

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:

The oat grain nursery was sprayed twice for insects, once for cutworms in May and once for grasshoppers in July. The alleys surrounding the cereal forage were sprayed with Sevin for grasshopper control. The oat for grain was harvested on the damp side due to hail risk concerns.

The forage variety trial was harvested on one date. The cost of harvesting by growth stage is too much for resources available. Test line 95A10854 had the highest dry matter yield at 1.755 t/a under no-till recrop conditions (Table 52). Ajay had the lowest forage yield at 1.378 t/a.

Otana topped the grain yield trial at 1811 lbs of grain per acre followed closely by 87AB5632, CDC Pacer and Monida (Table 52). CDC Dancer had the highest test weight at 35.7 lbs/bu.

Multi-year yield, test weight and protein content summaries are presented in tables 53, 54 and 55, respectively.

SUMMARY:

Oat yields were down due to moisture stress, grasshopper defoliation and wind shatter. Several new lines had good to excellent performance in 2002.

FUTURE PLANS:

The statewide spring oat variety trial will continue to be evaluated at the Central Agricultural Research Center in Moccasin, Montana.

Table 52 2002 Spring oat grain forage variety (SW3 Recrop) trial and grain variety (NW8 fallow) trial
Exp. 0407 Central Agricultural Research Center. Moccasin, Montana.

ID number	Variety	Plant	Heading	--- Dry Matter ---		Plant	Heading	Grain	Grain	Grain
		Height	Date	Content	Yield	Height	Date	Yield	Testwt	Protein
		"	d of Y		t/a	"	d of y	lbs/a	lbs/bu	% dry
CI 9252	Otana	22.7	187	0.297	1.587	32.5	187	1811	34.8	17.5
87AB5632	Monida/75Ab861	21.3	186	0.303	1.450	26.7	187	1797	32.0	15.4
OT351	CDC Pacer	24.3	186	0.285	1.641	31.5	186	1734	33.3	15.6
CI483126	Monida	20.3	188	0.336	1.658	27.9	188	1706	32.6	16.1
ABSP14-6	83Ab3119/Monida	21.3	184	0.326	1.670	27.6	187	1665	32.5	16.3
ABSP19-9	83Ab3083/Monida	20.3	188	0.319	1.497	25.5	188	1661	34.5	16.6
PI591810	Whitestone(ND870258)	21.7	186	0.295	1.602	26.3	187	1645	34.0	17.8
ND930122	Killdeer	22.3	183	0.289	1.565	28.5	184	1639	35.3	17.7
Monico	ABSP 9-2 (83Ab3119/Monida)	20.0	184	0.320	1.471	26.3	186	1588	34.1	15.3
OT373	CDC Dancer	23.7	184	0.311	1.652	30.0	187	1548	35.7	15.0
94AB5543	83Ab3119/86Ab1867A	20.3	188	0.316	1.474	25.6	188	1548	33.6	16.8
95A10854	(95Ab10854) 84Ab835/Monida	20.3	190	0.315	1.755	25.9	191	1521	33.3	16.7
Maverick	90Ab1322	18.7	188	0.304	1.514	22.4	188	1484	33.6	16.4
PI583735	Celsia	22.0	189	0.281	1.465	29.1	189	1483	32.9	15.9
81Ab5792	Rio Grande	20.3	182	0.340	1.565	25.5	184	1434	33.1	16.8
PI537436	Ajay	17.3	187	0.326	1.378	19.3	188	1145	33.7	18.9
OVERALL MEAN		21.1	186.2	0.310	1.559	26.9	187.2	1588	33.68	16.6
F-RATIO TRTS		10.64	44.68		4.142	28.45	73.89	1.999ns	3.845	
P-VALUE TRTS		0	0		0.0004	0	0	0.0495	0.0007	
CV (S/MEAN) %		4.438	0.3126		5.516	3.895	0.1825	12.53	2.696	
LSD(0.05 by t		1.56	0.9707		0.1434	1.75	0.5696	331.8	1.514	

* Heading date is days from January 1, 2002

Date Seeded:
Harvest Date:
Fertilizer:

--- **0470 SW3** ---
April 17, 2002
July 11, 2002
50 lbs of 20-20-20-10 w/seed
45 lbs N top dressed

Previous Crop:
Soil Moisture:
Soil Temperature:
Herbicide and Insecticide:

Barley
14-16"
46.4 F
Bronate

--- **0407 NW8** ---
April 16, 2002
August 15, 2002
50 lbs of 20-20-20-10 w/seed
30 lbs N top dressed

Fallow
18-21"
50 F
Bronate, Warrior, Sevin

Growing Season Precipitation (April-July): 7.49"

Growing Season Precip. 94 yr avg: 8.62"

Table 53 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	2002	Average	Otana Same Yrs
	----- lbs/a -----											
Otana	3521	2917	1838	3402	2102	3262	2507	2372	2460	1811	2619.2	-
Rio Grande	3318	3098	1860	3405	2211	3156	2084	2547	3090	1434	2620.3	2619.2
Ajay	3295	2378	1483	3322	1846	2978	2031	2184	2559	1145	2322.1	2619.2
Monida	3728	3251	1809	3360	1850	3570	2827	2249	2672	1706	2702.2	2619.2
Maverick (90AB1322)			1935	3366	2016	3682	2516	2217	2715	1484	2491.4	2469.3
Whitestone				3373	1850	3519	2515	2248	2771	1645	2560.1	2559.4
Powell				3101	1962	3382	2316	2282	--	--	2608.6	2729.0
ND860416					1990	3591	2812	2158	--	--	2637.8	2560.8
Celsia				3152	--	3119	2288	2146	2539	1483	2454.5	2635.7
Prairie						3077	2264	2422	--	--	2587.7	2713.7
87AB5125						3415	2236	2449	3065	--	2791.3	2650.3
Monico (ABSP 9-2)						3556	1983	2455	2840	1588	2484.4	2482.4
Nursery Mean	3426.0	2800.0	1926.0	3041.0	1799.0	3396.0	2361.0	2149.0	2749.0	1588.1	2523.5	

Table 54
Exp. 0407

Moccasin spring oat multi-year test weight summary of selected varieties
Central Agricultural Research Center, Moccasin, MT

Selected Varieties	1992	1993	1994	1995	1996	1997	1998	1999	2001	2002	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	34.8	35.73	-
Rio Grande	38.0	32.3	35.3	35.8	31.3	36.3	35.5	27.5	30.9	33.1	33.60	35.73
Ajay	37.8	30.5	33.7	36.6	33.9	37.4	37.6	28.0	30.6	33.7	33.98	35.73
Monida	36.0	31.3	35.4	33.1	31.5	37.9	36.5	27.4	32.2	32.6	33.39	35.73
Maverick (90AB1322)			36.1	34.8	30.4	38.5	37.6	28.7	29.0	33.6	33.58	36.17
Whitestone				34.9	34.3	37.8	37.8	27.3	34.7	34.0	34.40	36.04
Powell				32.1	30.5	35.7	34.6	25.9	--	--	31.76	36.40
ND860416					37.1	38.8	39.0	31.7	--	--	36.65	36.63
Celsia				35.5	--	36.2	36.5	27.9	33.4	32.9	33.73	36.15
Prairie						35.0	36.0	28.9	--	--	33.30	37.03
87AB5125						37.2	38.2	28.1	32.7	--	34.05	36.65
Monico (ABSP 9-2)						38.4	36.4	30.1	34.4	34.1	34.68	36.27
Nursery Mean	36.1	31.8	35.6	34.5	34.7	37.4	37.0	30.7	33.6	33.7	34.5	

Table 55
Exp. 0407

Moccasin spring oat multi-year protein summary of selected varieties
Central Agricultural Research Center, Moccasin, MT

Selected Varieties	1998	1999	2001	2002	Average	Otana Same Yrs
	----- % -----					
Otana	10.0	13.3	16.3	17.5	14.28	--
Rio Grande	11.5	13.2	19.0	16.8	15.13	14.28
Ajay	12.0	13.7	10.9	18.9	13.88	14.28
Monida	10.0	12.4	16.6	16.1	13.78	14.28
Maverick (90AB1322)	11.5	13.1	13.7	16.4	13.68	14.28
Whitestone	10.8	13.2	13.2	17.8	13.75	14.28
Powell	11.6	13.1	--	--	12.35	11.65
ND860416	10.3	12.6	--	--	11.45	11.65
Celsia	10.7	12.5	19.3	15.9	14.60	14.28
Prairie	11.4	13.4	--	--	12.40	11.65
87AB5125	11.0	12.9	14.3	--	12.73	13.20
Monico (ABSP 9-2)	11.5	13.1	14.3	15.3	13.55	14.28
Nursery Mean	10.9	13.9	15.4	16.6	14.2	

