

PROJECT TITLE: Statewide Spring Wheat Variety Performance

PROJECT LEADER: L. Talbert - Bozeman

PROJECT PERSONNEL:

D.M. Wichman - CARC, Moccasin
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G.F. Stallknecht - SARC, Huntley
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OBJECTIVE:

To evaluate new and existing varieties and lines of spring wheat under various Montana conditions.

RESULTS:

The 1993 Advanced Yield Spring Wheat trial was grown at seven rainfed and two irrigated locations in Montana. Kalispell and Conrad were considered high rainfall areas. Replicated multiple-row plots were established at all locations using standard research techniques.

Yield, test weight, heading date and plant height at maturity are summarized in Tables 1, 2, 3 and 4 respectively.

Conditions were unusually wet and cool at all sites in 1993. HUNTLEY: The Huntley dryland site suffered drought for the first six weeks of the season, causing the earlier maturing varieties to have reduced yields. SIDNEY: The Sidney dryland site had adequate soil moisture for germination and emergence, but did not receive rain until early June, causing some reduction in yield. High rainfall and cool temperatures in June, July, and August resulted in development of tan spot with some Septoria. HAVRE: Cloudy, wet weather prevailed in Havre, with 54 days of the growing season receiving measurable precipitation. Some Septoria developed at that site. MOCCASIN: A very cool growing season with high precipitation was experienced in Moccasin. Harvest was delayed because of the wet weather. KALISPELL: Cold, wet weather in Kalispell resulted in high infection of Septoria and stripe rust. CONRAD: Planting was delayed 2-3 weeks and harvest was delayed a month in Conrad because of wet weather. Some wheat streak was noted. BOZEMAN: Cool, wet weather in June, July, and August resulted in severe stripe rust infection at the Bozeman site. The cool weather delayed maturity, and some later maturing varieties were damaged by frost. Harvest was also delayed.

SUMMARY:

The highest yielding varieties on a statewide average were soft white wheats BZ684-23 and Penewawa. Highest yielding hard red spring wheats statewide were MT 9266 and Amidon.

FUTURE PLANS:

New and existing varieties and experimental lines will continue to be evaluated across Montana so breeders can release improved varieties and producers can have information on the varieties best adapted to conditions in their areas.

Table 1. 1993 YIELD (BU/AC) SUMMARY FOR THE ADVANCED SPRING WHEAT NURSERY GROWN ACROSS MONTANA

ID	PEDIGREE	BOZEMAN DRY	HAVRE	SIDNEY DRY	SIDNEY IRR	KALISPELL	MOCCASIN	HUNTLEY DRY	HUNTLEY IRR	CONRAD DRY	AVG	BYX	RSQ
BZ684-23	BZ684-23	128.82	60.30	48.96	64.47	70.19	88.23	45.03	101.55	75.47	75.9	1.44	0.89
BZ984326	WPB BZ 984-326	96.21	52.76	40.08	47.13	52.05	69.87	36.86	84.33	64.70	60.4	1.07	0.86
C982-324	RAMBO	74.32	48.00	44.29	62.70	68.04	67.33	42.50	97.11	77.03	64.6	0.92	0.83
CI 10003	THRATCHER	76.03	44.92	41.15	49.10	55.94	59.49	39.96	68.02	60.28	55.0	0.68	0.94
CI 13596	FORTUNA	76.94	41.98	29.93	28.33	71.41	65.58	36.46	72.23	59.21	53.6	0.95	0.73
CI 15930	OLAF	96.06	44.74	40.46	65.20	74.03	58.33	42.57	86.79	52.56	62.3	1.06	0.87
CI 17429	LEW	82.05	49.11	43.87	46.33	78.59	59.73	42.02	79.43	67.31	60.9	0.84	0.81
CI 17430	NEWANA	74.34	52.02	47.39	67.53	64.11	72.41	45.02	89.37	65.48	64.2	0.76	0.88
CI 17790	LEN	62.49	47.00	43.04	56.73	60.80	67.56	42.25	91.86	59.41	59.0	0.75	0.74
CI 17828	PONDERA	101.69	51.11	47.82	65.97	62.97	69.20	41.46	92.67	67.92	66.8	1.11	0.95
CI 17904	OWENS	86.42	55.67	56.24	57.53	72.60	83.06	44.56	99.46	75.72	70.1	0.96	0.89
FA982220	FA 982-220	65.63	50.56	50.86	66.50	66.35	71.81	47.20	92.40	69.90	64.6	0.67	0.71
MT 8849	RS6880/MT7819	60.37	56.83	52.08	74.83	81.65	78.65	45.92	91.06	70.43	68.0	0.60	0.49
MT 9153	BW574//NEWANA/FORTUNA	85.31	48.14	49.46	63.70	68.81	66.16	38.30	88.59	70.02	64.3	0.94	0.96
MT 9154	BW574//NEWANA/FORTUNA	88.05	43.07	36.53	36.83	72.98	65.29	35.49	79.31	61.48	57.7	1.07	0.86
MT 9157	BW574//NEWANA/FORTUNA	85.67	39.00	23.85	29.83	60.12	58.40	34.99	79.06	60.84	52.4	1.14	0.84
MT 9158	MEKSEL2315/LEADER	102.67	42.70	39.79	61.40	68.18	62.81	39.40	86.38	61.70	62.8	1.18	0.94
MT 9203	CROW'S//61502	98.79	44.77	33.56	53.13	71.52	66.38	39.37	96.00	59.87	62.6	1.30	0.96
MT 9206	MT7926//LEW/81TAU1328	102.86	43.54	44.56	67.00	56.17	67.55	36.57	80.56	60.24	62.1	1.09	0.86
MT 9209	MEKSEL2315/MT7736//MT747/	81.05	45.34	43.02	69.97	55.79	66.91	32.03	68.27	63.13	58.4	0.79	0.78
MT 9212	MT8402/ALEX	85.99	45.12	30.36	64.83	56.41	66.34	31.91	83.74	59.83	58.3	1.10	0.93
MT 9215	MT8406/MT8302	43.08	53.79	46.27	61.67	56.60	65.79	35.95	98.06	58.39	57.7	0.59	0.34
MT 9217	RS7055/MT7736//CI15838/MT719/PAV	60.48	50.67	48.33	67.23	64.02	76.79	36.82	93.62	63.91	62.4	0.75	0.63
MT 9221	MT8411//SU73/LEW	68.59	46.21	43.22	54.60	61.86	62.61	36.48	72.05	60.00	56.2	0.67	0.95
MT 9222	SHASHI/PONDERA/NEWANA//MAYA/MT734	97.52	48.38	43.29	54.37	74.41	71.72	33.10	98.63	62.44	64.9	1.30	0.98
MT 9229	MT8416/MT8456	91.09	51.16	46.37	55.27	58.01	67.36	42.14	83.95	70.08	62.8	0.92	0.92
MT 9232	MT8421/MT8450	102.35	54.68	47.35	58.13	64.19	80.95	40.77	93.19	64.38	67.3	1.15	0.94
MT 9233	MT8421/MT8438	97.40	47.84	50.24	58.23	65.70	66.17	37.15	82.22	62.91	63.1	1.01	0.94
MT 9234	MV70181/OLAF//MAYA/MT7634	101.30	43.31	36.33	59.77	82.32	70.11	38.41	98.37	56.39	65.1	1.37	0.94
MT 9242	CI15838/MT7418//PONDERA/MN73167	100.57	45.93	43.98	63.53	75.83	75.26	38.98	90.93	65.92	66.8	1.20	0.98
MT 9248	LEW/OLAF//MT8336	57.32	47.80	52.15	61.37	61.95	69.52	43.49	81.47	61.69	59.6	0.51	0.60
MT 9253	RS6508/LEW/4/BUTTE//MT7810/3/ROCK'S	79.69	51.47	45.82	67.80	62.60	70.06	40.76	85.77	51.29	61.7	0.82	0.86
MT 9254	MT7819/MT8354	91.16	46.90	50.09	54.10	74.52	73.11	41.17	88.91	70.43	65.6	1.02	0.95
MT 9257	MT7810/MT8402	98.07	47.40	53.30	71.03	79.60	70.82	41.56	92.07	59.66	68.2	1.06	0.91
MT 9260	MT7810/MT8180/3/NK715//BW557	106.54	54.12	47.40	67.17	78.78	69.81	42.01	83.18	63.79	68.1	1.07	0.89
MT 9262	MT8177/3/MT808//LEW/81TAU23c5	89.72	46.37	45.33	66.73	67.49	79.68	44.19	90.10	60.68	65.6	1.01	0.94
MT 9265	MT8452/MN73167	98.47	53.16	44.94	68.40	99.48	57.78	41.29	89.52	63.87	68.5	1.09	0.73
MT 9266	MT8452/MN73167	110.33	53.20	45.84	69.07	94.70	75.10	39.80	98.15	72.17	73.2	1.34	0.93
ND 582	STOA	92.03	52.16	45.12	72.40	83.97	67.40	40.59	90.21	59.62	67.1	1.03	0.88
ND 606	AMIDON	95.19	52.19	47.41	73.47	90.10	74.22	43.41	92.98	69.99	71.0	1.07	0.90
ND	CUT CUTLESS	59.27	40.19	38.45	47.67	56.24	61.04	34.92	85.43	57.93	53.5	0.79	0.80
PH986-61	WESTBRED 936	105.34	49.25	45.76	71.37	37.42	69.39	39.95	89.17	68.70	64.0	1.10	0.69
PI483235	GLENMAN	80.66	49.61	42.24	54.37	61.12	63.18	51.31	83.55	73.48	62.2	0.76	0.85
PI486139	KLASIC	104.82	45.08	42.65	71.17	57.57	65.90	37.04	79.30	56.33	62.2	1.09	0.82
PI549275	HI-LINE	63.59	48.86	42.77	69.93	56.94	67.16	39.52	85.06	73.75	60.8	0.70	0.65
TR983239	TR 983-239	105.99	47.96	39.90	49.17	55.95	74.87	38.98	98.28	69.53	64.5	1.33	0.90
WA 6920	PENAWAWA	116.70	66.51	55.01	69.27	91.56	92.94	46.65	99.03	91.70	81.0	1.24	0.90
WB 926	WESTBRED 926	113.88	51.86	44.03	58.40	69.50	73.96	34.35	93.97	63.38	67.0	1.37	0.94
WBEXPRES	WESTBRED EXPRESS	106.69	50.55	47.69	73.53	74.97	74.48	35.13	89.11	73.36	69.5	1.22	0.94
*****	SITE MEAN *****	88.77	49.05	44.26	60.58	68.29	69.76	39.91	88.05	65.07	63.7	1.00	1.00

Table 2. 1993 TEST WEIGHT (LB/BU) SUMMARY FOR THE
ADVANCED SPRING WHEAT NURSERY
GROWN ACROSS MONTANA

D	PEDIGREE	BOZEMAN DRY	HAVRE	SIDNEY DRY	SIDNEY IRR	KALISPELL	MOCCASIN	HUNTLEY DRY	HUNTLEY IRR	CONRAD DRY	AVG	BYX	RSQ
Z	4-23 BZ684-23	55.90	54.85	54.01	50.64	49.05	58.56	58.80	59.90	57.90	55.5	1.26	0.85
Z	4326 WPB BZ 984-326	57.50	58.30	59.52	56.84	50.21	59.94	56.70	61.80	60.20	57.9	0.97	0.64
	982-324 RAMBO	51.80	57.87	58.25	57.20	53.01	59.70	62.10	61.80	56.00	57.5	1.07	0.70
I	10003 THATCHER	57.20	56.35	56.19	54.53	53.00	59.09	59.00	61.20	58.10	57.2	0.85	0.87
I	3596 FORTUNA	59.50	57.50	55.50	50.83	54.42	59.09	60.70	61.90	61.20	57.8	0.97	0.54
I	5930 OLAF	55.70	56.27	57.01	55.84	54.39	58.14	57.60	61.50	58.80	57.2	0.68	0.81
I	17429 LEW	56.90	58.76	59.62	57.99	56.13	61.28	62.30	62.40	61.10	59.6	0.82	0.95
I	7430 NEWANA	50.50	56.66	56.58	56.08	52.08	58.13	59.90	61.60	57.60	56.6	1.12	0.79
I	7790 LEN	51.20	56.43	57.31	55.22	51.19	58.69	61.70	61.50	57.70	56.8	1.30	0.88
I	17828 PONDERA	58.30	57.44	58.47	57.28	53.88	60.10	60.80	61.80	61.20	58.8	0.85	0.90
I	17904 OWENS	52.80	55.29	56.86	52.62	48.25	58.96	61.00	60.20	55.30	55.7	1.42	0.91
T	2220 FA 982-220	51.60	58.09	58.73	57.05	51.09	59.60	62.40	61.40	56.90	57.4	1.25	0.78
T	8849 RS6880/MT7819	50.50	58.14	58.03	57.86	52.87	59.74	55.40	62.10	60.40	57.2	0.92	0.47
T	9153 BW574//NEWANA/FORTUNA	52.80	56.89	58.05	53.16	51.36	58.94	60.20	59.80	59.50	56.7	1.18	0.91
T	9154 BW574//NEWANA/FORTUNA	57.80	57.76	55.84	51.57	54.49	59.27	60.40	62.00	60.90	57.8	0.99	0.66
T	9157 BW574//NEWANA/FORTUNA	55.50	57.43	56.00	49.76	51.69	59.62	61.90	60.60	59.10	56.8	1.31	0.79
T	9158 MEXSEL2315/LEADER	52.60	54.90	55.25	53.19	49.63	57.71	60.10	60.00	57.30	55.6	1.26	0.99
T	9203 CROW'S/61502	57.50	56.50	54.43	53.16	54.19	58.89	59.70	61.50	58.90	57.2	0.85	0.69
T	9206 MT7926//LEW/81TAU1328	58.40	56.46	58.01	57.50	49.14	58.93	59.50	61.00	58.60	57.5	1.03	0.71
T	9209 MEXSEL2315/MT7736//MT747/	55.50	58.04	57.72	55.83	50.87	59.20	60.40	60.70	57.90	57.4	1.05	0.93
M	9212 MT8402/ALEX	58.10	56.90	58.52	56.14	52.95	57.47	59.20	62.10	60.30	58.0	0.83	0.77
MT	9215 MT8406/MT8302	50.10	56.28	54.63	53.58	47.83	56.64	57.80	60.90	56.70	54.9	1.38	0.91
MT	9217 RS7055/MT7736//CI15838/MT	53.40	57.99	58.34	57.45	54.10	59.05	59.60	62.40	60.90	58.1	0.94	0.79
M	9221 MT8411//SU73/LEW	58.40	57.50	59.31	56.67	56.32	60.25	60.20	60.60	60.70	58.9	0.56	0.81
M	9222 SHASHI/PONDERA/NEWANA//MA	58.30	57.66	56.54	55.36	54.15	58.00	60.10	60.90	60.70	58.0	0.74	0.76
MT	9229 MT8416/MT8456	55.70	57.31	57.84	55.98	51.62	59.16	61.20	59.30	57.90	57.3	0.93	0.88
MT	9232 MT8421/MT8450	56.90	55.95	56.43	54.21	52.35	57.19	61.10	60.40	59.30	57.1	0.95	0.85
M	9233 MT8421/MT8438	54.60	57.17	57.60	54.35	49.84	58.43	60.50	61.10	56.50	56.7	1.20	0.92
M	9234 MN70181/OLAF//MAYA/MT7634	57.30	57.29	56.81	54.18	54.34	59.52	61.40	61.50	60.30	58.1	0.93	0.86
MT	9242 CI15838/MT7418//PONDERA/M	55.40	57.46	57.79	55.72	55.17	59.61	60.70	62.50	60.70	58.3	0.92	0.91
MT	9248 LEW/OLAF//MT8336	54.10	58.08	59.95	58.54	52.51	61.53	61.70	61.20	57.30	58.3	1.01	0.72
M	9253 RS6508/LEW/4/BUTTE//MT781	57.00	57.94	57.96	55.81	53.75	59.09	60.50	61.00	59.80	58.1	0.83	0.97
M	9254 MT7819/MT8354	53.90	56.64	57.09	51.50	51.61	59.22	60.20	59.40	58.10	56.4	1.13	0.88
MT	9257 MT7810/MT8402	57.50	57.93	58.47	57.92	55.67	60.66	61.20	62.40	60.70	59.2	0.77	0.95
MT	9260 MT7810/MT8180/3/NK715//BW	60.90	58.93	60.00	58.96	55.56	60.92	62.30	61.40	62.20	60.1	0.65	0.72
M	9262 MT8177/3/MT808//LEW/81TAU	56.60	57.73	58.73	57.45	54.79	61.28	60.70	61.60	59.00	58.7	0.79	0.92
MT	9265 MT8452/MN73167	54.00	58.57	59.24	57.15	54.19	60.42	62.40	62.60	58.90	58.6	1.05	0.87
MT	9266 MT8452/MN73167	53.80	56.93	57.84	55.20	55.16	60.02	61.20	62.40	58.30	57.9	0.96	0.82
N	582 STOA	57.90	56.62	57.98	56.26	52.96	59.26	60.10	60.50	59.30	57.9	0.80	0.89
N	606 AMIDON	55.10	56.40	58.82	57.85	50.44	59.87	59.50	60.10	60.00	57.6	1.03	0.80
ND	CUT CUTLESS	55.30	55.69	57.11	56.97	52.49	60.11	60.40	60.60	59.00	57.5	0.95	0.90
PH986-61	WESTBRED 936	55.70	56.70	55.96	53.16	47.07	55.46	60.10	60.20	57.20	55.7	1.30	0.83
P	83235 GLENNAN	54.70	56.70	56.40	54.45	51.74	58.83	60.90	59.50	59.50	57.0	1.05	0.95
P	86139 KLASIC	61.40	54.73	57.14	54.95	50.70	57.26	58.60	59.50	59.40	57.1	0.74	0.40
PI549275	HI-LINE	51.80	57.59	57.49	57.50	51.34	59.10	61.70	62.60	59.80	57.7	1.31	0.86
TR983239	TR 983-239	52.00	58.70	56.47	53.96	51.63	59.53	61.90	62.70	59.00	57.3	1.40	0.91
W	6920 PENAWANA	57.00	56.54	55.78	54.26	53.87	58.29	60.10	61.40	58.70	57.3	0.85	0.85
W	926 WESTBRED 926	55.30	57.77	56.64	53.50	52.92	57.82	59.80	60.60	59.50	57.1	0.95	0.91
WBEXPRES	WESTBRED EXPRESS	50.60	57.21	57.46	56.99	53.18	58.35	57.60	61.90	57.50	56.8	0.91	0.62
*****	SITE MEAN *****	55.35	57.12	57.38	55.31	52.47	59.30	60.27	61.18	59.02	57.5	1.00	1.00

Table 3. 1993 HEADING DATE (DAYS FROM JAN.1) SUMMARY FOR
THE ADVANCED SPRING WHEAT NURSERY
GROWN ACROSS MONTANA

ID	PEDIGREE	BOZEMAN DRY	HAVRE	SIDNEY DRY	SIDNEY IRR	KALISPELL	MOCCASIN	HUNTLEY DRY	HUNTLEY IRR	CONRAD DRY	AVG	BYX	RSQ
BZ684-23	BZ684-23	202.00	172.82	173.08	174.59	186.00	181.06	158.50	163.00	191.00	178.0	1.12	1.00
BZ984326	WPB BZ 984-326	193.00	171.32	170.29	170.36	180.33	175.74	155.00	157.50	186.00	173.3	1.01	1.00
C982-324	RAMBO	202.00	174.28	173.27	175.29	185.67	181.23	161.00	164.00	193.00	178.9	1.08	0.99
CI 10003	THATCHER	198.00	173.12	174.37	176.25	187.67	182.57	160.50	163.00	190.00	178.4	1.01	0.99
CI 13596	FORTUNA	197.00	171.89	172.62	174.02	184.33	178.57	159.50	162.50	189.00	176.6	0.99	1.00
CI 15930	OLAF	199.00	172.20	172.78	173.57	185.33	180.21	160.00	162.00	189.00	177.1	1.03	0.99
CI 17429	LEN	201.00	175.42	176.07	178.31	188.67	182.05	162.50	165.50	192.00	180.2	1.01	0.99
CI 17430	NEWANA	200.00	174.55	175.71	178.03	187.67	182.24	163.00	166.00	190.00	179.7	0.96	0.99
CI 17790	LEN	199.00	172.57	173.21	175.69	184.67	181.02	161.00	163.50	189.00	177.7	0.99	0.99
CI 17828	PONDERA	194.00	171.69	172.34	172.48	183.00	178.50	157.50	161.50	187.00	175.3	0.96	1.00
CI 17904	OWENS	196.00	172.75	172.71	173.26	182.33	180.56	157.50	160.50	187.00	175.8	1.00	1.00
FA982220	FA 982-220	201.00	174.98	173.77	176.37	186.67	181.08	161.00	164.00	191.00	178.9	1.04	1.00
MT 8849	RS6880/MT7819	200.00	173.64	173.58	176.33	186.33	181.05	162.00	163.00	188.00	178.2	0.99	0.99
MT 9153	BW574//NEWANA/FORTUNA	194.00	172.54	171.60	171.77	182.33	177.76	157.50	159.50	187.00	174.9	0.98	1.00
MT 9154	BW574//NEWANA/FORTUNA	196.00	171.14	172.42	173.55	185.00	178.47	159.50	159.50	189.00	176.1	1.02	0.99
MT 9157	BW574//NEWANA/FORTUNA	198.00	174.13	174.31	176.04	187.33	181.35	160.50	162.50	191.00	178.4	1.02	0.99
MT 9158	MEKSEL2315/LEADER	196.00	173.49	173.28	175.02	183.33	181.71	159.50	162.50	189.00	177.1	0.97	1.00
MT 9203	CROW'S'/61502	194.00	171.72	171.57	171.34	180.33	179.59	158.00	160.00	186.00	174.7	0.95	0.99
MT 9206	MT7926//LEN/81TAUL328	200.00	173.20	173.64	174.99	186.00	180.21	160.00	162.00	190.00	177.8	1.06	1.00
MT 9209	MEKSEL2315/MT7736//MT747/	196.00	172.30	172.59	171.87	183.67	179.26	157.00	160.50	189.00	175.8	1.04	1.00
MT 9212	MT8402/ALEX	192.00	168.84	170.19	169.80	177.33	174.52	154.00	155.50	185.00	171.9	1.01	0.99
MT 9215	MT8406/MT8302	193.00	171.27	171.53	171.67	181.33	179.21	159.50	160.50	186.00	174.9	0.91	1.00
MT 9217	RS7055/MT7736//CI15838/MT	196.00	172.25	172.73	173.63	184.33	178.23	158.50	160.50	188.00	176.0	1.00	1.00
MT 9221	MT8411//SU73/LEN	195.00	171.76	171.96	172.60	185.67	177.20	161.00	163.00	188.00	176.2	0.93	0.99
MT 9222	SHASHI/PONDERA/NEWANA//MA	192.00	170.45	170.96	171.02	180.00	176.52	158.00	159.00	185.00	173.7	0.92	1.00
MT 9229	MT8416/MT8456	194.00	173.04	171.41	172.28	180.67	179.46	158.00	160.00	187.00	175.1	0.96	1.00
MT 9232	MT8421/MT8450	193.00	170.45	171.16	171.67	180.00	177.38	159.00	159.50	186.00	174.2	0.92	0.99
MT 9233	MT8421/MT8438	199.00	173.93	174.47	176.19	185.33	180.85	161.00	164.50	190.00	178.4	0.98	1.00
MT 9234	MN70181/OLAF//MAYA/MT7634	196.00	172.32	173.07	173.28	184.33	179.88	161.00	162.50	187.00	176.6	0.93	0.99
MT 9242	CI15838/MT7418//PONDERA/M	197.00	173.15	172.56	174.28	184.33	181.70	159.50	160.00	189.00	176.8	1.03	1.00
MT 9248	LEN/OLAF//MT8336	201.00	176.35	178.42	179.35	188.67	184.67	165.00	164.50	192.00	181.1	0.98	0.99
MT 9253	RS6508/LEN/4/BUTTE//MT781	193.00	170.79	171.43	171.13	178.33	176.91	157.00	156.50	186.00	173.5	0.98	0.99
MT 9254	MT7819/MT8354	201.00	174.80	173.98	175.45	185.67	182.32	160.50	164.00	191.00	178.7	1.05	1.00
MT 9257	MT7810/MT8402	194.00	171.84	172.12	172.42	181.67	179.02	158.00	161.00	187.00	175.2	0.95	1.00
MT 9260	MT7810/MT8180/3/MK715//BW	197.00	173.88	173.59	173.27	185.33	181.61	159.00	163.50	189.00	177.4	0.99	0.99
MT 9262	MT8177/3/MT808//LEN/81TAU	195.00	172.35	173.04	173.01	183.67	180.79	159.50	162.00	187.00	176.3	0.94	0.99
MT 9265	MT8452/MN73167	200.00	172.69	172.86	175.12	185.00	181.05	159.50	162.50	190.00	177.6	1.06	1.00
MT 9266	MT8452/MN73167	201.00	173.40	172.90	176.17	182.67	180.30	158.50	159.00	191.00	177.2	1.12	0.99
ND 582	STOA	196.00	172.76	173.10	172.66	184.33	179.82	161.00	161.00	189.00	176.6	0.97	0.99
ND 606	AMIDON	198.00	171.44	174.38	172.76	184.33	180.79	161.50	162.00	188.00	177.0	0.98	0.99
ND CUT CUTLESS		195.00	173.08	172.43	172.68	182.00	178.35	159.00	159.00	189.00	175.6	0.99	0.99
PH986-61	WESTBRED 936	192.00	168.81	170.81	170.01	177.33	176.42	156.00	155.50	185.00	172.4	0.98	0.99
PI483235	GLEMAN	199.00	173.10	174.12	176.32	186.67	180.38	162.00	163.00	190.00	178.3	1.00	1.00
PI486139	KLASIC	191.00	167.25	168.13	168.12	177.00	172.05	152.00	154.00	184.00	170.4	1.04	1.00
PI549275	HI-LINE	199.00	171.54	171.78	172.01	182.00	177.05	158.00	158.00	187.00	175.2	1.07	0.99
TR983239	TR 983-239	194.00	172.27	171.16	172.88	180.67	178.45	158.50	160.00	186.00	174.9	0.94	1.00
WA 6920	PENAWANA	197.00	172.37	172.87	172.31	183.33	179.30	158.00	162.50	190.00	176.4	1.02	0.99
WB 926	WESTBRED 926	191.00	168.97	170.47	170.03	178.33	175.58	155.00	156.00	185.00	172.3	0.98	1.00
WBEXPRES	WESTBRED EXPRESS	202.00	172.79	171.19	176.05	185.67	180.01	158.50	160.50	191.00	177.5	1.15	1.00
*****	SITE MEAN *****	196.71	172.40	172.69	173.62	183.52	179.47	159.12	161.06	188.39	176.3	1.00	1.00

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Table 4. 1993 PLANT HEIGHT (INCHES) SUMMARY FOR THE
ADVANCED SPRING WHEAT NURSERY GROWN
ACROSS MONTANA

ID	PEDIGREE	BOZEMAN DRY	HAVRE	SIDNEY DRY	SIDNEY IRR	KALISPELL	MOCCASIN	HURVILEY DRY	HUNTLEY IRR	CONRAD DRY	AVG	BYX	RSQ
BZ684-23	BZ684-23	36.33	27.26	32.09	33.33	34.79	35.00	25.45	34.50	37.00	32.9	1.07	0.98
984326	WPB BZ 984-326	36.92	29.87	32.34	35.33	32.77	33.00	27.06	35.50	38.00	33.4	0.85	0.82
82-324	RAMBO	36.50	28.10	31.91	33.00	34.78	36.00	26.45	34.50	37.00	33.1	0.99	0.97
CI 10003	THATCHER	48.18	36.73	39.17	39.33	47.83	44.00	31.03	44.00	50.00	42.3	1.61	0.92
13596	FORTUNA	41.91	31.35	37.22	37.00	42.63	37.00	33.00	41.50	44.00	38.4	1.09	0.84
15930	OLAF	39.90	27.80	31.85	35.00	35.43	36.00	26.57	38.00	43.00	34.8	1.40	0.93
CI 17429	LEW	43.76	32.55	37.49	36.67	43.41	40.00	30.30	40.50	44.00	38.7	1.30	0.95
CI 17430	NEWANA	34.25	27.23	32.07	33.67	33.40	36.00	27.00	33.00	37.00	32.6	0.90	0.91
17790	LEN	35.86	29.03	32.74	33.67	35.36	36.00	28.67	36.00	37.00	33.8	0.82	0.95
17828	PONDERA	34.71	28.83	32.95	34.00	35.46	32.00	28.00	35.00	38.00	33.2	0.81	0.87
CI 17904	OWENS	34.07	28.90	32.51	33.33	33.48	36.00	25.82	31.50	38.00	32.6	0.91	0.86
FA982220	FA 982-220	34.12	26.29	30.30	33.00	32.80	35.00	25.78	36.00	39.00	32.5	1.11	0.88
8849	RS6880/MT7819	37.87	29.59	32.75	36.67	38.00	38.00	26.43	35.50	38.00	34.8	1.10	0.90
9153	BW574//NEWANA/FORTUNA	32.75	28.52	30.22	34.00	34.82	33.00	24.73	31.50	37.00	31.8	0.91	0.85
MT 9154	BW574//NEWANA/FORTUNA	43.36	32.40	38.20	37.67	42.55	37.00	30.40	39.50	42.00	38.1	1.13	0.88
MT 9157	BW574//NEWANA/FORTUNA	44.53	33.43	37.59	38.67	45.29	42.00	32.25	41.50	47.00	40.3	1.37	0.96
9158	MEXSEL2315/LEADER	33.14	26.39	32.86	33.33	32.83	35.00	26.63	33.00	36.00	32.1	0.85	0.87
9203	CROW'S'/61502	43.47	28.99	35.80	35.33	42.61	39.00	30.27	39.50	44.00	37.7	1.44	0.93
MT 9206	MT7926//LEW/81TAU1328	41.46	31.39	36.47	35.00	40.63	38.00	29.73	38.50	44.00	37.2	1.23	0.95
MT 9209	MEXSEL2315/MT7736//MT747/	39.12	31.37	35.60	34.33	39.38	39.00	28.58	36.00	41.00	36.0	1.08	0.95
9212	MT8402/ALEX	37.94	28.75	32.03	33.00	36.05	36.00	27.85	35.50	37.00	33.8	0.95	0.94
9215	MT8406/MT8302	41.95	33.15	33.82	36.67	40.64	43.00	29.35	40.50	47.00	38.5	1.43	0.89
MT 9217	RS7055/MT7736//CI15838/MT	34.21	27.28	30.74	32.67	34.11	35.00	26.27	34.00	34.00	32.0	0.82	0.88
MT 9221	MT8411//SU73/LEW	41.72	30.48	37.27	36.33	39.97	36.00	30.18	42.00	43.00	37.4	1.19	0.85
9222	SHASHI/PONDERA/NEWANA//MA	37.80	28.69	32.07	33.67	37.46	36.00	28.45	36.00	40.00	34.5	1.08	0.97
9229	MT8416/MT8456	34.75	27.55	31.68	33.67	32.27	35.00	27.57	34.50	37.00	32.7	0.84	0.89
MT 9232	MT8421/MT8450	35.92	28.73	31.32	34.67	34.64	37.00	27.70	33.50	35.00	33.2	0.79	0.82
MT 9233	MT8421/MT8438	39.29	30.04	35.12	35.67	38.13	36.00	28.20	35.50	38.00	35.1	0.97	0.93
9234	MN70181/OLAF//MAYA/MT7634	35.34	28.69	32.71	35.00	34.10	37.00	28.29	33.50	38.00	33.6	0.85	0.88
MT 9242	CI15838/MT7418//PONDERA/M	38.38	28.10	32.65	34.67	36.10	38.00	29.56	34.00	37.00	34.3	0.91	0.86
MT 9248	LEN/OLAF//MT8336	44.05	32.74	37.75	37.00	38.16	41.00	30.67	36.50	45.00	38.1	1.20	0.88
9253	RS6508/LEW/4/BUTTE//MT781	33.74	27.28	31.32	32.67	31.56	32.00	26.39	32.00	36.00	31.4	0.77	0.91
9254	MT7819/MT8354	36.86	30.46	35.62	37.00	38.77	38.00	28.83	35.00	39.00	35.5	0.92	0.89
MT 9257	MT7810/MT8402	35.83	27.93	31.21	30.67	34.81	35.00	25.82	33.50	37.00	32.4	1.01	0.97
MT 9260	MT7810/MT8180/3/NK715//BW	33.32	26.96	30.53	30.67	34.05	34.00	26.65	33.50	35.00	31.6	0.82	0.94
9262	MT8177/3/MT808//LEW/81TAU	34.10	27.20	31.60	29.67	32.84	35.00	27.16	33.00	37.00	32.0	0.87	0.89
9265	MT8452/MN73167	39.20	30.09	33.58	35.00	38.06	35.00	30.50	37.00	41.00	35.5	0.97	0.92
MT 9266	MT8452/MN73167	34.43	26.82	29.74	33.00	34.07	35.00	24.15	30.50	37.00	31.6	1.09	0.92
ND 582	STOA	44.03	32.80	37.63	37.00	42.71	38.00	29.61	38.50	44.00	38.3	1.28	0.92
606	AMIDON	41.88	31.25	36.84	34.67	40.69	40.00	30.28	40.50	44.00	37.8	1.26	0.93
CUT	CUTLESS	38.47	29.20	34.76	34.33	36.06	35.00	28.71	33.50	40.00	34.4	0.97	0.93
PH986-61	WESTBRED 936	30.26	26.27	34.45	29.67	29.58	29.00	25.25	28.00	33.00	29.5	0.52	0.43
PI483235	GLENMAN	36.00	30.34	33.02	33.33	37.39	38.00	27.24	33.50	39.00	34.2	0.98	0.90
I486139	KLASIC	26.63	20.60	28.78	26.00	25.65	23.00	22.84	25.00	28.00	25.2	0.46	0.42
I549275	HI-LINE	35.22	26.89	30.39	31.67	34.04	32.00	25.68	29.00	35.00	31.1	0.87	0.88
TR983239	TR 983-239	33.45	28.06	30.31	33.00	31.57	34.00	26.67	31.50	38.00	31.8	0.83	0.84
6920	PENAWANA	35.42	26.94	31.16	32.00	34.77	34.00	24.78	33.00	36.00	32.0	1.04	0.99
3	926 WESTBRED 926	33.97	28.10	29.34	30.00	32.79	30.00	26.20	28.00	35.00	30.4	0.69	0.75
WESTBRED EXPRESS	WESTBRED EXPRESS	31.69	25.21	28.41	29.33	29.58	30.00	24.32	27.50	32.00	28.7	0.68	0.91
*****	SITE MEAN *****	37.31	29.03	33.22	33.98	36.30	35.80	27.74	34.96	38.94	34.1	1.00	1.00