

PROJECT TITLE: Statewide Spring Oat Variety Performance Trial

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OBJECTIVES:
To evaluate the agronomic performance of new experimental lines and existing oat varieties in Central Montana.

RESULTS:
Grain yields averaged 85.9 bu/a with Rio Grande obtaining the highest yield at 96.6 bu/a (Table 59). Test weights ranged from 29 to 36.4 lbs/bu with the average test weight for the nursery being 33.6 lbs/bu. Grain protein averaged 15.4 percent while several entries were 18 and 19 percent. Heading date averaged 183 days with Monida heading 10 days later than Killdeer.

SUMMARY:
Yields were generally just below or above the long-term averages. Moisture received in May and June promoted good plant growth and good filling of heads. Test weights were average to above average. Long-term yields, test weight, and protein summaries are presented in Tables 60-62.

FUTURE PLANS:
The statewide spring oat variety trial will continue to be evaluated at the Central Agricultural Research Center.

Table 59. Statewide spring oat variety performance trial.
Exp. 0407 Central Agricultural Research Center - Moccasin, MT

Pedigree	Heading Date*	Plant Height	Lodging Prevalence**	Lodging Severity***	Grain Yield	Grain Yield	Test Weight	Grain Protein
	day	inches	%	degree	bu/a	lbs/a	lbs/bu	%
Rio Grande	182	31	6	32	96.6	3090	30.9	19.0
87Ab5125	189	30	0	0	95.8	3065	32.7	14.3
Killdeer	180	31	57	63	92.8	2970	35.0	15.8
ABSP19-9	183	28	3	10	90.3	2888	34.3	14.7
ABSP9-2	182	30	57	60	88.7	2840	34.4	14.3
Whitestone	182	32	27	50	86.6	2771	34.7	13.2
90Ab1322	182	27	0	0	84.9	2715	29.0	13.7
87Ab4983	182	28	0	0	84.4	2700	36.4	13.5
Monida	190	27	50	60	83.5	2672	32.2	16.6
89Ab4088	182	31	0	0	82.5	2638	35.7	18.5
CDCPacer	182	32	28	65	80.5	2577	34.8	15.0
Ajay	182	26	0	0	80.0	2559	30.6	10.9
Celsia	187	27	52	70	79.3	2539	33.4	19.3
Otana	181	32	37	55	76.9	2460	35.5	16.3
Average	183.3	29.4	22.6	33.2	85.9	2749.0	33.6	15.4
CV (s/mean) %		14.2	54.3	28.6	10.3	10.3	5.0	
LSD (0.05)		ns	20.5	15.9	ns	472.3	2.8	

* Heading date is days from January 1, 2001

** Lodging prevalence is the percentage of plot that is lodged and ranges from 0-100

*** Lodging severity is angle of lodging from vertical measured in degrees; 0=vertical, 90=horizontal

Seeded: 4/18/01

Fertilizer: 50 lbs of 20-20-0 placed with the seed and 67 lbs of N broadcast applied in fall of 2000.

Previous Crop: Fallow

Soil Moisture: Good; soil moisture recharged after fallow

Emergence: 2 leaf on May 4, 2001

Precipitation: 7.29 inches

Weed Control: none

Harvested: August 13, 2001

Table 60. Moccasin spring oat multi-year yield summary of selected varieties.
Exp. 0407 Central Agricultural Research Center, Moccasin, MT.

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	2001	Average	Otana Same Yrs
	----- lbs/a -----										
Otana	3521	2917	1838	3402	2102	3262	2507	2372	2460	2709	-
Rio Grande	3318	3098	1860	3405	2211	3156	2084	2547	3090	2752	2709
Ajay	3295	2378	1483	3322	1846	2978	2031	2184	2559	2453	2709
Monida	3728	3251	1809	3360	1850	3570	2827	2249	2672	2813	2709
90AB1322			1935	3366	2016	3682	2516	2217	2715	2635	2563
Whitestone				3373	1850	3519	2515	2248	2771	2713	2684
Powell				3101	1962	3382	2316	2282	-	2609	2684
ND860416					1990	3591	2812	2158	-	2638	2541
Celsia				3152		3119	2288	2146	2539	2649	2684
Prairie						3077	2264	2422	-	2588	2650
87AB5125						3415	2236	2449	3065	2791	2650
ABSP9-2						3556	1983	2455	2840	2709	2650
Nursery Mean	3426	2800	1926	3041	1799	3396	2361	2149	2749		

Table 61. Moccasin spring oat multi-year test weight summary of selected varieties.
Exp. 0407 Central Agricultural Research Center, Moccasin, MT.

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	2001	Average	Otana Same Yrs
	----- lbs/bu -----										
Otana	36.8	31.1	37.1	35.5	35.4	39.3	39.0	32.8	35.5	35.8	-
Rio Grande	38.0	32.3	35.3	35.8	31.3	36.3	35.5	27.5	30.9	33.7	35.8
Ajay	37.8	30.5	33.7	36.6	33.9	37.4	37.6	28.0	30.6	34.0	35.8
Monida	36.0	31.3	35.4	33.1	31.5	37.9	36.5	27.4	32.2	33.5	35.8
90AB1322			36.1	34.8	30.4	38.5	37.6	28.7	29.0	33.6	36.4
Whitestone				34.9	34.3	37.8	37.8	27.3	34.7	34.5	36.3
Powell				32.1	30.5	35.7	34.6	25.9	-	31.8	36.3
ND860416					37.1	38.8	39.0	31.7	-	36.7	36.4
Celsia				35.5		36.2	36.5	27.9	33.4	33.9	36.3
Prairie						35.0	36.0	28.9	-	33.3	36.7
87AB5125						37.2	38.2	28.1	32.7	34.1	36.7
ABSP9-2						38.4	36.4	30.1	34.4	34.8	36.7
Nursery Mean	36.1	31.8	35.6	34.5	34.7	37.4	37.0	30.7	33.6		

Table 62. Moccasin spring oat multi-year protein summary of selected varieties.
 Exp. 0407 Central Agricultural Research Center, Moccasin, MT.

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	2001	Average	Otana Same Yrs
Otana							10.0	13.3	16.3	13.2	-
Rio Grande							11.5	13.2	19.0	14.6	13.2
Ajay							12.0	13.7	10.9	12.2	13.2
Monida							10.0	12.4	16.6	13.0	13.2
90AB1322							11.5	13.1	13.7	12.8	13.2
Whitestone							10.8	13.2	13.2	12.4	13.2
Powell							11.6	13.1	-	12.4	13.2
ND860416							10.3	12.6	-	11.5	13.2
Celsia							10.7	12.5	19.3	14.2	13.2
Prairie							11.4	13.4	-	12.4	13.2
87AB5125							11.0	12.9	14.3	12.7	13.2
ABSP9-2							11.5	13.1	14.3	13.0	13.2
Nursery Mean							10.9	13.9	15.4	13.4	