

PROJECT TITLE: Statewide Spring Wheat Variety Performance - 2004

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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 2004 Advanced Spring Wheat yield trial was grown at three irrigated and seven rain fed sites across Montana. Irrigated sites were at Sidney, Huntley, and Bozeman. Kalispell is usually considered a high-rainfall site. Replicated multiple-row plots were established at all locations using standard research techniques. Summaries of yield, test weight, protein content, heading date, and plant height at maturity are shown in Tables 1, 2, 3, 4, and 5, respectively.

Highest yielding lines on a statewide basis were MT0260 and BZ999592 (Table 1). Highest yielding varieties at individual sites were BZ999592 at **Havre**, BZ996472 at **Conrad**, BZ999592 at **Moccasin**, MT0260 at **Huntley dryland**, MTHW0204 at **Huntley irrigated**, MT0260 at **Sidney dryland**, MT0255 at **Sidney irrigated**, MT0245 at **Bozeman dryland**, MT0339 at **Bozeman irrigated**, and MTHW0357 at **Kalispell**.

Lines with the highest test weights statewide were MT0306 and BZ996472 (Table 2). Lines with the highest protein contents statewide were AgriPro6 and Alsen (Table 3). Earliest heading lines were **MTHW0202** and Explorer, while latest heading lines were Newana and Thatcher (Table 4). Shortest lines were Norpro and Westbred 926, while tallest lines were Thatcher and Fortuna (Table 5).

SUMMARY: Highest yielding lines on a statewide basis were MT0260 and BZ999592 (Table 1). Highest yielding varieties at individual sites were BZ999592 at Havre, BZ996472 at Conrad, BZ999592 at Moccasin, MT0260 at Huntley dryland, MTHW0204 at Huntley irrigated, MT0260 at Sidney dryland, MT0255 at Sidney irrigated, MT0245 at Bozeman dryland, MT0339 at Bozeman irrigated, and MTHW0357 at Kalispell.

FUTURE PLANS: New and existing varieties and experimental lines will continue to be evaluated at Bozeman and the Research Centers in Montana, so that breeders can release improved varieties and producers can have information on varieties best adapted to conditions in their areas.

Table 1. 2004 yield (bu/ac) summary for the advanced spring wheat nursery grown across Montana.

PEDIGREE		Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
Agripro1	NORPRO	39.11	59.89	32.22	33.51	70.6*	79.95	118.54	94.44	92.6*	104.3*	72.5	21	1.07	0.99
Agripro2	KNUDSON	38.56	60.22	36.87	32.91	68.31	79.26	115.24	93.32	84.55	97.67	70.7	37	0.99	1.00
Agripro3	FREYR	40.38	61.99	39.8*	33.29	64.59	82.29	115.42	101.9*	83.00	100.93	72.4	22	1.00	0.98
Agripro4	01II 27-2-2 CL	40.12	54.28	34.66	33.03	63.04	81.43	108.00	96.46	80.04	85.58	67.7	58	0.92	0.98
Agripro5	01II 27-20-1 CL	43.21	54.17	32.45	34.00	61.83	76.94	118.34	93.96	84.91	94.01	69.4	45	1.00	0.99
Agripro6	01II 27-24-1 CL	38.19	50.89	30.65	33.57	63.63	76.80	108.76	89.14	79.06	90.23	66.1	63	0.94	0.99
ALSEN	ALSEN	41.77	65.06	36.17	30.35	66.70	79.27	101.91	90.50	82.87	92.59	68.7	49	0.87	0.97
BZ992322	HANK	44.99	59.95	41.4*	29.51	66.56	87.6*	123.28	103.2*	89.0*	115.3*	76.1*	5	1.12	0.98
BZ992588	Conan	43.31	58.03	39.2*	28.25	59.12	76.14	113.40	98.96	81.69	89.90	68.8	48	0.96	0.98
BZ996434	BORDER/CONAN	48.7*	62.42	35.29	17.86	62.26	70.56	94.39	89.59	91.9*	96.31	66.9	61	0.89	0.89
BZ996472	BZ992-634/GOLDEN86	52.6*	69.68	36.83	22.34	64.17	72.56	124.66	88.61	87.2*	100.78	71.9	27	1.03	0.95
BZ999592	MCNEAL/906R	55.02	62.5*	44.59	35.18	71.6*	87.6*	127.9*	104.6*	91.4*	109.9*	79.1*	2	1.05	0.99
CI 10003	THATCHER	36.12	44.61	28.30	34.04	55.76	71.11	93.59	81.41	64.33	71.89	58.1	64	0.75	0.95
CI 13596	FORTUNA	42.01	58.04	37.06	31.73	60.34	66.43	108.89	100.6*	81.36	100.64	68.7	50	0.96	0.96
CI 17430	NEWANA	35.22	55.25	33.46	37.3*	70.9*	79.52	117.49	103.4*	78.93	98.77	71.0	35	1.04	0.97
MT 0205	MCNEAL/MT8808	42.82	65.5*	34.60	38.3*	67.23	90.9*	123.44	98.21	93.2*	103.4*	75.8*	6	1.06	0.99
MT 0220	MCNEAL/ND695	47.96	57.19	38.03	37.4*	62.81	76.14	115.72	88.77	86.62	94.20	70.5	39	0.91	0.99
MT 0228	MCNEAL/WA7802	42.18	54.05	39.7*	36.95	66.91	76.80	121.08	93.19	80.73	97.16	70.9	36	0.97	0.98
MT 0234	ERNEST/ND695	42.16	55.84	38.13	30.91	60.26	73.87	113.82	85.11	81.65	98.26	68.0	54	0.95	0.99
MT 0245	MT9433/ND695	51.6*	63.6*	39.0*	34.30	71.0*	90.4*	117.79	101.7*	97.54	107.8*	77.5*	3	1.03	0.98
MT 0247	MT9433/ND695	45.18	62.9*	36.89	33.19	66.40	73.70	108.43	92.35	84.55	88.98	69.3	46	0.87	0.98
MT 0249	ND695/MT9433	46.89	62.7*	41.0*	31.49	69.9*	79.43	123.16	106.3*	91.4*	102.8*	75.5*	8	1.06	0.99
MT 0255	MT9755/WA7802	36.44	59.48	37.05	35.05	69.1*	96.01	118.42	101.5*	92.1*	97.10	74.2	12	1.06	0.96
MT 0260	MT9653/ND695	50.8*	66.0*	42.6*	41.74	73.97	89.7*	132.1*	100.9*	89.2*	108.9*	79.6	1	1.05	1.00
MT 0261	ND695/MT9653	44.53	59.56	36.39	36.45	63.45	73.30	113.99	92.20	90.3*	95.06	70.5	40	0.94	0.99
MT 0266	ND695/MT9755	45.63	60.34	42.4*	29.57	67.99	75.13	115.11	102.70	94.5*	101.63	73.5	16	1.01	0.97
MT 0305	MCNEAL/MT9719	36.91	58.00	41.6*	37.7*	65.94	76.43	113.38	82.86	81.14	86.27	68.0	55	0.86	0.98
MT 0306	MCNEAL/MT9719	43.20	56.72	42.1*	35.10	58.53	80.63	115.71	76.35	75.26	89.49	67.3	60	0.85	0.95
MT 0307	MCNEAL/MT9719	41.44	65.3*	39.0*	37.5*	63.39	78.75	111.38	82.92	76.56	90.80	68.7	51	0.84	0.98
MT 0311	SCHOLAR/MT9754	37.68	60.12	36.31	29.80	66.32	81.75	103.07	91.65	85.52	99.35	69.2	47	0.94	0.97
MT 0313	MT9609/SCHOLAR	40.62	57.98	33.22	38.2*	68.48	83.44	121.02	98.88	81.22	108.6*	73.2	18	1.06	0.98
MT 0315	MT9609/SCHOLAR	39.60	61.17	30.82	34.10	67.89	79.53	114.61	101.4*	85.97	103.6*	71.9	28	1.05	0.98
MT 0317	MT9609/SCHOLAR	39.37	54.10	32.46	33.06	61.87	72.95	113.86	84.67	88.3*	98.42	67.9	56	0.99	0.99
MT 0318	MT9609/SCHOLAR	39.64	59.19	32.55	33.54	64.86	80.08	122.93	94.17	79.57	96.34	70.3	41	1.04	0.99
MT 0319	MT9609/SCHOLAR	38.47	60.14	34.23	37.3*	65.06	82.95	116.84	94.16	87.1*	98.43	71.5	30	1.00	0.99
MT 0325	MT9609/SCHOLAR	42.29	56.41	34.85	33.21	64.31	73.04	126.20	93.96	90.6*	99.47	71.4	33	1.07	0.98
MT 0326	MT9609/SCHOLAR	41.27	59.71	38.66	33.43	65.24	72.60	122.45	90.77	83.47	99.66	70.7	38	1.00	0.98
MT 0336	MT9609/MT9806	42.79	64.6*	40.2*	36.32	67.74	89.5*	124.59	91.86	90.9*	109.2*	75.8*	7	1.05	0.98
MT 0338	MT9609/MT9808	42.04	60.23	33.30	36.08	61.70	82.42	120.41	81.59	79.43	89.67	68.7	52	0.94	0.97
MT 0339	MT9715/SCHOLAR	50.8*	64.2*	40.2*	36.24	68.9*	78.06	124.92	84.41	86.10	115.60	75.0	10	1.00	0.95

(continued)

Table 1 (continued). 2004 yield (bu/ac) summary for the advanced spring wheat nursery grown across Montana.

PEDIGREE		Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
MT 0342	MT9719/MT9715	41.43	61.76	41.8*	38.3*	66.57	77.91	122.63	96.69	88.9*	106.0*	74.2	13	1.02	0.99
MT 0345	MT9754/SCHOLAR	41.25	58.82	35.69	34.23	71.3*	81.71	120.01	85.38	87.2*	104.4*	72.0	24	1.02	0.99
MT 0346	MT9754/SCHOLAR	34.35	58.88	37.71	33.85	64.73	80.99	120.53	69.01	84.23	89.37	67.4	59	0.93	0.92
MT 0351	MT9806/SD3345	43.40	63.0*	40.5*	31.82	64.94	81.17	118.14	96.08	85.18	97.73	72.2	23	0.98	0.99
MT 0352	MT9806/SD3345	38.71	65.0*	33.84	35.59	71.7*	84.38	124.40	87.24	86.64	92.85	72.0	25	1.01	0.97
MT 0354	MT9806/SD3345	43.54	67.1*	37.55	33.88	69.9*	90.7*	131.8*	81.46	91.1*	105.7*	75.3*	9	1.07	0.95
MTHW0002	MTHW9520/MTHW9427	41.43	58.36	35.11	31.64	70.2*	89.0*	130.1*	98.94	83.45	106.5*	74.5	11	1.15	0.99
MTHW0202	ID377S/MTHW9701	40.28	59.75	42.1*	26.71	70.9*	77.28	113.94	105.0*	84.85	99.27	72.0	26	1.02	0.97
MTHW0204	MTHW9427/MT9410	34.96	58.34	34.59	32.61	68.54	81.95	<u>135.52</u>	93.17	87.3*	107.3*	73.4	17	1.19	0.99
MTHW0357	MTHW9420/BZ991408	37.17	59.78	38.16	31.17	71.7*	82.25	127.72	<u>110.69</u>	94.3*	115.0*	76.8*	4	1.21	0.98
MTHW0361	BZ991408/MTHW9420	34.62	60.96	37.78	27.63	64.73	87.29	126.03	97.18	91.1*	100.82	72.8	20	1.14	0.99
MTHW0362	BZ991408/MTHW9711	40.56	64.4*	35.05	27.00	66.64	85.20	129.1*	87.48	95.4*	107.9*	73.9	15	1.15	0.98
MTHW0366	BZ991408/ID508	39.95	57.49	40.6*	24.26	64.32	75.55	130.3*	93.88	96.6*	108.3*	73.1	19	1.17	0.98
ND 695	Reeder	40.86	60.72	37.90	32.76	68.02	88.8*	110.53	92.42	85.35	97.16	71.5	31	0.95	0.98
PI527682	AMIDON	37.97	50.75	35.43	34.84	60.26	82.60	110.02	99.44	83.67	102.5*	69.8	44	1.01	0.97
PI549275	HI-LINE	40.66	58.23	34.61	33.54	64.89	75.96	109.88	90.24	78.25	97.53	68.4	53	0.93	0.99
PI574642	MCNEAL	40.84	57.46	36.92	39.0*	68.34	83.39	114.41	86.77	85.28	102.8*	71.5	32	0.95	0.98
PI592761	ERNEST	39.75	56.68	34.11	35.11	61.19	76.41	114.00	89.27	80.46	90.54	67.8	57	0.94	1.00
PI607557	SCHOLAR	44.72	52.77	36.14	32.68	67.56	72.10	115.96	99.29	84.09	95.93	70.1	42	0.99	0.98
PI612605	MTHW9420	38.65	58.82	36.00	32.76	67.84	83.63	123.04	86.70	88.1*	84.78	70.0	43	0.99	0.96
PI619086	EXPLORER	35.90	55.83	40.8*	29.65	64.17	77.34	103.53	90.71	80.93	87.36	66.6	62	0.88	0.98
PI632252	OUTLOOK	49.0*	60.18	39.5*	39.3*	67.53	84.16	116.22	94.65	87.4*	104.1*	74.2	14	0.95	1.00
PI633974	CHOTEAU	42.49	63.7*	35.58	28.68	61.93	76.02	128.6*	88.61	89.9*	103.1*	71.9	29	1.10	0.98
WB 926	WESTBRED 926	41.87	61.49	37.16	21.24	65.12	85.98	113.48	100.06	89.2*	95.19	71.1	34	1.05	0.97
*****	SITE MEAN *****	41.82	59.58	37.03	33.01	65.97	80.27	117.73	93.18	85.88	98.94	71.30		1.00	1.00
	C.V. (S/MEAN %)	9.96	7.09	9.04	8.17	4.79	6.14	4.20	6.40	7.32	8.09	7.06			
	LSD (.05)	6.92	7.18	5.62	4.56	5.37	8.42	8.15	10.14	10.72	13.60	4.42			

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

Table 2. 2004 test weight (lb/bu) summary for the advanced spring wheat nursery grown across Montana.

	PEDIGREE	Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
Agripro1	NORPRO	58.03	61.60	54.03	63.29	62.01	63.28	62.97	61.35	63.10	63.00	61.3	30	1.23	0.99
Agripro2	KNUDSON	60.02	61.90	56.34	62.61	62.35	63.68	62.22	60.83	61.80	61.30	61.3	31	0.80	0.92
Agripro3	FREYR	60.34	62.00	56.71	63.4*	62.36	63.75	63.21	61.11	62.80	62.50	61.8	16	0.85	0.98
Agripro4	01II 27-2-2 CL	59.66	64.20	55.29	63.9*	63.2*	<u>64.83</u>	64.5*	62.47	63.00	63.30	62.5*	5	1.19	0.97
Agripro5	01II 27-20-1 CL	60.37	<u>64.70</u>	54.63	64.2*	62.72	64.61	<u>64.68</u>	62.15	<u>64.80</u>	63.40	62.6*	4	1.27	0.95
Agripro6	01II 27-24-1 CL	59.83	64.20	55.63	64.0*	62.57	63.82	64.1*	61.83	63.50	63.00	62.3	10	1.09	0.96
ALSEN	ALSEN	58.30	60.70	54.37	63.4*	62.9*	63.77	63.49	61.74	63.70	62.60	61.5	21	1.22	0.95
BZ992322	HANK	58.34	59.50	53.55	61.71	61.03	62.66	60.96	59.19	60.60	62.40	60.0	55	1.05	0.91
BZ992588	Conan	59.70	60.20	56.97	63.20	61.49	63.03	61.85	60.96	60.40	62.20	61.0	37	0.69	0.82
BZ996434	BORDER/CONAN	59.58	63.10	55.99	62.94	62.39	63.9*	61.95	63.2*	63.60	63.20	62.0	12	0.95	0.89
BZ996472	BZ992-634/GOLDEN86	<u>62.64</u>	63.80	57.4*	63.37	<u>63.80</u>	63.46	63.24	<u>63.46</u>	64.00	63.80	62.9*	2	0.72	0.80
BZ999592	MCNEAL/906R	60.09	59.80	58.0*	63.9*	61.75	63.06	62.36	63.1*	62.60	64.00	61.9	13	0.66	0.67
CI 10003	THATCHER	54.11	59.80	51.93	61.91	58.32	61.97	62.02	59.38	59.60	61.80	59.1	64	1.39	0.92
CI 13596	FORTUNA	59.18	62.90	56.92	62.44	61.76	63.09	63.46	62.12	62.60	62.70	61.7	18	0.83	0.95
CI 17430	NEWANA	58.46	60.70	54.58	63.4*	60.63	63.03	61.75	60.94	62.70	62.10	60.8	41	1.06	0.95
MT 0205	MCNEAL/MT8808	57.42	58.90	53.77	61.72	60.19	62.16	62.09	60.12	60.50	61.60	59.8	59	1.05	0.94
MT 0220	MCNEAL/ND695	57.90	62.50	54.66	61.93	61.23	62.49	62.38	61.09	62.20	61.10	60.7	45	1.02	0.95
MT 0228	MCNEAL/WA7802	57.85	58.80	54.36	61.74	60.60	62.42	62.57	61.37	62.70	62.90	60.5	49	1.06	0.86
MT 0234	ERNEST/ND695	59.17	62.70	56.15	63.4*	62.49	63.16	64.1*	62.26	62.60	62.70	61.9	14	0.98	0.97
MT 0245	MT9433/ND695	58.64	60.20	54.95	62.78	61.61	62.74	62.35	60.55	61.00	62.20	60.7	46	0.97	0.95
MT 0247	MT9433/ND695	61.40	63.10	58.0*	<u>64.25</u>	62.9*	63.9*	63.9*	62.23	64.10	62.90	62.7	3	0.76	0.96
MT 0249	ND695/MT9433	58.35	61.70	56.14	63.03	61.92	62.54	63.45	60.62	61.70	62.30	61.2	34	0.92	0.96
MT 0255	MT9755/WA7802	56.51	60.50	53.93	62.54	60.86	62.57	61.24	60.94	60.90	60.70	60.1	53	1.09	0.94
MT 0260	MT9653/ND695	59.03	59.40	56.43	62.71	61.47	62.81	61.55	61.51	61.60	63.20	61.0	38	0.78	0.81
MT 0261	ND695/MT9653	59.48	59.90	57.00	62.43	60.39	62.42	61.98	61.11	61.80	61.20	60.8	42	0.65	0.88
MT 0266	ND695/MT9755	56.04	61.10	51.49	60.60	60.37	61.07	60.80	59.40	61.10	60.50	59.2	62	1.27	0.97
MT 0305	MCNEAL/MT9719	59.48	63.40	57.8*	63.5*	62.16	63.67	63.9*	60.89	63.10	64.30	62.2	11	0.85	0.90
MT 0306	MCNEAL/MT9719	61.28	64.50	<u>58.62</u>	63.5*	63.2*	64.4*	64.3*	62.9*	64.40	64.10	<u>63.1</u>	1	0.75	0.94
MT 0307	MCNEAL/MT9719	60.27	63.10	57.9*	63.4*	62.35	63.79	64.3*	61.57	63.60	63.40	62.4*	7	0.80	0.97
MT 0311	SCHOLAR/MT9754	59.41	62.20	57.03	63.23	61.53	63.10	63.03	61.22	62.00	61.60	61.4	26	0.78	0.97
MT 0313	MT9609/SCHOLAR	58.33	62.40	54.31	62.95	61.52	63.30	63.36	61.48	62.00	62.90	61.3	32	1.17	0.99
MT 0315	MT9609/SCHOLAR	58.55	60.50	55.09	62.56	60.90	62.54	62.50	61.62	62.50	62.30	60.9	39	0.98	0.96
MT 0317	MT9609/SCHOLAR	59.53	62.40	56.26	63.27	61.21	62.65	63.31	61.26	62.70	62.30	61.5	22	0.88	0.97
MT 0318	MT9609/SCHOLAR	58.83	62.70	54.35	63.5*	61.50	63.48	62.98	61.34	63.40	62.80	61.5	23	1.19	0.99
MT 0319	MT9609/SCHOLAR	59.37	62.60	54.69	63.5*	62.13	63.38	63.15	62.20	61.60	62.90	61.6	20	1.09	0.96
MT 0325	MT9609/SCHOLAR	60.51	61.20	57.21	63.39	61.38	63.55	63.23	61.75	62.80	62.60	61.8	17	0.76	0.93
MT 0326	MT9609/SCHOLAR	59.85	61.20	57.22	62.74	62.21	62.87	63.70	61.96	63.40	62.30	61.7	19	0.77	0.92
MT 0336	MT9609/MT9806	58.73	62.30	55.56	63.00	62.15	63.47	63.26	60.60	62.50	63.00	61.5	24	1.04	0.99
MT 0338	MT9609/MT9808	55.92	60.70	51.54	60.95	59.22	62.04	61.58	57.97	61.50	61.10	59.3	61	1.35	0.97
MT 0339	MT9715/SCHOLAR	57.65	60.70	52.13	61.15	59.32	61.09	61.44	58.00	59.70	61.30	59.2	63	1.14	0.93

(continued)

Table 2 (continued). 2004 test weight (lb/bu) summary for the advanced spring wheat nursery grown across Montana.

	PEDIGREE	Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
MT 0342	MT9719/MT9715	60.64	62.80	56.79	63.31	63.0*	64.6*	63.78	62.19	63.50	62.90	62.4*	8	0.90	0.97
MT 0345	MT9754/SCHOLAR	58.33	62.20	55.56	62.53	60.84	62.48	61.88	59.66	62.60	61.80	60.8	43	0.93	0.95
MT 0346	MT9754/SCHOLAR	55.51	61.60	53.66	62.59	60.56	62.96	63.19	56.28	61.70	61.30	59.9	56	1.30	0.83
MT 0351	MT9806/SD3345	58.88	61.70	54.05	61.41	61.30	63.01	62.38	60.55	61.90	60.90	60.6	47	1.03	0.95
MT 0352	MT9806/SD3345	58.56	60.70	53.86	63.24	62.49	63.61	63.71	60.32	62.30	63.00	61.2	35	1.24	0.96
MT 0354	MT9806/SD3345	56.36	61.70	52.55	61.74	60.74	62.40	62.68	58.54	63.10	62.10	60.2	52	1.37	0.95
MTHW0002	MTHW9520/MTHW9427	55.63	61.40	52.88	62.49	60.77	62.39	62.41	59.75	59.10	62.20	59.9	57	1.29	0.91
MTHW0202	ID377S/MTHW9701	59.72	64.30	57.6*	62.81	63.2*	63.68	63.23	62.56	64.10	63.90	62.5*	6	0.84	0.89
MTHW0204	MTHW9427/MT9410	55.84	61.30	51.03	62.93	60.24	62.56	62.97	60.12	63.40	62.90	60.3	51	1.63	0.98
MTHW0357	MTHW9420/BZ991408	58.68	62.60	55.34	63.6*	62.9*	63.05	62.44	62.7*	63.80	63.50	61.9	15	1.09	0.93
MTHW0361	BZ991408/MTHW9420	59.22	61.40	54.54	63.8*	62.32	63.36	62.40	61.50	62.60	62.60	61.4	27	1.10	0.96
MTHW0362	BZ991408/MTHW9711	59.85	62.30	56.90	62.60	61.75	63.13	62.25	61.85	61.90	60.80	61.3	33	0.71	0.90
MTHW0366	BZ991408/ID508	61.11	63.70	58.4*	62.51	62.32	63.8*	63.70	62.44	63.40	62.90	62.4*	9	0.64	0.90
ND 695	Reeder	59.21	60.20	56.17	63.7*	61.79	63.04	63.21	61.64	62.80	62.70	61.5	25	0.92	0.91
PI527682	AMIDON	59.57	61.20	56.15	62.53	60.28	62.56	62.25	60.83	62.60	61.00	60.9	40	0.78	0.92
PI549275	HI-LINE	57.47	62.90	53.26	62.01	60.65	62.58	62.09	60.41	61.30	61.90	60.5	50	1.20	0.96
PI574642	MCNEAL	57.19	61.80	54.95	62.36	59.98	62.38	63.35	60.85	60.70	62.50	60.6	48	1.05	0.92
PI592761	ERNEST	59.63	62.90	55.02	63.6*	61.33	63.33	63.25	60.72	61.30	61.10	61.2	36	1.00	0.90
PI607557	SCHOLAR	59.35	61.10	57.26	61.56	61.26	63.03	63.08	61.72	62.50	62.80	61.4	28	0.72	0.90
PI612605	MTHW9420	54.94	60.60	52.50	62.26	60.69	63.03	62.26	58.26	61.20	58.30	59.4	60	1.33	0.88
PI619086	EXPLORER	58.63	62.10	55.92	62.37	61.04	62.14	60.72	60.25	62.70	61.90	60.8	44	0.83	0.91
PI632252	OUTLOOK	57.68	60.20	54.06	62.40	61.31	62.15	61.85	58.41	62.00	61.30	60.1	54	1.07	0.94
PI633974	CHOTEAU	58.83	63.90	57.06	62.81	61.73	62.79	63.77	60.13	61.50	61.90	61.4	29	0.82	0.82
WB 926	WESTBRED 926	57.57	60.80	52.72	62.40	61.21	62.05	60.17	60.52	60.00	61.30	59.9	58	1.13	0.92
*****	SITE MEAN *****	58.70	61.77	55.27	62.81	61.53	63.03	62.76	60.97	62.28	62.30	61.14		1.00	1.00
	C.V. (S/MEAN %)	1.17	1 REP	1.33	0.77	0.89	0.81	0.80	0.68	1 REP	1 REP	1.40			
	LSD (.05)	1.17		1.25	0.81	0.94	0.96	0.83	0.69			0.75			

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

Table 3. 2004 protein content (percent) summary for the advanced spring wheat nursery grown across Montana.

PEDIGREE		Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
Agripro1	NORPRO	15.8	10.5	16.8	11.6	15.9	14.5	13.3	14.1	13.1	13.5	13.9	44	0.94	0.82
Agripro2	KNUDSON	16.9	10.4	17.7	13.6	15.6	13.3	12.7	14.0	13.8	13.2	14.1	37	1.05	0.87
Agripro3	FREYR	15.1	12.0	17.4	12.9	15.1	14.8	13.4	14.8	13.3	13.2	14.2	33	0.77	0.88
Agripro4	01II 27-2-2 CL	16.1	11.2	19.3	13.3	14.9	15.0	13.9	15.0	14.3	13.7	14.7*	8	1.08	0.95
Agripro5	01II 27-20-1 CL	17.1	10.6	19.7	12.0	15.7	14.5	13.3	15.3	14.3	14.3	14.7*	9	1.32	0.95
Agripro6	01II 27-24-1 CL	17.1	12.8	19.4	12.0	15.1	16.5	14.7	15.8	15.0	14.6	15.3	1	1.03	0.85
ALSEN	ALSEN	17.0	12.3	18.0	13.1	16.4	14.1	14.1	16.2	13.9	15.0	15.0*	2	0.89	0.84
BZ992322	HANK	16.6	10.9	18.6	14.9	14.0	14.3	13.2	14.9	12.8	13.8	14.4	16	1.04	0.87
BZ992588	Conan	16.4	11.7	16.6	13.0	14.2	14.5	13.9	14.8	15.4	14.7	14.5	15	0.71	0.83
BZ996434	BORDER/CONAN	16.2	10.6	17.9	16.9	14.2	15.3	15.0	15.4	12.8	13.2	14.8*	4	0.84	0.55
BZ996472	BZ992-634/GOLDEN86	15.1	10.9	16.7	15.1	12.8	15.4	13.6	14.6	13.2	11.6	13.9	45	0.73	0.57
BZ999592	MCNEAL/906R	16.3	11.7	17.7	11.7	14.6	13.6	13.1	14.7	14.2	14.1	14.2	34	0.94	0.91
CI 10003	THATCHER	18.0	10.9	19.2	11.6	16.0	12.1	14.5	14.9	15.3	13.4	14.6	12	1.28	0.80
CI 13596	FORTUNA	15.8	10.3	17.8	11.8	14.3	13.5	13.4	15.1	13.5	14.6	14.0	41	1.05	0.91
CI 17430	NEWANA	15.4	10.6	19.4	11.6	13.4	14.1	12.4	13.8	13.3	13.9	13.8	48	1.21	0.91
MT 0205	MCNEAL/MT8808	15.6	10.0	20.1	11.5	13.2	12.9	13.1	14.0	13.1	12.8	13.6	54	1.38	0.93
MT 0220	MCNEAL/ND695	16.5	11.8	16.8	12.0	14.0	15.4	14.1	16.4	14.3	15.3	14.7*	10	0.80	0.73
MT 0228	MCNEAL/WA7802	16.4	11.2	16.8	12.7	14.3	15.2	13.5	14.1	12.7	12.8	14.0	42	0.88	0.89
MT 0234	ERNEST/ND695	16.1	12.0	17.9	13.8	14.5	14.2	13.1	15.4	15.4	15.2	14.8*	5	0.80	0.84
MT 0245	MT9433/ND695	15.7	10.2	16.7	13.2	14.0	13.1	13.5	14.7	15.0	15.2	14.1	38	0.81	0.72
MT 0247	MT9433/ND695	16.3	12.1	18.1	12.5	14.7	14.5	14.0	15.5	14.1	14.8	14.7*	11	0.89	0.93
MT 0249	ND695/MT9433	16.8	11.1	18.4	12.0	14.5	14.0	13.1	15.1	14.9	14.1	14.4	17	1.10	0.94
MT 0255	MT9755/WA7802	16.7	9.3	18.0	12.2	12.4	12.6	13.1	15.0	13.4	13.1	13.6	55	1.25	0.92
MT 0260	MT9653/ND695	15.8	10.9	17.5	11.5	13.1	13.9	13.2	14.3	12.8	13.8	13.7	51	0.99	0.94
MT 0261	ND695/MT9653	16.2	10.6	18.1	12.3	14.0	14.7	14.1	15.0	14.6	13.9	14.3	22	1.04	0.94
MT 0266	ND695/MT9755	16.6	12.2	17.3	14.1	14.1	14.6	14.9	15.5	14.4	14.4	14.8	6	0.72	0.92
MT 0305	MCNEAL/MT9719	17.8	10.9	17.9	11.8	13.5	14.2	14.4	14.9	13.3	12.9	14.2	35	1.16	0.92
MT 0306	MCNEAL/MT9719	16.8	11.6	17.9	12.4	15.8	15.1	14.8	14.6	14.9	14.7	14.9*	3	0.91	0.86
MT 0307	MCNEAL/MT9719	16.1	11.3	17.9	12.7	14.3	14.7	13.4	14.2	13.6	14.2	14.2	36	0.94	0.97
MT 0311	SCHOLAR/MT9754	16.9	11.5	18.7	12.3	13.9	12.9	12.8	15.3	14.6	14.1	14.3	23	1.10	0.89
MT 0313	MT9609/SCHOLAR	16.1	11.6	18.4	13.2	14.1	14.4	12.5	15.0	13.7	13.9	14.3	24	0.98	0.94
MT 0315	MT9609/SCHOLAR	17.1	11.9	19.2	12.3	13.9	14.3	13.8	14.6	12.4	13.4	14.3	25	1.15	0.91
MT 0317	MT9609/SCHOLAR	17.1	12.2	17.8	12.0	14.1	14.6	14.0	15.2	14.0	13.3	14.4	18	0.96	0.92
MT 0318	MT9609/SCHOLAR	16.2	10.9	18.3	13.5	14.9	13.7	14.1	15.0	11.7	14.8	14.3	26	1.01	0.81
MT 0319	MT9609/SCHOLAR	16.2	10.5	18.3	13.2	14.6	14.4	13.3	14.6	15.0	13.3	14.3	27	1.05	0.93
MT 0325	MT9609/SCHOLAR	15.9	11.9	17.5	13.7	14.3	14.9	13.6	15.7	13.9	12.8	14.4	19	0.82	0.90
MT 0326	MT9609/SCHOLAR	16.2	11.3	17.1	12.6	14.8	14.5	13.4	14.3	12.4	12.7	13.9	46	0.91	0.91
MT 0336	MT9609/MT9806	15.6	10.3	18.1	12.7	13.9	13.7	13.2	14.0	13.8	12.9	13.8	49	1.05	0.97
MT 0338	MT9609/MT9808	16.8	11.5	18.9	12.9	14.0	13.9	14.1	15.4	13.4	13.4	14.4	20	1.10	0.96
MT 0339	MT9715/SCHOLAR	16.0	11.1	19.2	12.5	13.6	13.1	12.7	13.9	13.4	12.8	13.8	50	1.16	0.94

(continued)

Table 3 (continued). 2004 protein content (percent) summary for the advanced spring wheat nursery grown across Montana.

PEDIGREE		Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Kalispell	AVG	Rank	BYX	RSQ
MT 0342	MT9719/MT9715	15.8	11.4	17.2	11.4	13.6	13.4	13.2	13.5	14.0	13.2	13.7	52	0.89	0.91
MT 0345	MT9754/SCHOLAR	17.3	11.9	18.1	13.2	13.5	13.5	14.4	15.1	13.4	12.8	14.3	28	0.99	0.89
MT 0346	MT9754/SCHOLAR	17.9	11.8	17.9	11.7	14.7	14.8	12.7	15.3	14.2	12.2	14.3	29	1.13	0.86
MT 0351	MT9806/SD3345	16.6	11.8	17.4	14.0	15.2	13.9	12.9	14.3	13.6	13.6	14.3	30	0.84	0.90
MT 0352	MT9806/SD3345	17.0	10.7	17.5	11.4	12.7	13.8	12.5	13.4	13.4	11.3	13.4	60	1.15	0.90
MT 0354	MT9806/SD3345	16.4	10.2	17.8	11.9	13.7	12.9	12.3	13.2	12.6	12.9	13.4	61	1.15	0.97
MTHW0002	MTHW9520/MTHW9427	16.0	9.1	16.6	11.2	12.0	13.2	11.4	15.2	12.5	10.7	12.8	63	1.21	0.87
MTHW0202	ID377S/MTHW9701	16.1	11.0	17.5	14.4	13.2	15.2	12.8	12.8	12.7	13.5	13.9	47	0.87	0.74
MTHW0204	MTHW9427/MT9410	15.2	10.0	18.0	11.4	12.2	12.3	11.3	14.4	9.4	11.0	12.5	64	1.26	0.82
MTHW0357	MTHW9420/BZ991408	16.4	10.5	16.6	12.7	12.7	14.2	12.0	12.4	12.2	11.6	13.1	62	0.97	0.83
MTHW0361	BZ991408/MTHW9420	16.3	10.2	17.2	13.6	13.3	14.8	12.7	12.8	12.9	12.2	13.6	56	0.99	0.84
MTHW0362	BZ991408/MTHW9711	15.5	9.9	17.3	13.5	12.8	12.7	12.4	14.4	12.4	13.6	13.5	57	0.99	0.87
MTHW0366	BZ991408/ID508	15.5	9.9	16.5	13.4	13.8	15.2	11.7	13.0	12.3	13.9	13.5	58	0.89	0.74
ND 695	Reeder	16.6	10.9	18.4	12.2	13.4	14.6	13.9	14.3	13.5	13.5	14.1	39	1.10	0.96
PI527682	AMIDON	15.9	11.3	17.9	12.9	13.5	14.6	13.6	16.1	13.8	13.3	14.3	31	0.96	0.91
PI549275	HI-LINE	17.2	11.0	17.4	13.2	15.5	14.0	13.4	14.2	14.2	13.9	14.4	21	0.96	0.91
PI574642	MCNEAL	17.2	11.2	17.2	12.2	14.2	12.9	13.2	15.2	14.8	13.2	14.1	40	0.99	0.87
PI592761	ERNEST	16.9	11.5	18.1	13.0	15.1	13.7	13.6	13.8	15.6	14.3	14.6*	13	0.94	0.84
PI607557	SCHOLAR	17.2	12.0	18.3	11.6	15.7	15.6	13.9	15.1	14.5	14.1	14.8*	7	1.03	0.87
PI612605	MTHW9420	16.6	9.5	17.9	12.2	13.3	12.7	12.3	15.2	12.0	13.6	13.5	59	1.25	0.93
PI619086	EXPLORER	16.3	11.9	18.1	12.2	13.5	14.4	14.5	12.9	13.6	12.2	14.0	43	0.94	0.81
PI632252	OUTLOOK	15.7	11.7	17.0	12.1	13.8	14.2	13.0	15.2	11.5	12.4	13.7	53	0.89	0.82
PI633974	CHOTEAU	16.5	10.8	16.5	14.8	15.5	14.2	13.2	14.3	14.5	12.6	14.3	32	0.79	0.72
WB 926	WESTBRED 926	16.9	10.9	18.0	14.7	14.7	15.7	14.3	14.6	13.7	12.9	14.6	14	0.97	0.85
*****	SITE MEAN *****	16.4	11.1	17.9	12.7	14.2	14.2	13.4	14.6	13.6	13.4	14.1		1.00	1.00
	C.V. (S/MEAN %)	1 rep	1 rep	1 rep	1 rep	1 rep	1 rep	1 rep	1 rep	1 rep	1 rep	5.55			
	LSD (.05)											0.69			

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

Table 4. 2004 heading date (days from January 1) summary for the advanced spring wheat nursery grown across Montana.

	PEDIGREE	Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
Agripro1	NORPRO	182.1	185.0	184.0	158.7	172.6	178.0	161.3	167.7	182.0	181.0	175.2	39	1.00	1.00
Agripro2	KNUDSON	182.3	185.0	185.4	158.7	173.6	179.0	162.0	168.7	182.0	181.0	175.8	47	0.99	0.99
Agripro3	FREYR	181.4	185.0	184.6	158.0*	172.9	176.7	160.0	167.1	181.0	181.0	174.8	32	1.03	1.00
Agripro4	01II 27-2-2 CL	180.2	184.0	183.3	157.4*	171.6	179.3	158.9	166.5	181.0	179.0	174.1	17	1.03	1.00
Agripro5	01II 27-20-1 CL	180.2	183.0	182.1	158.1*	171.2	175.3	157.9*	166.4	181.0	179.0	173.4	9	0.99	0.99
Agripro6	01II 27-24-1 CL	180.6	184.0	183.3	157.9*	173.2	176.0	159.9	166.4	182.0	181.0	174.4	22	1.01	1.00
ALSEN	ALSEN	181.9	185.0	183.1	157.1*	171.5	178.3	158.6	166.6	181.0	180.0	174.3	20	1.06	0.99
BZ992322	HANK	179.0	183.0	182.0	158.0*	169.6	173.3*	160.3	166.5	182.0	179.0	173.3	8	0.95	0.98
BZ992588	Conan	180.1	185.0	183.6	157.3*	171.5	178.0	159.0	166.5	181.0	180.0	174.2	18	1.04	1.00
BZ996434	BORDER/CONAN	180.1	184.0	182.8	158.5	171.5	174.7	159.7	166.4	179.0	181.0	173.8	13	0.97	0.99
BZ996472	BZ992-634/GOLDEN86	180.0	182.0	180.7	157.3*	168.6*	176.0	157.6*	162.6	178.0	177.0	172.0	3	0.99	0.98
BZ999592	MCNEAL/906R	181.5	185.0	184.9	158.6	174.0	178.0	162.0	167.9	183.0	182.0	175.7	45	1.00	0.99
CI 10003	FATCHER	183.4	186.0	189.2	161.4	178.2	183.0	165.7	173.9	184.0	183.0	178.8	64	0.92	0.97
CI 13596	FORTUNA	180.4	183.0	184.9	158.4	172.9	180.0	160.4	168.0	181.0	180.0	174.9	34	0.98	0.99
CI 17430	NEWANA	184.0	185.0	186.9	160.0	176.8	181.0	162.0	172.2	184.0	184.0	177.6	63	1.00	0.98
MT 0205	MCNEAL/MT8808	181.8	185.0	185.6	159.1	173.8	180.0	161.1	168.3	183.0	182.0	176.0	53	1.02	0.99
MT 0220	MCNEAL/ND695	180.4	183.0	183.6	157.1*	174.6	180.3	158.3	166.7	181.0	180.0	174.5	25	1.04	0.99
MT 0228	MCNEAL/WA7802	181.6	185.0	183.7	158.1*	173.7	179.7	161.7	168.4	181.0	181.0	175.4	41	0.98	0.99
MT 0234	ERNEST/ND695	179.9	182.0	181.3	157.7*	171.7	175.0	158.3*	166.2	180.0	179.0	173.1	6	0.96	0.99
MT 0245	MT9433/ND695	182.6	185.0	186.3	158.5	174.4	177.7	160.4	169.5	183.0	184.0	176.1	54	1.05	0.99
MT 0247	MT9433/ND695	179.6	185.0	183.4	157.5*	171.9	178.7	159.1	167.4	181.0	181.0	174.5	26	1.03	0.99
MT 0249	ND695/MT9433	180.3	184.0	182.9	157.7*	170.7	175.7	159.3	166.6	182.0	180.0	173.9	16	1.01	0.99
MT 0255	MT9755/WA7802	182.1	184.0	183.7	159.3	171.7	174.7	160.7	166.3	181.0	181.0	174.4	23	0.97	0.98
MT 0260	MT9653/ND695	183.7	186.0	186.8	160.0	176.7	182.0	161.4	171.2	184.0	183.0	177.5	61	1.03	0.99
MT 0261	ND695/MT9653	181.8	185.0	183.3	157.9*	173.2	176.7	160.3	169.3	181.0	181.0	175.0	35	0.99	0.99
MT 0266	ND695/MT9755	178.9	183.0	182.2	157.0	171.3	176.3	157.3*	165.5	180.0	178.0	173.0	5	1.01	0.99
MT 0305	MCNEAL/MT9719	182.6	185.0	185.5	160.2	174.3	180.7	162.7	171.8	183.0	182.0	176.8	58	0.95	0.99
MT 0306	MCNEAL/MT9719	180.0	182.0	182.1	157.4*	172.2	178.7	158*	166.5	180.0	180.0	173.7	12	1.00	0.99
MT 0307	MCNEAL/MT9719	181.7	185.0	184.2	158.4	174.6	182.0	161.3	168.5	182.0	181.0	175.9	49	1.00	0.98
MT 0311	SCHOLAR/MT9754	180.4	185.0	182.8	157.7*	171.1	174*	158.7	167.2	181.0	180.0	173.8	14	1.01	0.98
MT 0313	MT9609/SCHOLAR	182.2	185.0	185.7	159.2	172.7	177.3	162.0	169.0	182.0	183.0	175.8	48	0.99	0.99
MT 0315	MT9609/SCHOLAR	182.2	185.0	185.1	159.1	173.4	179.0	160.6	168.2	181.0	182.0	175.6	43	1.01	1.00
MT 0317	MT9609/SCHOLAR	182.4	185.0	185.8	159.3	174.6	180.0	162.3	171.0	183.0	182.0	176.5	55	0.98	0.99
MT 0318	MT9609/SCHOLAR	181.4	184.0	183.5	157.5*	170.8	175.7	157.6*	166.3	180.0	179.0	173.6	11	1.04	0.99
MT 0319	MT9609/SCHOLAR	181.4	184.0	183.9	157.7*	171.7	176.0	159.0	167.2	182.0	180.0	174.3	21	1.03	1.00
MT 0325	MT9609/SCHOLAR	181.3	185.0	184.7	158.1*	172.7	176.7	161.1	168.1	181.0	181.0	175.0	36	1.00	1.00
MT 0326	MT9609/SCHOLAR	181.0	184.0	183.3	159.3	171.0	176.7	158.3*	166.1	179.0	179.0	173.8	15	0.99	0.99
MT 0336	MT9609/MT9806	182.4	185.0	184.4	158.1*	172.8	178.0	160.6	167.4	181.0	181.0	175.1	37	1.02	1.00
MT 0338	MT9609/MT9808	183.1	186.0	186.1	158.7	176.2	180.3	161.4	172.1	183.0	183.0	177.0	59	1.02	0.99
MT 0339	MT9715/SCHOLAR	181.0	185.0	183.9	158.0*	172.3	177.0	160.3	166.8	181.0	181.0	174.6	28	1.01	0.99

(continued)

Table 4 (continued). 2004 heading date (days from January 1) summary for the advanced spring wheat nursery grown across Montana.

PEDIGREE		Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
MT 0342	MT9719/MT9715	182.2	185.0	184.4	157.7*	172.9	180.7	160.3	167.9	183.0	182.0	175.6	44	1.06	0.99
MT 0345	MT9754/SCHOLAR	182.1	186.0	185.9	159.2	173.2	178.3	162.0	168.6	182.0	182.0	175.9	50	1.01	1.00
MT 0346	MT9754/SCHOLAR	183.8	186.0	187.1	159.9	175.3	181.0	163.4	172.0	184.0	183.0	177.5	62	0.99	0.99
MT 0351	MT9806/SD3345	181.7	184.0	184.4	157.9*	171.5	177.3	159.0	166.9	181.0	181.0	174.5	27	1.04	1.00
MT 0352	MT9806/SD3345	182.1	186.0	183.9	158.3	173.4	180.0	161.7	169.4	183.0	181.0	175.9	51	1.01	1.00
MT 0354	MT9806/SD3345	180.5	185.0	183.9	158.3	171.4	177.3	160.0	168.7	181.0	181.0	174.7	31	1.00	1.00
MTHW0002	MTHW9520/MTHW9427	180.8	185.0	183.3	158.6	172.2	176.0	161.0	166.7	182.0	180.0	174.6	29	0.98	0.99
MTHW0202	ID377S/MTHW9701	<u>176.0</u>	<u>181.0</u>	<u>177.9</u>	158.3	<u>165.0</u>	174.7	157.4*	<u>160.3</u>	<u>176.0</u>	<u>175.0</u>	<u>170.2</u>	1	0.90	0.95
MTHW0204	MTHW9427/MT9410	181.3	185.0	185.7	158.4	173.5	178.0	161.2	168.0	182.0	182.0	175.5	42	1.02	1.00
MTHW0357	MTHW9420/BZ991408	180.6	185.0	182.6	158.6	170.8	178.0	160.3	166.6	180.0	186.0	174.8	33	1.02	0.96
MTHW0361	BZ991408/MTHW9420	180.2	183.0	181.7	158.7	168.3*	174.3*	157.9*	164.9	181.0	181.0	173.1	7	1.01	0.98
MTHW0362	BZ991408/MTHW9711	180.8	184.0	182.4	158.8	171.2	179.0	160.3	165.8	181.0	181.0	174.4	24	0.99	0.99
MTHW0366	BZ991408/ID508	181.4	183.0	183.3	158.7	171.6	178.0	160.0	165.7	180.0	180.0	174.2	19	0.98	0.99
ND 695	Reeder	182.1	185.0	184.6	158.3	173.4	178.7	159.3	167.6	181.0	181.0	175.1	38	1.04	1.00
PI527682	AMIDON	183.3	185.0	184.2	159.2	174.4	179.0	160.6	168.6	182.0	181.0	175.7	46	1.00	0.99
PI549275	HI-LINE	180.7	183.0	182.8	157.5*	171.6	175.7	158.4	166.5	180.0	179.0	173.5	10	1.00	1.00
PI574642	MCNEAL	181.6	185.0	185.7	160.0	175.9	182.3	161.4	168.7	183.0	182.0	176.6	57	1.00	0.99
PI592761	ERNEST	182.2	184.0	185.0	160.2	173.6	178.0	160.9	170.7	182.0	182.0	175.9	52	0.95	0.99
PI607557	SCHOLAR	181.9	186.0	185.7	158.8	175.2	179.3	161.4	170.2	183.0	183.0	176.5	56	1.02	0.99
PI612605	MTHW9420	180.3	184.0	183.7	158.0*	171.4	177.0	161.6	166.6	182.0	181.0	174.6	30	0.99	1.00
PI619086	EXPLORER	180.0	182.0	180.4	157.3*	169.6	<u>173.3</u>	<u>157.0</u>	163.7	178.0	178.0	171.9	2	0.98	0.98
PI632252	OUTLOOK	181.9	186.0	186.1	159.9	176.3	179.3	164.4	171.4	183.0	183.0	177.1	60	0.94	0.99
PI633974	CHOTEAU	181.7	185.0	184.1	157.8*	172.6	179.3	161.3	167.7	182.0	180.0	175.2	40	1.01	1.00
WB 926	WESTBRED 926	179.5	182.0	180.6	158.4	169.2	175.7	158.0*	165.1	179.0	179.0	172.7	4	0.95	0.99
*****	SITE MEAN *****	181.28	184.39	183.97	158.46	172.61	177.90	160.26	167.70	181.39	180.88	174.9		1.00	1.00
	C.V. (S/MEAN %)	0.41	1 REP	0.35	0.42	1.22	0.37	0.49	0.52	1 REP	1 REP	0.56			
	LSD (.05)	1.26		1.07	1.24	3.50	0.98	1.30	1.45			0.86			

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

Table 5. 2004 plant height (inches) summary for the advanced spring wheat nursery grown across Montana.

	PEDIGREE	Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
Agripro1	NORPRO	27.97	29.00	29.86	21.59	30.02	29.29	40.71	34.65	33.24	34.79	31.1	63	0.91	0.91
Agripro2	KNUDSON	29.24	35.00	33.81	21.22	30.29	31.96	40.99	35.25	36.08	37.92	33.2	39	1.02	0.99
Agripro3	FREYR	30.74	35.00	36.3*	27.4*	32.78	35.18	43.40	36.55	38.07	38.78	35.4	13	0.81	0.95
Agripro4	01II 27-2-2 CL	30.40	34.00	<u>39.54</u>	22.50	32.05	33.50	43.13	38.50	39.54	38.91	35.2	16	1.09	0.93
Agripro5	01II 27-20-1 CL	31.76	38.00	36.3*	22.26	32.82	31.79	42.93	37.49	40.08	40.99	35.4	14	1.11	0.96
Agripro6	01II 27-24-1 CL	30.51	34.00	34.4*	22.44	32.02	31.01	40.60	36.89	38.92	38.39	33.9	36	0.98	0.96
ALSEN	ALSEN	30.84	36.00	35.72	20.46	29.84	33.61	41.37	36.91	36.85	38.25	34.0	31	1.08	0.97
BZ992322	HANK	28.60	34.00	32.89	20.25	29.72	28.28	39.12	34.07	34.48	33.50	31.5	59	0.92	0.93
BZ992588	Conan	30.39	34.00	31.90	20.92	29.48	31.94	39.34	34.77	36.37	36.05	32.5	50	0.94	0.98
BZ996434	BORDER/CONAN	30.98	37.00	36.5*	19.05	30.89	31.06	40.86	38.35	37.40	38.65	34.1	29	1.15	0.93
BZ996472	BZ992-634/GOLDEN86	27.97	33.00	31.34	21.63	28.75	31.63	36.99	34.00	33.78	33.28	31.2	61	0.79	0.97
BZ999592	MCNEAL/906R	30.82	36.00	34.30	23.85	30.48	33.46	42.08	36.14	37.63	39.41	34.4	23	0.96	0.98
CI 10003	FATCHER	<u>36.63</u>	<u>42.00</u>	38.0*	<u>27.86</u>	<u>39.32</u>	<u>41.89</u>	<u>53.11</u>	<u>47.89</u>	<u>49.58</u>	<u>46.64</u>	<u>42.3</u>	1	1.33	0.92
CI 13596	THATUNA	33.96	38.00	37.6*	24.49	37.0*	38.15	44.68	45.28	44.71	43.14	38.7	2	1.14	0.91
CI 17430	NEWANA	28.21	30.00	33.00	22.60	31.58	31.30	41.68	35.17	34.66	37.58	32.6	48	0.95	0.93
MT 0205	MCNEAL/MT8808	28.00	34.00	32.77	23.02	30.45	33.39	36.99	33.54	34.66	36.21	32.3	53	0.76	0.94
MT 0220	MCNEAL/ND695	28.40	32.00	33.03	20.43	29.02	32.14	39.41	34.35	34.18	35.59	31.9	55	0.95	0.98
MT 0228	MCNEAL/WA7802	29.84	33.00	35.19	23.53	31.08	35.01	43.45	37.78	36.70	38.35	34.4	24	1.00	0.96
MT 0234	ERNEST/ND695	29.58	32.00	32.60	21.21	31.42	32.69	40.58	36.43	35.44	35.89	32.8	42	0.95	0.97
MT 0245	MT9433/ND695	31.17	35.00	33.47	21.54	30.68	34.74	40.79	37.71	36.88	38.12	34.0	32	0.99	0.96
MT 0247	MT9433/ND695	29.91	37.00	34.74	22.14	32.76	31.86	42.41	36.22	36.71	38.54	34.2	27	1.02	0.96
MT 0249	ND695/MT9433	28.95	33.00	33.20	19.86	29.68	31.17	37.38	35.36	36.29	35.36	32.0	54	0.94	0.96
MT 0255	MT9755/WA7802	30.98	34.00	36.7*	24.72	33.27	35.05	44.73	38.51	39.00	39.46	35.6	9	1.01	0.97
MT 0260	MT9653/ND695	31.41	35.00	34.11	25.53	33.11	34.94	46.37	37.72	38.21	41.28	35.8	8	1.03	0.94
MT 0261	ND695/MT9653	32.42	39.00	36.0*	26.5*	34.94	35.15	44.88	39.40	40.02	41.25	37.0	5	0.96	0.98
MT 0266	ND695/MT9755	29.19	34.00	35.23	20.54	31.92	31.99	44.18	36.89	38.61	37.82	34.0	33	1.18	0.98
MT 0305	MCNEAL/MT9719	27.73	35.00	32.89	23.69	30.61	32.52	40.52	34.85	34.08	35.37	32.7	46	0.84	0.94
MT 0306	MCNEAL/MT9719	30.75	33.00	34.25	23.58	31.48	35.72	42.86	37.51	37.76	40.00	34.7	18	1.00	0.96
MT 0307	MCNEAL/MT9719	28.93	37.00	33.30	24.45	33.84	35.52	43.02	35.47	36.03	38.50	34.6	20	0.91	0.91
MT 0311	SCHOLAR/MT9754	30.86	34.00	36.3*	22.35	31.32	34.21	39.97	36.97	38.76	35.22	34.0	34	0.90	0.91
MT 0313	MT9609/SCHOLAR	30.49	37.00	34.04	23.15	32.01	34.60	43.42	38.42	40.35	41.42	35.5	11	1.11	0.97
MT 0315	MT9609/SCHOLAR	31.15	33.00	34.37	22.98	34.31	35.36	42.54	39.77	40.38	41.43	35.5	12	1.06	0.93
MT 0317	MT9609/SCHOLAR	32.15	34.00	34.76	23.39	34.83	33.94	43.94	39.05	42.17	42.79	36.1	7	1.12	0.93
MT 0318	MT9609/SCHOLAR	29.71	36.00	31.76	21.08	31.21	31.54	39.23	36.12	36.37	36.50	33.0	41	0.95	0.95
MT 0319	MT9609/SCHOLAR	30.38	34.00	36.7*	21.17	33.20	34.95	42.19	37.18	38.50	38.47	34.7	19	1.06	0.96
MT 0325	MT9609/SCHOLAR	30.55	38.00	36.0*	21.53	33.83	31.72	42.42	37.49	40.22	41.18	35.3	15	1.14	0.95
MT 0326	MT9609/SCHOLAR	31.60	36.00	35.55	22.14	34.64	34.39	42.44	40.00	39.86	39.63	35.6	10	1.07	0.97
MT 0336	MT9609/MT9806	29.02	33.00	33.63	22.45	32.25	33.29	42.08	37.66	36.96	38.90	33.9	37	1.03	0.98
MT 0338	MT9609/MT9808	30.85	35.00	34.34	22.17	32.33	33.10	44.41	36.64	37.39	39.35	34.6	21	1.09	0.99
MT 0339	MT9715/SCHOLAR	29.89	35.00	32.52	22.36	29.95	31.87	38.23	36.73	34.36	36.91	32.8	43	0.85	0.94

(continued)

Table 5 (continued). 2004 plant height (inches) summary for the advanced spring wheat nursery grown across Montana.

	PEDIGREE	Havre DRY	Conrad DRY	Moccasin DRY	Huntley DRY	Sidney DRY	Sidney IRR	Huntley IRR	Kalispell DRY	Bozeman DRY	Bozeman IRR	AVG	Rank	BYX	RSQ
MT 0342	MT9719/MT9715	30.09	33.00	34.90	21.58	32.42	33.69	42.12	37.30	37.68	37.79	34.1	30	1.03	0.98
MT 0345	MT9754/SCHOLAR	27.69	33.00	35.64	21.07	29.48	30.81	41.60	34.89	35.81	37.42	32.7	47	1.06	0.96
MT 0346	MT9754/SCHOLAR	30.74	35.00	34.30	26.1*	32.15	33.24	40.89	35.98	36.95	38.78	34.4	25	0.78	0.98
MT 0351	MT9806/SD3345	32.33	35.00	34.49	23.22	32.79	33.86	42.24	36.44	37.78	37.96	34.6	22	0.92	0.98
MT 0352	MT9806/SD3345	29.44	33.00	32.52	23.97	33.15	33.44	43.14	36.92	36.48	38.43	34.0	35	0.95	0.95
MT 0354	MT9806/SD3345	28.02	34.00	30.82	20.51	27.52	31.21	39.80	32.70	34.51	35.00	31.4	60	0.96	0.95
MTHW0002	MTHW9520/MTHW9427	28.13	36.00	34.23	21.62	30.04	33.82	43.27	34.77	36.36	36.64	33.5	38	1.06	0.95
MTHW0202	ID377S/MTHW9701	28.32	34.00	35.24	22.42	29.42	30.63	39.41	35.13	34.06	35.86	32.4	51	0.88	0.94
MTHW0204	MTHW9427/MT9410	29.18	32.00	31.83	21.02	30.14	31.64	39.92	34.33	36.42	37.74	32.4	52	0.98	0.98
MTHW0357	MTHW9420/BZ991408	29.28	35.00	33.47	20.90	31.63	31.13	39.98	34.42	36.12	36.15	32.8	44	0.96	0.98
MTHW0361	BZ991408/MTHW9420	28.42	32.00	33.17	21.36	28.51	30.80	39.77	33.32	35.10	36.23	31.9	56	0.94	0.98
MTHW0362	BZ991408/MTHW9711	28.67	35.00	33.08	21.41	29.73	33.57	41.93	33.73	35.56	38.83	33.2	40	1.04	0.96
MTHW0366	BZ991408/ID508	28.71	32.00	32.86	21.71	30.29	33.11	41.88	35.34	35.68	36.49	32.8	45	0.99	0.97
ND 695	Reeder	31.13	37.00	32.52	20.14	32.72	35.41	44.83	37.64	39.22	40.07	35.1	17	1.23	0.97
PI527682	AMIDON	31.13	40.00	37.6*	23.18	36.78	38.19	46.59	41.92	45.30	45.4*	38.6	3	1.32	0.96
PI549275	HI-LINE	27.76	31.00	32.53	21.07	31.14	30.52	38.71	33.90	33.75	36.01	31.6	58	0.89	0.97
PI574642	MCNEAL	29.67	34.00	37.50	24.85	31.03	33.16	40.94	36.77	36.46	39.72	34.4	26	0.89	0.93
PI592761	ERNEST	32.98	39.00	39.3*	26.2*	33.65	37.55	48.51	40.11	42.91	45.8*	38.6	4	1.20	0.96
PI607557	SCHOLAR	30.79	38.00	36.3*	24.29	35.04	31.89	45.81	39.24	42.04	42.67	36.6	6	1.17	0.94
PI612605	MTHW9420	28.32	34.00	32.94	20.37	30.91	31.08	41.81	35.48	35.12	36.35	32.6	49	1.06	0.99
PI619086	EXPLORER	28.69	32.00	34.49	20.96	29.61	30.75	36.97	33.20	33.25	32.45	31.2	62	0.77	0.90
PI632252	OUTLOOK	29.85	34.00	32.48	24.13	31.95	31.98	44.12	36.56	36.53	40.62	34.2	28	1.02	0.93
PI633974	CHOTEAU	28.46	34.00	32.54	19.75	29.12	28.91	39.87	35.39	35.06	36.40	31.9	57	1.05	0.98
WB 926	WESTBRED 926	28.10	32.00	32.17	19.40	28.72	32.90	34.30	32.36	34.10	33.03	30.7	64	0.78	0.86
*****	SITE MEAN *****	29.98	34.64	34.32	22.43	31.71	33.10	41.84	36.68	37.40	38.31	34.00		1.00	1.00
	C.V. (S/MEAN %)	3.42	1 REP	6.23	5.00	4.34	5.35	4.26	3.11	3.42	3.31	3.98			
	LSD (.05)	1.73		3.56	1.91	2.33	2.99	2.95	1.89	2.15	2.14	1.19			

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