29.2	31	15.0	33
SITE MEAN	54.0		58.5		175.7		29.2		15.0	
C.V. (S/MEAN %)	9.2		1.6		0.5		4.4		3.90	
F-value	3.59**		11.22**		16.16**		17.84**		6.4**	
LSD (.05)	4.86		0.91		0.85		1.26		0.54	

Means followed by an asterisk are not significantly different at the .05 level when compared to the highest yielding wheat which is underlined

¹ the overall means do not include data from the 2012 Kalispell nursery