PROJECT TITLE: Evaluation of winter and spring cereals under a no-till, re-crop environment at Moccasin.

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OBJECTIVES:
To evaluate the agronomic performance of winter wheat, spring wheat, durum, barley and oat varieties under no-till, re-crop conditions at Moccasin.

RESULTS:
The 1999 variety trials were planted no-till into barley stubble. Early season moisture helped the crops get off to a good start before drier weather conditions persisted. Hot, dry, windy conditions during grain fill contributed to lower yields and test weights of the spring crops.

Winter Wheat yields ranged from 30 to 53 bu/a on barley stubble with the average yield equal to 42 bu/a. Quantum 542 and Halt had the highest yields and both had test weights of 59 lbs/bu. Quantum 542, Neeley, Norstar, Tiber and Promontory had yields at or above their long-term yield averages, while 15 other selected varieties were below long-term averages. Wheat Streak Mosaic Virus was prevalent in this trial and severely stunted some plots. A stunting score was given for each variety and ranged from 0 to 6 (0=no stunting, 6=severe stunting). The current year's data and the multi-year summary data are presented in Tables 1 and 2.

Spring Wheat re-crop yields ranged from 29 to 42 bu/a with the average yield equal to 36 bu/a. Although the yields were not statistically different at the 5% level, McNeal was the top yielding variety followed by Westbred Express, Pioneer 2375, Amidon and MTHW9420. All varieties were within a couple of bushels of their long-term yield averages. Test weights were well below normal, averaging only 55 lbs/bu and proteins were average to above average. The current year's data and multi-year yield summary data are presented in Tables 3 and 4.

Durum re-crop yields ranged from 29 to 41 bu/a and averaged 34 bu/a. McNeal was the top yielding variety of the trial, however Utopia was the top yielding durum variety of the trial at 40 bu/a. A North Dakota experimental line, and Mountrail and Maier, two new North Dakota varieties, round out the top five yielding varieties/lines of the trial. Yields were fair considering Wheat Streak Mosaic Virus (WSMV) infection was present in the trial. Most durum varieties appeared to be more susceptible than spring wheat varieties. Each variety was rated on a zero to five scale, where zero means no infection was visible and five means severe yellowing of the leaves. Test weights were below normal averaging 57 lbs/bu. The multi-year summary now includes four years of data, and this year most varieties were below their long-term yield average. The current year's data and multi-year summary data are presented in Tables 5 and 6.

Barley re-crop yields were slightly above average (55 bu/a) and ranged from 50 to 60 bu/a. Gallatin was the top yielding variety followed by Lewis and Bowman at 58 bu/a. Valier ranked 7th in the trial (56 bu/a), although there were no significant differences among yields. Baronesse has the highest long-term yield average with 56 bu/a. Most varieties were above their long-term yield average. Test weights were normal, averaging 48 lbs/bu and ranging from 45 to 49 lbs/bu. Proteins were slightly above normal, averaging 13.7%. The current year's data and multi-year summary data are presented in Tables 7 and 8.

Oat yields ranged from 42 to 80 bu/a with the average equal to 67 bu/a. Rio Grande was the top yielding variety in this year's trial, while Monida has the high long-term yield average at 88 bu/a. In general, the overall yield of this year's nursery was below average. Test weights were below average as well, averaging 31 lbs/bu. There were four new entries in the trial. Three of the four new entries in this year's trial were very late maturing varieties and were green when harvested, hence contributing to the below average yields. The current year's data and multi-year summary data are presented in Tables 9 - 11.

SUMMARY:
Crop year moisture was approximately 2 inches below normal at the end of July, while temperatures during the growing season were average. Crop yields were average for the year, however test weights were below normal. Proteins, on average, were above normal. There were only 36 frost-free days at the Central Agricultural Research Center this summer. On July 16 the temperature reached 31°F. This may have hurt the test weights in the spring crops as well.

FUTURE PLANS:
No-till, re-crop variety trials will continue to be evaluated at the Central Agricultural Research Center.

Table 1. 1999 Moccasin Re-Crop Winter Wheat Variety Performance Trial - Exp. 3870. Central Agricultural Research Center. Moccasin, MT.

Variety	Grain Yield (bu/a)	Test Weight (lbs/bu)	Heading Date (Julian[1/])	Plant Height (in.)	Stunting Score[2/] (0-6)	Protein Content (%)
QUANTUM 542	52.7	58.8	167	33	1.7	12.7
HALT	49.3	58.8	163	27	3.0	12.6
MT9409	48.5	57.7	170	25	2.3	12.5
PROMONTORY	48.3	59.3	168	29	0.7	12.8
NEELEY	45.0	58.1	170	30	1.7	13.3
TIBER	44.8	58.4	170	31	2.7	13.2
REDWIN	44.2	58.1	171	31	3.7	13.7
PRONGHORN	43.6	59.8	163	31	1.0	12.9
ROCKY	43.3	59.1	165	30	3.0	13.3
JUDITH	43.2	56.7	167	29	4.0	13.5
MTS9720	42.9	55.4	172	29	4.3	14.0
MORGAN	42.4	57.4	171	28	1.3	13.5
BIGHORN	42.0	58.8	168	26	1.7	13.3
MT9524	41.5	58.5	170	30	4.3	13.4
NORSTAR	40.5	57.0	173	34	1.3	13.1
BIG SKY	38.8	58.3	170	30	4.3	13.6
NUWEST	38.7	56.3	170	29	4.7	13.5
ELKHORN	38.3	56.5	171	33	2.7	13.9
MTS9719	38.0	54.8	171	29	5.0	13.9
RAMPART	37.6	58.0	169	30	2.0	14.5
VANGUARD	37.5	58.0	167	30	2.3	14.4
MTW9441	37.1	55.3	170	27	5.0	13.6
MCGUIRE	31.6	57.7	166	30	4.7	15.2
ERHARDT	30.4	57.7	169	28	4.0	15.0
Experimental Mean	41.7	57.7	168.7	29.6	3.0	13.6
F-Value for Var. (df=23)	7.8**	28.3**	45.8**	6.0**	12.6**	-
CV1: (s/mean)*100	7.8	0.7	0.4	5.0	22.6	-
LSD (0.05)	5.3	0.7	1.1	2.4	1.1	-

1/ Number of days from Jan. 1 (165 = June 14)

2/ Trial was infected with Wheat Streak Mosaic Virus which caused noticeable stunting within the plots. A rating of 0, indicates no stunting and a rating of 6, indicates severe stunting, where the whole plot is stunted.

** Denotes Statistical Significance at P <= 0.01.

Planted: 9/23/1998

Harvested: 8/9/1999

Previous Crop: Barley

Fertilizer: 242 lbs/a of a 70-40-35 granular blend, pre-plant incorporated, 100# urea top-dressed on 3/25/99.

Growing Season Precipitation (April - July): 6.58" - 91 year avg.: 8.62".

Table 2. Moccasin Re-Crop Winter Wheat Multi-Year Yield Summary of Selected Varieties, 1993-1999. Central Agricultural Research Center. Moccasin, MT.

Selected Varieties	1993	1995	1996	1997	1998	1999	Avg.	Neeley Same Yrs.
				bu/a				
Neeley	44	33	31	69	47	45	44.8	-
Norstar	39	33	26	54	45	41	39.6	44.8
Rocky	40	39	34	73	50	43	46.6	44.8
Tiber	45	36	29	56	46	45	42.8	44.8
Judith	36	40	31	63	53	43	44.4	44.8
Quantum 542	38	30	30	66	52	53	44.8	44.8
Bighorn	35	40	28	65	48	42	43.0	44.8
NuWest		38	30	51	50	39	41.5	45.0
Kestrel	40	44	29	51	49		42.6	44.8
Erhardt		35	28	63	44	30	40.1	45.0
Vanguard		27	27	59	47	38	39.5	45.0
Rampart		36	27	55	48	38	40.7	45.0
McGuire		31	28	53	36	32	35.9	45.0
Promontory			29	61	50	48	47.1	48.0
Big Sky				65	47	39	50.3	53.7
Nursery Mean	**35.6**	**35.6**	**29.0**	**60.2**	**47.5**	**41.7**		

Table 3. 1999 Moccasin Re-Crop Spring Wheat Variety Trial - Exp. 9970. Central Agricultural Research Center. Moccasin, MT.

Id	Variety/Pedigree	Grain Yield (bu/a)	Test Weight (lbs/bu)	Heading Date (Julian)[1/]	Plant Height (in.)	Lodging Score (%)	WSMV Rating (0-5)	Plant Stand (%)	Protein Content (%)
PI574642	MCNEAL	41.6	54.4	188	31	0.033	0.17	90.0	15.5
WBEXPRES	WESTBRED EXPRESS	40.1	55.2	185	26	0.000	1.17	85.7	14.5
PNR 2375	PIONEER 2375	38.9	55.9	184	32	0.033	1.50	82.3	14.6
PI527682	AMIDON	38.5	55.6	188	36	0.000	0.83	91.3	14.3
MTHW9420	MT8182/MT8289	37.4	54.9	187	28	0.100	1.50	87.7	14.2
ND 694	PARSHALL	37.4	57.2	187	31	0.000	0.83	90.7	15.1
BZ987558	CONAN	36.6	56.7	186	29	0.000	1.17	89.7	14.7
WB 936	WESTBRED 936	36.5	54.6	185	27	0.067	1.50	87.3	15.2
CI 13596	FORTUNA	36.5	56.4	187	37	0.033	1.17	89.3	15.2
CI 17430	NEWANA	36.1	55.9	190	29	0.067	1.17	89.3	14.0
C982-324	RAMBO	35.8	56.5	187	30	0.000	1.83	90.0	15.0
MT 9433	SCHOLAR	35.1	57.0	189	34	0.000	1.50	85.3	15.2
CI 17429	LEW	35.0	57.0	191	36	0.000	1.17	90.3	15.4
WB 926	WESTBRED 926	33.8	55.4	184	29	0.000	1.33	81.7	15.1
TR983239	FERGUS	33.4	55.4	184	30	0.000	1.33	87.0	15.4
ND 695	REEDER	32.8	55.6	187	35	0.033	0.83	93.0	15.2
PI531005	GRANDIN	32.8	54.1	188	34	0.067	1.17	92.0	15.5
PI549275	HI-LINE	31.2	54.6	186	29	0.067	1.00	85.0	15.6
PI592761	ERNEST	30.4	54.8	189	34	0.000	1.50	87.7	16.4
MTHW9701	CYMMIT204//MT8182/FORTUNA	29.2	50.5	188	27	0.000	1.67	84.3	16.2
Experimental Mean		35.5	55.4	186.9	31.1	0.025	1.22	88.0	15.1
CV1: (s/mean)*100		11.8	1.6	0.6	3.1	227.0	26.3	3.6	-
F-Test for Var. (df=19)		1.8	8.3	10.5	36.3	1.0	4.0	3.0	-
P-Value		0.067	0.000	0.000	0.000	0.515	0.000	0.002	-
LSD (0.05)		6.9	1.5	1.7	1.6	0.2	0.5	5.2	-

1/ Number of days from Jan. 1 (185 = July 4). **Planted**: 4/21/1999 **Harvested**: 8/24/1999

Fertilizer: 242 lbs/a of a 70-45-35 applied and incorporated 9/16/1998, 100 # urea, and 100lbs/a ammonium sulfate (20-0-0-24) broadcast 6/18/1999 in response to yellowing leaves which were suspected to be a sulfate deficiency or WSMV infection. It turned out to be the later.

Growing Season Precipitation (April - July): 6.58" - 91 year avg: 8.62".

Table 4. Moccasin Re-Crop Spring Wheat Multi-Year Yield Summary of Selected Varieties, 1992-1999. Central Agricultural Research Center. Moccasin, MT.

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	Avg.	McNeal SameYrs.
					bu/a					
McNeal	39	52	22	45	24	63	37	42	40.4	-
Amidon	35	55	23	40	22	52	34	39	37.5	40.4
Westbred 926	29	51	23	42	23	58	36	34	37.0	40.4
Grandin	30	54	20	40	20	52	35	33	35.5	40.4
Fortuna	27	44	24	35	22	48	33	37	33.6	40.4
Rambo	34	43	23	39	21	55	33	36	35.4	40.4
Lew	34	46	20	36	19	52	35	35	34.7	40.4
Newana	35	48	25	47	23	49	35	36	37.3	40.4
Hi-Line	29	49	21	39	22	57	35	31	35.4	40.4
Ernest			21	40	20	48	34	30	32.3	38.7
Fergus				41	20	56	34	33	36.8	42.0
WB Express				39	23	57	34	40	38.6	42.0
Westbred 936				43	23	53	34	37	37.9	42.0
Pioneer 2375				40	23	56	36	39	38.7	42.0
Scholar					24	51	33	35	35.7	41.3
MTHW 9420					23	66	38	37	41.0	41.3
Nursery Mean	**31.1**	**48.1**	**22.4**	**40.4**	**21.9**	**54.8**	**34.5**	**35.5**		

Table 5. 1999 Moccasin Re-Crop Durum Variety Trial - Exp. 9807. Central Agricultural Research Center. Moccasin, MT.

Id	Variety/Pedigree	Grain Yield (bu/a)	Test Weight (lbs/bu)	Heading Date (Julian)[1/]	Plant Height (in.)	Lodging Score (%)	WSMV Rating (0-5)	Plant Stand (%)	Protein Content (%)
PI574642	MCNEAL[2/]	40.9	54.4	188	30	0.033	0.50	92.7	14.4
97DU2	UTOPIA (NW CONSORTIUM)	40.1	57.5	183	26	0.000	1.00	92.0	14.8
D901442	MUNICH/D8469	39.3	59.7	187	33	0.067	2.83	92.3	14.9
D901313	Mountrail	36.0	56.5	188	32	0.000	1.83	89.3	14.2
D89135	Maier	35.9	58.6	187	30	0.067	2.33	93.0	14.1
D91080	DT606/D8291	35.6	56.7	187	27	0.000	2.33	93.0	14.7
PH894401	LAKER/WESTBRED881	35.2	59.3	182	28	0.000	3.00	87.0	15.0
NDBELZER	Belzer	34.7	55.7	187	34	0.000	2.50	89.0	14.8
CANPLENT	PLENTY	34.2	57.8	188	37	0.433	2.50	90.3	14.3
PI510696	RENVILLE	34.0	56.6	187	34	0.000	2.00	90.0	14.6
WPBLAKER	LAKER	33.9	48.2	188	29	0.000	3.00	86.3	14.0
NDMUNICH	Munich	33.7	56.2	185	29	0.000	1.67	87.7	15.3
DT 380	SCEPTRE	33.1	56.3	187	35	0.000	1.67	90.0	15.4
PI476211	LLOYD	32.7	54.5	189	26	0.000	3.33	89.3	15.3
D87130	BEN	31.8	57.3	187	34	0.000	2.17	90.7	15.4
CI 15892	WARD	31.8	57.5	185	36	0.033	1.83	89.3	16.2
CANKYLE	KYLE	31.6	57.8	189	37	0.033	3.17	90.7	14.9
DT 433	MEDORA	31.2	57.9	186	37	0.033	2.33	89.3	16.2
CI 17789	VIC	31.2	57.9	187	37	0.000	2.33	88.0	15.8
D3100	COMMAND	30.9	59.1	186	28	0.033	3.50	91.0	16.1
PI478289	MONROE	30.9	56.5	182	35	0.067	2.50	81.0	15.8
CI 17282	CROSBY	29.0	55.4	185	35	0.033	1.67	91.0	16.6
Experimental Mean		34.0	56.7	186.4	32.2	0.038	2.27	89.7	15.1
CV1: (s/mean)*100		8.9	6.7	0.5	4.2	288.8	20.8	4.2	-
F-Test for Var. (df=21)		3.2	1.2	13.4	22.5	2.1	7.2	1.5	-
P-Value		0.001	0.344	0.000	0.000	0.020	0.000	0.120	-
LSD (0.05)		5.0	6.3	1.5	2.2	0.18	0.78	6.2	-

1/ Number of days from Jan. 1 (185 = July 4).

2/ McNeal is used as a hard red spring wheat check.

Planted: 4/21/1999

Harvested: 8/24/1999

Fertilizer: 242 lbs/a of a 70-45-35 applied and incorporated 9/16/1998, 100 # urea pre-plant incorporated, and 100lbs/a ammonium sulfate (20-0-0-24) broadcast 6/18/1999 in response to yellowing leaves which were suspected to be a sulfate deficiency or WSMV infection. It turned out to be the later.

Growing Season Precipitation (April - July): 6.58" - 91 year avg: 8.62"

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Table 6. Moccasin Re-Crop Durum Multi-Year Yield Summary of Selected Varieties, 1996-1999. Central Agricultural Research Center. Moccasin, MT.

Selected Varieties	1996	1997	1998	1999	Avg.
			bu/a		
Lloyd	24	54	32	33	35.7
Monroe	23	56	33	31	35.7
Laker	23	50	34	34	35.2
Medora	23	51	29	31	33.6
Ben	23	53	33	32	35.2
Renville	22	59	29	34	36.0
Ward	22	50	27	32	32.7
Kyle	21	56	31	32	34.9
Vic	21	58	35	31	36.3
Plenty	20	56	32	34	35.6
Munich	20	57	33	34	35.9
Crosby	20	57	30	29	34.0
Sceptre			33	33	33.1
McNeal[1/]	24	65	32	41	40.5
Nursery Mean	**21.8**	**55.0**	**31.4**	**34.0**	

1/ McNeal is used as a hard red spring wheat check.

Table 7. 1999 Moccasin Re-Crop Barley Variety Trial - Exp. 3670. Central Agricultural Research Center. Moccasin, MT.

Id	Variety/Pedigree	Grain Yield (bu/a)	Test Weight (lbs/bu)	Heading Date (Julian)[1/]	Plant Height (in.)	Lodging Index (%)	Plump (%)[2/]	Thin (%)[3/]	Protein Content (%)
PI491534	GALLATIN	60.1	48.9	184	31	0.00	37.7	30.5	12.7
CI 15856	LEWIS	58.1	48.7	186	30	0.08	41.1	29.2	13.0
PI483237	BOWMAN	57.8	49.8	179	28	0.05	65.7	14.1	13.3
MT960228	MT960228	57.3	47.1	186	28	0.00	45.7	24.9	12.7
MTLB 6	MTLB 6	57.2	48.6	185	28	0.00	41.4	24.3	13.8
CI 15514	HECTOR	56.8	48.1	185	29	0.20	33.4	37.1	13.0
MTLB 30	VALIER	56.1	48.1	187	29	0.00	32.0	28.9	14.1
MT920073	MT920073	55.2	47.9	184	27	0.00	63.5	13.5	13.6
MTLB 13	MTLB 13	55.0	46.6	186	26	0.00	28.8	33.4	13.8
PI568246	BARONESSE	54.2	46.0	186	25	0.00	34.9	33.3	13.7
MT950186	MT950186	53.3	48.9	185	27	0.02	48.7	21.6	13.7
BZ594-19	WPB XENA	52.8	45.5	188	28	0.00	5.5	61.4	14.3
MTLB 5	MTLB 5	52.4	46.6	186	29	0.00	17.1	43.0	15.3
PI591823	CHINOOK	51.8	47.8	186	29	0.00	24.6	39.9	14.4
ND 9866	STARK	50.8	48.5	182	29	0.25	51.4	21.5	13.6
SK 76333	HARRINGTON	49.8	44.9	187	28	0.10	33.8	33.2	13.9
Experimental Mean		54.9	47.6	185.2	28.2	0.044	37.8	30.6	13.7
CV1: (s/mean)*100		10.8	3.2	0.5	4.3	287.5	38.1	37.1	-
F-Test for Var. (df=15)		0.7	2.4	16.2	3.6	1.2	3.5	3.2	-
P-Value		0.738	0.018	0.000	0.001	0.363	0.002	0.003	-
LSD (0.05)		9.9	2.5	1.6	2.0	0.2	24.0	18.9	-

1/ Number of days from Jan. 1 (180 = June 29). 2/ Plump > 6/64 3/ Thin < 5.5/64

Planted: 4/21/1999

Harvested: 8/18/1999

Fertilizer: 242 lbs/a of a 70-45-35 applied and incorporated 9/16/1998, 100 # urea (3/251999), and 100lbs/a ammonium sulfate (20-0-0-24) broadcast 6/18/1999.

Growing Season Precipitation (April - July): 6.58" - 91 year avg: 8.62"

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Table 8. Moccasin Re-Crop Barley Multi-Year Yield Summary of Selected Varieties, 1992-1999. Central Agricultural Research Center. Moccasin, MT.

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	Avg.	Hector Same Years
					bu/a					
Hector	58	66	47	66	30	69	43	57	54.5	-
Harrington	45	62	44	65	31	71	36	50	50.5	54.5
Lewis	55	66	44	58	33	76	37	58	53.4	54.5
Bowman	56	62	35[1/]	63	33	64	39	58	51.2	54.5
Gallatin	53	58	48	56	30	67	39	60	51.4	54.5
Chinook	48	68	40	68	28	73	43	52	52.5	54.5
Stark	58	60	38	58	32	70	42	51	51.1	54.5
Baronesse	59	76	44	63	33	73	44	54	55.8	54.5
WPB Xena								53	52.8	56.8
Valier								56	56.1	56.8
Nursery Mean	**52.6**	**64.3**	**42.1**	**63.5**	**30.6**	**71.7**	**41.8**	**54.9**		

1/ Bowman experience animal damage in the 1994 trial.

Table 9. 1999 Montana Spring Oat Statewide Nursery - Exp. 0407. Central Agricultural Research Center. Moccasin, MT.

Id	Variety/Pedigree	Grain Yield (bu/a)[1/]	Grain Yield (lbs/a)	Test Weight (lbs/bu)	Heading Date (Julian)[2/]	Plant Height (in.)	Lodging Index (%)	Protein Content (%)
81Ab5792	Rio Grande	79.6	2547	27.5	183	27	0.00	13.2
ABSP 9-2	83/Ab3119/Monida	76.7	2455	30.1	188	29	0.00	13.1
87AB5125	Ogle/75Ab861	76.5	2449	28.1	188	26	0.00	12.9
PRAIRIE	Prairie	75.7	2422	28.9	181	28	0.00	13.4
ABSP19-9	83Ab3083/Monida	74.9	2397	28.9	191	29	0.00	13.0
CI 9252	Otana	74.1	2372	32.8	189	33	0.00	13.3
83AB3250	Powell	71.3	2282	25.9	190	25	0.00	13.1
CI483126	Monida	70.3	2249	27.4	189	30	2.02	12.4
ND870258	Whitestone	70.2	2248	27.3	188	29	0.68	13.2
90Ab1322	80Ab1322/Monida	69.2	2217	28.7	188	23	0.00	13.1
82Ab1142	Ajay	68.2	2184	28.0	186	22	0.00	13.7
ND860416	Otana/Valley	67.4	2158	31.7	187	30	0.00	12.6
CELSIA	Celsia	67.1	2146	27.9	190	30	0.05	12.5
88Ab3073	Pennlo/PI 447276[3/]	45.7	1462	41.6	191	27	0.00	18.9
86AB1616	86Ab1616[3/]	45.3	1449	36.7	193	27	0.00	16.3
ND862915	Paul[3/]	41.9	1340	39.8	192	34	0.00	17.9
Experimental Mean		67.1	2149	30.7	188.4	28.1	0.17	13.9
CV1: (s/mean)*100		7.1	7.1	3.5	0.4	5.4	159.0	-
F-Test for Var. (df=15)		19.0	19.0	58.6	42.5	13.5	10.9	-
P-Value		0.000	0.000	0.000	0.000	0.000	0.000	-
LSD (0.05)		7.9	252.8	1.8	1.4	2.5	0.5	-

1/ Oat grain yield (bu/a) is based on 32 lb/bu as the standard test weight.
2/ Number of days from Jan. 1 (185 = July 4).
3/ Late maturing varieties that were not ripe when harvested, hence the lower yields.
Planted: 4/21/1999
Harvested: 8/18/1999
Fertilizer: 242 lbs/a of a 70-45-35 applied and incorporated 9/16/1998, 100 # urea (3/251999), and 100lbs/a ammonium sulfate (20-0-0-24) broadcast 6/18/1999.
Growing Season Precipitation (April - July): 6.58" - 91 year avg. 8.62"

Table 10. Moccasin Re-Crop Spring Oat Multi-Year Yield Summary of Selected Varieties, 1992-1999. Central Agricultural Research Center. Moccasin, MT.

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	Avg	Otana Same Years
					lbs/a					
Otana	3521	2917	1838	3402	2102	3262	2507	2372	2740	-
Rio Grande	3318	3098	1860	3405	2211	3156	2084	2547	2710	2740
Ajay	3295	2378	1483	3322	1846	2978	2031	2184	2440	2740
Monida	3728	3251	1809	3360	1850	3570	2827	2249	2831	2740
90Ab1322			1935	3366	2016	3682	2516	2217	2622	2581
Whitestone				3373	1850	3519	2515	2248	2701	2729
Powell				3101	1962	3382	2316	2282	2609	2729
ND860416					1990	3591	2812	2158	2638	2561
CELSIA				3152		3119	2288	2146	2676	2886
PRAIRIE						3077	2264	2422	2588	2714
87AB5125						3415	2236	2449	2700	2714
ABSP 9-2						3556	1983	2455	2665	2714
Nursery Mean	**3426**	**2800**	**1926**	**3041**	**1799**	**3396**	**2361**	**2149**		

Table 11. Moccasin Re-Crop Spring Oat Multi-Year Test Weight Summary of Selected Varieties, 1992-1999. Central Agricultural Research Center. Moccasin, MT.

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	Avg	Otana Same Years
					lbs/bu					
Otana	36.8	31.1	37.1	35.5	35.4	39.3	39.0	32.8	35.9	-
Rio Grande	38.0	32.3	35.3	35.8	31.3	36.3	35.5	27.5	34.0	35.9
Ajay	37.8	30.5	33.7	36.6	33.9	37.4	37.6	28.0	34.4	35.9
Monida	36.0	31.3	35.4	33.1	31.5	37.9	36.5	27.4	33.6	35.9
90Ab1322			36.1	34.8	30.4	38.5	37.6	28.7	34.4	36.5
Whitestone				34.9	34.3	37.8	37.8	27.3	34.4	36.4
Powell				32.1	30.5	35.7	34.6	25.9	31.8	36.4
ND860416					37.1	38.8	39.0	31.7	36.7	36.6
CELSIA				35.5		36.2	36.5	27.9	34.0	36.7
PRAIRIE						35.0	36.0	28.9	33.3	37.0
87AB5125						37.2	38.2	28.1	34.5	37.0
ABSP 9-2						38.4	36.4	30.1	35.0	37.0
Nursery Mean	**36.1**	**31.8**	**35.6**	**34.5**	**34.7**	**37.4**	**37.0**	**30.7**		