

PROJECT TITLE: Statewide Spring Wheat Variety Performance

PROJECT LEADER: L. Talbert - Bozeman

PROJECT PERSONNEL: G.D. Kushnak - WTARC, Conrad  
 G.R. Carlson - NARC, Havre  
 G.F. Stallknecht - SARC, Huntley  
 R.N. Stougaard - NWARC, Kalispell  
 G.D. Jackson - CARC, Moccasin  
 J.L.A. Eckhoff - EARC, Sidney

OBJECTIVE:

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

RESULTS:

The 1994 Advanced Yield Spring Wheat trial was grown at two irrigated and seven rainfed locations across Montana. Kalispell and Bozeman 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. Soil moisture and early rainfall was adequate or high at most of the Advanced Yield Trial sites, but hot, dry weather was experienced in much of Montana later in the growing season. Conrad achieved good yields in spite of the drought because of good soil moisture at planting, lack of disease, and below average wind. Moccasin experienced average rain in April and May, then dry weather for the rest of the season. Cooler temperatures allowed maximum benefit of the water that was available at that site. The Moccasin site was hailed on 27 May, but recovery was generally good. Huntley experienced hot, dry weather early in the season, then again during flowering. Rainfall amounts were normal, but did not occur in a timely fashion. Rainfall was above average through June at Sidney, followed by warm, dry weather during grain-fill. Incidence of disease at Sidney was moderate, resulting in good yields. Havre started the season with good soil moisture and early rainfall, then had hot, dry weather. Early moisture and lack of disease allowed average yields. Bozeman experienced lower than average rainfall, but disease pressure was low. Kalispell had average rainfall and little disease. Conditions were dry late in the season, allowing a good harvest.

SUMMARY:

The highest yielding varieties on a statewide basis were soft white wheats Vanna, Owens and Penawawa. Highest yielding hard red spring wheats in a statewide basis were Montana lines MT9265, MT9341, and Westbred Express.

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 the varieties best adapted to conditions in their areas.

Table 1. 1994 GRAIN YIELD (bu/ac) SUMMARY FOR THE ADVANCED SPRING WHEAT NURSERY GROWN ACROSS MONTANA.

ID	PEDIGREE/CULTIVAR	HAYRE DRY	SIDNEY DRY	MOCCASI DRY	HUNTLEY DRY	CONRAD DRY	SIDNEY IRR	HUNTLEY IRR	BOZEMAN HIGH RADFA	KALISPELL HIGH RADFA	AVG.	BYX	RSQ
BZ684-23	VANNA	47.15	72.24	33.53	42.23	56.43	95.54	56.04	101.85	104.70	67.70	1.09	0.98
BZ984326	BORDER	41.11	59.68	25.91	26.21	40.03	72.07	27.64	84.08	87.38	51.60	1.00	0.98
BZ990516	BZ990516	40.42	60.60	28.20	34.71	47.02	65.56	46.39	90.43	90.86	56.00	0.90	0.94
C982-324	RAMBO	38.50	65.26	29.04	32.60	47.29	87.50	43.80	88.26	98.24	58.90	1.07	0.98
CI 10003	THATCHER	32.72	46.27	25.77	30.10	33.98	60.49	26.22	68.89	85.20	45.50	0.85	0.96
CI 13596	FORTUNA	39.70	51.75	27.56	35.40	49.71	76.25	37.27	80.03	93.35	54.60	0.93	0.98
CI 17429	LEW	33.38	54.74	30.61	33.45	42.83	80.65	26.57	79.69	89.81	52.60	0.99	0.98
CI 17430	NEWANA	42.02	62.09	31.35	32.35	52.85	82.47	39.87	93.26	98.33	59.40	1.06	0.99
CI 17790	LEN	38.87	60.80	29.40	37.38	42.40	87.16	45.28	85.87	87.31	57.20	0.95	0.97
CI 17828	PONDERA	39.81	63.21	28.65	33.34	45.86	85.81	31.79	92.69	85.33	56.30	1.04	0.97
CI 17904	OWENS	38.32	68.58	30.68	37.33	51.02	103.38	38.96	99.12	111.27	64.30	1.30	0.98
MT 9209	MEXSEL 2315/MT7736/MT7471	39.09	57.56	27.45	29.78	42.59	72.80	24.19	79.96	91.01	51.60	0.99	0.97
MT 9257	MT7810/MT8402	37.66	55.52	25.32	28.83	48.14	78.69	27.27	85.30	97.41	53.80	1.10	0.98
MT 9265	MT8452/MT73167	42.34	59.27	29.04	37.16	51.61	86.51	45.44	87.40	97.11	59.50	1.00	0.99
MT 9302	MT8313/(CI15838/MT7418//P	39.13	51.96	26.74	40.36	43.19	76.11	49.11	78.87	79.89	53.90	0.77	0.93
MT 9303	MT8313/(CI15838/MT7418//P	38.16	60.95	27.84	25.33	39.12	80.02	23.17	72.97	85.33	50.30	0.98	0.95
MT 9307	MT8339/3/FTA/TK715/DW559	38.09	53.19	29.32	25.78	44.66	70.61	19.53	86.59	84.62	50.30	1.00	0.95
MT 9309	MT7819/(OLAF/LEW)	35.33	63.24	25.93	30.02	41.13	87.62	36.45	91.85	88.84	55.60	1.11	0.99
MT 9311	MT7819/(OLAF/LEW)	35.31	53.74	30.97	36.71	49.57	72.51	37.17	83.11	93.69	54.80	0.92	0.97
MT 9313	MT7810/MT7926	32.85	52.44	23.55	28.08	39.16	75.07	38.26	83.45	84.89	50.90	0.98	0.99
MT 9315	MT7810/MT7926	35.97	51.44	32.71	29.40	43.73	66.39	48.55	81.75	81.46	52.40	0.78	0.93
MT 9321	MT7810/MT7926	34.80	54.22	22.87	27.28	36.85	78.56	27.53	76.13	83.74	49.10	0.99	0.99
MT 9322	MT7810/MT7926	36.90	53.26	28.45	29.74	42.47	73.34	28.04	85.10	84.82	51.30	0.97	0.99
MT 9323	MT7810/MT7926	38.49	57.07	25.44	32.88	42.23	83.11	21.91	91.37	86.87	53.30	1.09	0.96
MT 9324	MT7810/MT7926	37.65	52.55	29.83	32.50	42.28	78.66	34.27	89.68	84.27	53.50	0.97	0.98
MT 9325	MT7810/MT7926	37.93	50.92	30.92	29.96	43.53	74.90	34.20	85.13	89.36	53.00	0.96	0.99
MT 9327	MT7819/(OLAF/LEW)	36.56	58.56	24.37	32.05	47.29	72.65	32.02	87.53	83.20	52.70	0.96	0.98
MT 9328	MT7810/MT7926	40.67	62.19	30.20	32.35	47.22	90.17	36.84	88.59	98.21	58.50	1.10	0.99
MT 9332	MT7810/MT7926	43.23	57.00	28.98	30.03	46.21	78.36	41.45	79.30	95.55	55.60	0.95	0.97
MT 9333	MT7810/MT7926	37.94	58.79	29.83	33.42	48.10	81.13	29.35	84.99	91.50	55.00	1.01	0.98
MT 9336	MT7810/(SU73/LEW)	40.36	51.94	30.23	39.52	46.10	68.40	37.07	89.29	95.79	55.40	0.94	0.95
MT 9339	MT7810/(SU73/LEW)	37.72	55.05	29.35	35.78	38.63	75.15	48.24	86.24	91.17	55.30	0.93	0.96
MT 9340	NEWANA/PND/MT8195	37.42	60.47	31.29	34.81	44.69	77.10	42.24	81.76	89.66	55.50	0.90	0.99
MT 9341	NEWANA/PND/MT8195	38.68	59.92	33.14	34.62	46.78	79.13	45.71	98.16	100.03	59.60	1.07	0.98
MT 9354	MT7810/(SU73/LEW)	39.58	54.61	26.43	38.30	43.47	78.55	45.42	90.67	82.12	55.50	0.90	0.95
MT 9360	LEW/PND	40.78	53.97	24.06	42.53	41.49	76.22	50.26	82.94	95.09	56.40	0.91	0.92
MT 9373	LEW/PND	35.03	54.48	28.96	35.68	49.80	72.08	38.72	86.69	97.51	55.40	0.98	0.96
ND 582	STOA	40.05	64.95	31.47	35.28	41.12	79.96	39.07	85.97	88.16	56.20	0.94	0.98
ND 606	AMIDON	39.71	61.43	25.97	35.38	38.89	89.29	44.65	84.10	97.09	57.40	1.06	0.97
ND 677	ND622*2/CUTLESS	40.00	62.35	28.55	26.94	44.04	92.29	22.34	79.45	84.09	53.30	1.05	0.92
ND CUT	CUTLESS	37.50	56.65	24.44	32.26	37.30	83.00	42.55	80.10	87.97	53.50	0.97	0.97
PI1986-61	WESTBRED 936	48.50	61.48	28.40	30.42	51.29	73.78	36.06	99.40	103.26	59.20	1.11	0.95
PI483735	GLENMAN	41.45	58.04	33.55	32.17	53.08	84.99	36.12	94.70	95.75	59.10	1.05	0.98
PI549275	HI-LINE	40.79	59.66	28.40	40.09	44.74	74.69	47.57	85.85	88.67	56.70	0.87	0.97
PI574642	MCNEAL	42.13	68.51	30.22	39.16	49.69	84.41	42.32	87.87	85.24	58.80	0.91	0.97
TR983239	FEROUS	41.27	55.47	30.13	25.34	44.57	78.57	34.70	98.89	91.25	55.60	1.10	0.97
WA 6920	PENAWAWA	43.15	72.92	29.64	35.88	55.23	101.47	34.70	92.18	110.78	64.00	1.25	0.97
WB 926	WESTBRED 926	45.56	59.38	31.99	28.63	51.41	91.28	32.53	92.68	90.08	58.20	1.07	0.97
WDEXPRES	WESTBRED EXPRESS	46.65	66.52	29.99	29.07	45.32	83.55	33.20	102.48	99.48	59.60	1.18	0.97
*****	SITE MEAN *****	39.36	58.51	28.75	33.04	45.23	79.96	36.90	86.99	91.57	55.60	1.00	1.00

Table 2. 1994 TEST WEIGHT (LB/BU) SUMMARY FOR THE ADVANCED SPRING WHEAT NURSERY GROWN ACROSS MONTANA

ID	PEDIGREE	HAVRE DRY	SIDNEY DRY	MOCCASIN DRY	HUNTLEY DRY	CONRAD DRY	SIDNEY IRR	HUNTLEY IRR	BOZEMAN HIGH RAINFA	KALISPELL HIGH RAINFAL	AVG.	BYX	RSQ
BZ684-23	VANNA	52.49	60.83	57.99	55.70	56.90	62.00	55.50	59.50	59.30	57.80	0.92	0.73
BZ984326	BORDER	56.61	63.05	58.42	57.10	59.40	62.83	52.30	60.00	60.80	58.90	1.13	0.89
BZ990516	BZ990516	57.44	62.47	61.08	56.90	57.60	61.00	56.10	59.90	60.40	59.20	0.75	0.88
C982-324	RAMBO	58.20	62.92	61.71	57.30	56.30	62.83	56.80	59.30	59.20	59.40	0.75	0.71
CI 10003	THATCHER	54.16	60.14	59.19	55.90	56.90	61.17	51.10	60.50	60.40	57.70	1.19	0.93
CI 13596	FORTUNA	59.43	62.71	61.60	57.30	59.30	63.67	55.00	62.70	61.40	60.40	0.98	0.95
CI 17429	LEW	56.01	62.39	60.82	58.40	59.90	63.83	55.30	62.90	62.20	60.40	0.96	0.95
CI 17430	NEWANA	57.20	62.07	60.93	55.90	58.80	62.33	56.00	58.70	59.70	59.10	0.80	0.86
CI 17790	LEN	55.11	61.61	59.06	56.00	58.30	62.67	56.70	61.10	60.20	59.00	0.85	0.81
CI 17828	PONDERA	59.20	63.05	60.66	54.50	58.30	63.30	50.40	60.90	61.20	59.10	1.42	0.89
CI 17904	OWENS	54.35	61.15	59.37	54.90	58.70	62.00	53.70	60.60	58.30	58.10	1.06	0.92
MT 9209	MEXSEL2315/MT7736/MT747/	57.60	61.36	60.59	55.00	57.50	61.50	50.60	60.30	59.40	58.20	1.21	0.91
MT 9257	MT7810/MT8402	57.11	62.95	60.28	54.30	59.50	64.00	47.30	60.40	60.40	58.50	1.73	0.91
MT 9265	MT8452/MT73167	58.28	62.69	61.77	57.30	59.00	64.17	56.40	61.60	61.40	60.30	0.93	0.97
MT 9302	MT8313/(CI)5838/MT7418/P	57.42	61.81	58.95	57.90	58.80	63.17	56.10	60.80	59.60	59.40	0.75	0.89
MT 9303	MT8313/(CI)5838/MT7418/P	58.75	61.83	61.09	54.70	58.70	63.17	48.40	58.70	59.70	58.30	1.44	0.83
MT 9307	MT8339/3/FTA/NK715/DW559	57.23	61.65	61.60	58.20	59.70	63.50	52.90	62.40	61.40	59.80	1.13	0.93
MT 9309	MT7819/(OLAF/LEW)	53.56	59.93	58.43	53.10	57.40	60.67	51.70	59.30	59.30	57.30	1.09	0.94
MT 9311	MT7819/(OLAF/LEW)	58.66	62.78	63.44	59.30	59.40	62.83	58.50	61.80	62.30	61.00	0.64	0.82
MT 9313	MT7810/MT7926	53.54	60.51	60.75	57.90	56.90	62.33	56.00	58.90	59.80	58.70	0.73	0.78
MT 9315	MT7810/MT7926	55.88	61.36	60.97	56.00	57.70	61.30	57.60	61.30	58.90	59.00	0.71	0.71
MT 9321	MT7810/MT7926	58.17	61.86	61.58	57.90	58.90	63.83	56.10	60.00	60.60	59.90	0.82	0.93
MT 9322	MT7810/MT7926	57.22	62.28	61.33	57.00	56.30	62.83	51.80	59.00	60.50	58.70	1.18	0.89
MT 9323	MT7810/MT7926	56.75	62.61	61.32	56.70	59.10	63.33	49.50	58.40	61.00	58.70	1.40	0.87
MT 9324	MT7810/MT7926	55.29	59.67	59.33	56.70	55.90	62.00	54.30	60.30	59.20	58.10	0.88	0.88
MT 9325	MT7810/MT7926	56.13	60.81	60.38	57.60	57.70	63.00	54.60	60.70	60.30	59.00	0.93	0.94
MT 9327	MT7819/(OLAF/LEW)	58.46	63.64	63.78	59.80	59.00	63.83	56.10	62.40	62.80	61.10	0.95	0.89
MT 9328	MT7810/MT7926	55.52	61.16	59.93	55.00	58.40	62.83	53.20	60.40	59.20	58.40	1.13	0.98
MT 9332	MT7810/MT7926	58.40	62.64	60.98	58.00	57.60	64.00	58.00	62.00	61.10	60.30	0.76	0.81
MT 9333	MT7810/MT7926	57.10	61.99	61.15	57.90	59.40	63.00	53.50	61.50	61.10	59.60	1.05	0.96
MT 9336	MT7810/(SU73/LEW)	54.55	60.67	59.68	53.70	58.60	61.00	52.90	61.10	59.10	58.10	1.04	0.93
MT 9339	MT7810/(SU73/LEW)	55.23	59.83	60.54	56.60	57.10	61.50	57.80	59.20	60.20	58.70	0.59	0.62
MT 9340	NEWANA/PND/MT8195	56.65	61.73	60.23	57.30	56.50	62.33	57.10	60.50	59.30	59.10	0.71	0.78
MT 9341	NEWANA/PND/MT8195	56.07	60.71	60.38	57.40	57.80	61.83	57.10	60.10	58.50	58.90	0.62	0.79
MT 9354	MT7810/(SU73/LEW)	57.04	61.68	61.01	56.60	60.40	62.50	55.50	61.10	59.60	59.50	0.86	0.93
MT 9360	LEW/PND	58.42	62.03	60.32	56.30	59.70	62.17	55.90	60.00	59.80	59.40	0.74	0.92
MT 9373	LEW/PND	55.29	60.35	58.81	53.30	59.70	61.27	54.10	60.70	59.70	58.20	0.98	0.83
ND 582	STOA	56.27	61.49	59.32	53.60	58.80	63.00	53.60	60.40	60.30	58.80	1.07	0.98
ND 606	AMIDON	57.71	61.87	60.98	55.00	57.90	63.50	53.30	61.30	60.50	59.10	1.18	0.96
ND 677	ND622*2/CUTLESS	58.82	63.63	62.10	55.90	58.80	64.00	51.50	61.90	61.20	59.80	1.40	0.94
ND CUT	CUTLESS	58.00	63.13	60.98	57.20	58.30	63.50	56.30	61.70	61.60	60.10	0.93	0.95
PI1986-61	WESTBRED 936	56.10	61.34	59.83	56.10	57.40	59.33	52.90	59.80	59.00	58.00	0.88	0.90
PI483235	GLENMAN	57.23	60.32	59.34	52.10	59.40	62.33	53.10	61.40	60.10	58.40	1.15	0.81
PI549275	HI-LINE	55.10	63.07	57.22	55.90	59.40	61.83	54.90	60.40	59.10	58.50	0.93	0.78
PI574642	MCNEAL	56.11	61.00	58.94	54.50	57.90	62.50	54.30	59.80	60.10	58.30	1.00	0.94
TR983239	FERGUS	56.74	62.40	59.96	56.40	57.60	62.17	51.20	61.30	61.10	58.80	1.27	0.95
WA 6920	PENAWAWA	55.55	61.73	60.44	55.60	58.20	62.67	50.30	60.20	58.40	58.10	1.32	0.96
WB 926	WESTBRED 926	57.07	61.60	59.55	56.40	59.00	62.33	51.10	60.20	58.20	58.40	1.13	0.89
WHEXPRES	WESTBRED EXPRESS	57.08	62.28	59.01	56.30	59.10	62.17	54.00	60.60	59.40	58.90	0.94	0.95
*****	SITE MEAN *****	56.74	61.77	60.37	56.40	58.36	62.56	54.05	60.58	60.13	59.00	1.00	1.00

1994 HEADING DATE (DAYS FROM JAN.1) SUMMARY FOR THE ADVANCED SPRING WHEAT NURSERY GROWN ACROSS MONTANA

Table 3.

ID	PEDIGREE	HAVRE DRY	SIDNEY DRY	MOCCASI DRY	HUNTLEY DRY	SIDNEY IRR	HUNTLEY IRR	BOZEMAN HIGH RAINFAL	KALISPELL HIGH RAINFA	AVG	BYN	RSQ
H2684-23	VANNA	172.71	166.42	176.99	165.00	168.00	164.00	180.00	177.86	171.40	1.13	0.99
H2984726	BOUNDER	169.67	163.33	175.14	162.00	162.30	160.50	174.00	175.03	167.70	1.13	0.98
H2990516	H2990516	173.21	167.60	177.90	164.00	168.01	164.50	180.00	175.43	171.30	1.09	0.98
C982-324	RAMBO	174.44	168.82	178.63	167.00	169.34	165.50	181.00	176.35	172.60	1.02	0.98
CI 10003	THATCHER	174.04	169.14	178.54	168.00	168.38	167.00	179.00	177.04	172.60	0.91	1.00
CI 13596	FORTUNA	171.95	166.28	176.13	164.00	163.03	163.50	178.00	176.49	170.20	1.10	1.00
CI 17429	LEW	174.04	170.74	179.40	170.00	171.02	169.00	181.00	179.63	174.40	0.87	0.97
CI 17430	NEWANA	174.39	169.72	177.95	169.00	170.96	167.50	181.00	178.69	173.70	0.90	0.98
CI 17790	LEN	173.97	167.18	177.56	166.00	168.36	165.00	179.00	176.78	171.70	1.02	1.00
CI 17828	PONDERA	172.11	165.53	176.07	163.00	165.67	162.50	177.00	175.67	169.70	1.10	0.99
CI 17904	OWENS	171.93	165.32	176.65	163.50	164.62	163.50	177.00	177.13	170.00	1.13	0.98
MT 9209	MEXSEL2313/MT7736/MT747/	170.89	166.03	176.03	163.50	165.36	162.50	177.00	175.06	169.50	1.06	1.00
MT 9257	MT7810/MT8402	172.73	167.44	177.26	164.50	164.69	164.00	177.00	176.55	170.50	1.06	0.98
MT 9265	MT8452/MT73167	173.54	168.65	177.75	163.00	168.30	164.50	179.00	177.00	171.70	1.04	0.99
MT 9302	MT8313/(CI15838/MT7418/)	170.59	164.16	175.25	162.50	163.68	159.50	174.00	174.98	168.10	1.12	0.98
MT 9303	MT8313/(CI15838/MT7418/)	171.58	163.37	177.31	164.00	163.34	163.00	178.00	175.29	170.00	1.12	0.99
MT 9307	MT8339/3/MT74/MT713/BW559	174.37	170.75	178.33	170.00	170.33	169.00	181.00	177.87	174.00	0.81	0.97
MT 9309	MT7819/(OLAF/LEW)	173.01	167.09	178.39	167.50	167.67	164.50	179.00	177.43	171.80	1.03	0.99
MT 9311	MT7819/(OLAF/LEW)	175.22	171.67	180.32	169.50	170.97	168.50	181.00	178.70	174.50	0.89	0.99
MT 9313	MT7810/MT7926	178.27	172.40	183.93	171.50	172.35	170.50	182.00	181.17	176.50	0.96	0.98
MT 9315	MT7810/MT7926	175.18	170.54	179.32	169.50	170.33	168.00	180.00	178.99	174.00	0.89	1.00
MT 9321	MT7810/MT7926	177.38	171.72	182.11	170.50	171.65	170.00	182.00	180.00	175.70	0.94	0.99
MT 9322	MT7810/MT7926	175.03	171.35	180.99	170.00	171.06	168.50	182.00	180.39	174.90	0.98	0.99
MT 9323	MT7810/MT7926	177.05	171.02	180.65	169.50	171.05	169.50	181.00	177.99	174.70	0.88	0.98
MT 9324	MT7810/MT7926	176.91	170.72	180.67	170.00	170.96	169.50	181.00	180.24	175.00	0.93	0.99
MT 9325	MT7810/MT7926	175.82	170.40	180.59	169.50	170.98	170.00	180.00	179.34	174.60	0.87	0.99
MT 9327	MT7819/(OLAF/LEW)	176.45	171.33	179.29	169.50	171.35	168.00	181.00	179.02	174.50	0.90	1.00
MT 9328	MT7810/MT7926	172.84	167.32	177.03	165.00	169.31	164.50	178.00	177.08	171.40	0.99	0.98
MT 9332	MT7810/MT7926	172.68	168.39	176.76	163.50	168.69	163.50	177.00	175.47	171.00	0.92	0.97
MT 9333	MT7810/MT7926	173.67	171.23	179.39	168.50	170.32	165.50	180.00	178.44	173.40	0.93	0.96
MT 9336	MT7810/(SU73/LEW)	172.61	166.32	176.33	164.50	166.07	162.50	177.00	173.70	170.10	1.03	0.99
MT 9339	MT7810/(SU73/LEW)	176.28	171.40	179.77	170.00	170.96	168.00	182.00	179.54	174.70	0.93	1.00
MT 9340	NEWANA/PND/MT8193	173.99	168.88	178.67	167.50	169.96	168.00	180.00	178.87	173.20	0.93	0.99
MT 9341	NEWANA/PND/MT8193	174.20	169.47	180.39	169.00	170.98	167.00	181.00	178.39	173.80	0.98	0.98
MT 9354	MT7810/(SU73/LEW)	173.08	168.95	176.11	163.00	168.63	164.50	178.00	177.22	171.40	0.93	0.97
MT 9360	LEW/PND	172.38	165.14	176.02	164.00	163.70	163.50	176.00	174.92	169.70	1.00	0.99
MT 9373	LEW/PND	173.51	168.31	177.71	166.50	170.65	166.50	179.00	178.07	172.60	0.93	0.98
ND 582	STOA	172.01	163.90	176.75	163.00	163.03	164.00	176.00	176.07	170.10	1.01	0.99
ND 606	AMIDON	172.29	167.72	176.65	166.50	167.32	164.50	177.00	176.72	171.10	0.93	0.99
ND 677	ND622*2/CUTLESS	172.40	166.81	177.37	166.00	166.30	164.50	177.00	176.57	170.90	0.99	0.99
ND CUT	CUTLESS	172.12	166.67	176.43	163.50	166.30	163.50	177.00	176.25	170.20	1.03	0.99
PI986-61	WESTBRED 936	169.19	162.77	174.53	162.00	162.68	160.00	174.00	172.01	167.10	1.06	0.99
PI483235	GLENMAN	172.36	167.93	178.31	167.00	168.69	166.00	180.00	177.93	172.30	1.01	0.98
PI549275	III-LINE	171.32	164.44	175.29	162.00	163.33	162.00	177.00	174.59	168.70	1.15	0.99
PI574642	MCNEAL	173.01	169.05	177.37	163.50	169.99	165.00	180.00	176.21	172.00	0.98	0.97
TR083239	FERGUS	171.89	164.04	175.50	162.50	164.03	162.00	175.00	173.24	168.50	1.03	0.98
WA 6920	PENAWAWA	171.75	164.51	176.91	163.50	165.97	164.00	178.00	175.03	170.00	1.09	0.98
WH 926	WESTBRED 926	170.56	163.63	174.31	161.00	162.62	159.50	175.00	173.04	167.50	1.14	0.99
WBEXPRES	WESTBRED EXPRESS	172.34	165.88	175.07	163.50	163.34	164.50	178.00	173.55	169.80	0.98	0.96
*****	SITE MEAN *****	173.33	167.87	177.80	166.15	167.89	165.20	178.65	176.96	171.70	1.00	1.00

222

Table 4

## 1994 PLANT HEIGHT (INCHES) SUMMARY FOR THE ADVANCED SPRING WHEAT NURSERY GROWN ACROSS MONTANA

ID	PEDIGREE	HAVRE DRY	SIDNEY DRY	MOCCASI DRY	HUNTLE DRY	CONRAID DRY	SIDNEY IRR	HUNTLE IRR	BOZEMIA HIGH RAINFA.	KALISPELL HIGH RAINFA	AVG.	BYX	RSQ
BZ684-23	VANNA	28.20	31.69	23.15	29.50	30.00	33.42	32.50	28.92	36.43	30.40	1.03	0.93
BZ984326	BORDER	28.61	32.60	27.69	30.00	30.00	33.63	31.50	29.10	34.31	30.80	0.60	0.82
BZ990516	BZ990516	26.24	31.10	23.89	30.00	30.00	31.69	34.50	28.62	31.80	29.80	0.80	0.78
C982-324	RAMBO	25.67	30.88	22.53	29.50	31.00	31.93	30.00	29.40	32.31	29.20	0.88	0.94
CI 10003	THATCHER	34.82	41.14	24.84	40.50	36.00	42.57	45.00	39.43	47.02	39.00	1.78	0.90
CI 13596	FORTUNA	32.80	36.02	27.00	36.50	39.00	40.28	40.50	37.67	43.82	37.80	1.33	0.90
CI 17429	LEW	32.40	38.86	28.62	37.00	35.00	42.02	36.50	38.82	44.88	37.10	1.31	0.89
CI 17430	NEWANA	26.45	31.49	23.63	34.00	31.00	31.73	30.50	28.13	33.15	30.00	0.84	0.78
CI 17790	LEN	27.98	32.27	25.10	30.00	31.00	36.08	34.00	30.92	34.62	31.30	0.92	0.89
CI 17828	PONDERA	28.21	34.17	26.15	32.50	31.00	35.17	31.50	28.22	33.49	31.20	0.77	0.78
CI 17904	OWENS	29.02	31.86	25.60	35.50	30.00	33.39	31.50	29.23	34.72	31.20	0.76	0.73
MT 9209	MEXSEL2315/MT7736/MT7471	30.64	35.79	27.39	37.50	33.00	38.15	38.00	34.95	39.85	35.00	1.10	0.91
MT 9257	MT7810/MT8402	26.12	31.55	25.95	33.50	31.00	30.32	29.00	27.70	30.99	29.60	0.52	0.50
MT 9265	MT8452/MN73167	28.88	34.21	25.13	32.50	33.00	35.77	32.50	31.80	35.07	32.10	0.92	0.93
MT 9302	MT8313/CI115838/MT7418//P	28.71	32.20	28.87	34.50	32.00	32.90	34.50	31.66	36.16	32.40	0.62	0.73
MT 9303	MT8313/CI115838/MT7418//P	31.09	35.90	26.59	37.00	32.00	37.34	40.00	34.61	41.29	35.10	1.21	0.84
MT 9307	MT8339/3/FTA/NK715/BW559	32.47	36.89	28.19	35.00	36.00	38.62	30.50	36.37	44.03	35.30	1.08	0.66
MT 9309	MT7819(OLAF/LEW)	29.42	38.60	25.11	36.00	35.00	40.80	38.00	35.85	42.56	35.70	1.55	0.99
MT 9311	MT7819(OLAF/LEW)	28.92	35.17	24.81	31.50	33.00	36.40	32.50	33.08	37.55	32.50	1.08	0.94
MT 9313	MT7810/MT7926	28.46	36.10	22.26	31.50	33.00	37.06	37.00	33.74	39.08	33.10	1.45	0.95
MT 9315	MT7810/MT7926	28.53	35.96	24.20	31.50	34.00	37.23	35.50	34.76	39.98	33.50	1.33	0.95
MT 9321	MT7810/MT7926	29.64	37.30	24.54	31.50	36.00	39.42	31.00	33.83	41.41	33.80	1.36	0.82
MT 9322	MT7810/MT7926	30.71	37.14	25.79	32.50	35.00	37.49	33.50	35.17	40.35	34.20	1.15	0.90
MT 9323	MT7810/MT7926	31.13	36.90	24.10	34.50	37.00	37.67	34.00	35.41	36.89	34.20	1.12	0.83
MT 9324	MT7810/MT7926	31.46	35.73	25.87	33.50	36.00	37.51	34.00	34.55	41.05	34.40	1.14	0.91
MT 9325	MT7810/MT7926	30.60	36.58	27.54	33.50	38.00	38.15	37.50	34.91	40.66	35.50	1.12	0.93
MT 9327	MT7819(OLAF/LEW)	28.57	34.43	25.03	32.00	34.00	36.09	31.50	33.00	39.55	32.70	1.14	0.90
MT 9328	MT7810/MT7926	30.10	34.03	27.16	33.50	34.00	36.07	33.50	33.38	37.95	33.30	0.88	0.97
MT 9332	MT7810/MT7926	29.35	34.75	25.00	30.00	32.00	38.00	33.50	32.95	37.89	32.60	1.12	0.89
MT 9333	MT7810/MT7926	30.35	34.33	25.53	32.50	35.00	34.65	33.50	33.36	38.15	33.00	0.95	0.90
MT 9336	MT7810(SU73/LEW)	28.35	29.47	24.89	32.50	34.00	34.49	36.00	32.41	34.39	31.80	0.85	0.70
MT 9339	MT7810(SU73/LEW)	28.60	34.38	22.97	33.50	34.00	37.79	34.50	34.10	36.08	33.10	1.31	0.96
MT 9340	NEWANA/PND/MT8195	28.85	35.33	25.25	32.50	33.00	37.49	35.50	33.76	40.09	33.50	1.25	0.97
MT 9341	NEWANA/PND/MT8195	30.27	36.78	25.64	34.50	35.00	38.70	36.50	34.86	40.45	34.70	1.27	1.00
MT 9354	MT7810(SU73/LEW)	28.74	32.61	25.53	34.00	36.00	36.19	34.50	34.18	36.42	33.10	0.97	0.84
MT 9360	LEW/PND	29.68	34.60	25.89	35.50	31.00	35.77	35.50	31.07	38.95	33.10	1.08	0.90
MT 9373	LEW/PND	25.68	30.54	24.31	28.00	30.00	29.51	27.50	27.86	33.34	28.50	0.68	0.78
ND 582	STOA	33.13	17.91	30.86	39.50	36.00	39.76	41.00	36.42	42.50	37.50	1.01	0.86
ND 606	AMIDON	32.66	37.42	27.34	37.50	35.00	39.18	37.00	37.02	41.95	36.10	1.16	0.95
ND 677	ND622*2/CUTLESS	32.97	37.49	28.83	37.00	35.00	38.82	35.00	36.88	39.13	35.70	0.87	0.89
ND CUT	CUTLESS	30.21	33.39	24.98	34.50	33.00	35.32	37.50	32.53	39.57	33.40	1.14	0.90
P11986-61	WESTBRED 936	25.09	29.07	23.39	29.00	26.00	32.12	28.50	24.92	29.86	27.50	0.69	0.73
P1483235	GLENMAN	29.09	32.45	26.39	31.00	31.00	34.69	31.50	30.21	35.09	31.30	0.74	0.94
P1549275	HI-LINE	26.83	31.25	22.59	29.50	27.00	31.89	32.00	28.68	31.74	29.10	0.84	0.87
P1574642	MCNEAL	28.59	34.52	26.46	33.00	30.00	36.65	34.50	30.75	34.32	32.10	0.86	0.82
TR983279	FERGUS	27.60	32.28	25.98	30.50	32.00	32.37	30.50	28.04	32.13	30.20	0.60	0.78
WA 6920	PENAWAWA	25.27	32.23	22.97	28.50	28.00	33.21	33.50	25.77	33.66	29.20	1.04	0.81
WB 926	WESTBRED 926	27.59	31.84	25.49	30.50	29.00	31.32	33.00	27.34	31.11	29.70	0.59	0.70
WBEXPRES	WESTBRED EXPRESS	24.98	27.69	25.27	28.50	26.00	27.51	27.00	27.39	25.70	26.70	0.17	0.24
*****	SITE MEAN *****	29.18	34.22	25.56	33.07	32.73	35.80	34.05	32.32	37.25	32.70	1.00	1.00