

PROJECT TITLE: 1994 Montana Spring Oat Performance Trial

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OBJECTIVES: To determine the adaptability of new and introduced oat varieties to Montana. The Montana Spring Oat Nursery is grown throughout Montana in several locations under, irrigation, high moisture, or dryland conditions.

RESULTS: Tables 1 through 4 give the data for the dryland trials. Rio Grande (80.7 bu/a) was the highest yielding cultivar (Table 1.). Settler (38.6 lb/bu) had the highest test weight (Table 2.). Derby (33.2 in.) was the tallest cultivar, while Ajay (21.9 in.) was the shortest (Table 3.). Monida (174.7 days from 1/1) was the latest heading cultivar, while Ogle, NewDak and Settler (168.1) were the earliest (Table 4).

The irrigated trials are described in Tables 5 through 8. Monida (193.7 bu/a) was the highest yielding (Table 5). Otana and Valley (39.2 lb/bu) had the highest test weights (Table 6). Otana (43.9 in.) was the tallest, with Ajay (31.6 in.) again the shortest (Table 7). Appaloosa and Border (173.1 days from 1/1) were the latest heading, while Settler (167.5) was the earliest (Table 8).

SUMMARY: Dryland yields were good averaging 72 bu/a, with 35.7 lb.bu average test weights. Irrigated yields were quite good averaging 171 bu/a, with an average 37.3 lb/bu test weight. The semi-dwarf cultivar Ajay was the shortest overall on both dry and irrigated (21.9 and 31.6 respectively).

FUTURE PLANS: Variety evaluation will continue in the future, to provide producers with pertinent information on cultivar adaptability to their areas conditions.

Table 1.
1994 SPRING OAT STATEWIDE DRYLAND SUMMARY

YIELD (bu/ac)

ID	Pedigree	Havre	Sidney	Sidney Recrop	Moccasin	Grass Range	Huntley	Mean	BYX	RSQ
81AB5792	Rio Grande	88.50	129.70	78.13	58.13	31.13	98.56	80.7	1.16	0.97
82AB1142	Ajay	69.83	127.00	62.70	46.33	23.47	77.30	67.8	1.16	0.93
90AB1322	80Ab988/Monida	77.17	100.07	78.90	60.47	28.53	76.20	70.2	0.79	0.90
CI 6611	Park	75.00	102.07	66.37	60.40	23.63	70.62	66.3	0.86	0.96
CI 8263	Cavuse	92.67	109.33	61.70	72.63	27.83	89.68	75.6	0.97	0.95
CI 9252	Otana	88.47	115.47	62.90	57.43	24.53	88.95	73.0	1.09	0.99
CI 9297	Appaloosa	87.90	122.53	60.27	55.50	27.83	91.42	74.2	1.14	0.98
CI 9401	Ogle	85.17	112.67	72.20	66.93	26.33	89.36	75.4	0.99	0.98
CI467882	Border	85.23	145.10	63.37	60.97	24.77	89.54	78.2	1.36	0.96
CI483126	Monida	85.03	131.23	64.50	56.53	26.77	96.58	76.8	1.23	0.97
DERBY	Derby	87.13	89.70	60.60	58.57	25.80	92.05	69.0	0.84	0.88
ND820603	Valley	85.97	118.63	57.30	62.80	28.40	87.80	73.5	1.06	0.98
NEWDAK	Newdak	92.60	116.40	71.57	67.33	30.30	82.42	76.8	0.99	0.99
OT 308	Calibre	85.53	92.33	55.00	62.90	30.13	89.01	69.1	0.80	0.90
PI548769	Troy	78.37	99.17	69.23	59.07	26.77	79.44	68.7	0.84	0.98
SD820045	Settler	86.47	82.23	71.20	59.73	25.07	78.99	67.3	0.71	0.81
W 80474	Riel	86.10	86.13	60.97	45.67	27.43	71.33	62.9	0.75	0.87
W 82056	Robert	79.67	105.73	69.17	72.27	27.67	77.73	72.0	0.85	0.94
*****	SITE MEAN *****	84.27	112.46	64.72	60.20	27.02	84.83	72.2	1.00	1.00
C.V. 1	s/mean * 100	11.10	14.78	16.21	16.74	12.51	11.99	---	---	---
LSD(.05)	LSD(.05)	15.52	27.06	17.31	16.72	5.61	16.66	---	---	---

Table 2.
1994 SPRING OAT STATEWIDE DRYLAND SUMMARY
TEST WEIGHT (lb/bu)

ID	Pedigree	Havre	Sidney	Sidney Recrop	Moccasin	Grass Range	Huntley	Mean	BYX	RSQ
81AB5792	Rio Grande	31.50	41.83	35.83	35.30	38.17	28.10	35.1	1.00	0.86
82AB1142	Ajay	32.47	38.67	36.27	33.73	37.23	26.50	34.1	0.87	0.80
90AB1322	80Ab988/Monida	30.67	42.27	34.60	36.10	38.67	24.40	34.5	1.24	0.79
CI 6611	Park	30.50	42.33	38.00	34.80	32.30	28.10	34.3	1.13	0.96
CI 8263	Cayuse	30.17	40.50	35.97	33.97	35.83	26.20	33.8	1.08	0.95
CI 9252	Otana	33.20	43.30	41.27	37.10	36.23	30.90	37.0	1.03	0.98
CI 9297	Appaloosa	28.53	39.00	34.93	33.60	33.93	27.40	32.9	0.93	0.95
CI 9401	Ogle	33.70	42.33	39.70	35.70	35.67	31.20	36.4	0.89	0.99
CI467882	Border	29.17	39.00	35.63	34.43	31.23	28.10	32.9	0.89	0.93
CI483126	Monida	30.17	42.33	35.67	35.37	33.50	31.10	34.7	0.89	0.85
DERBY	Derby	33.00	43.00	39.47	35.57	33.93	32.40	36.2	0.88	0.90
ND820603	Valley	34.57	44.00	41.50	37.13	38.20	34.30	38.3	0.83	0.95
NEWDAK	Newdak	32.63	41.33	39.10	35.87	35.40	28.80	35.5	0.99	0.99
OT 308	Calibre	33.33	42.80	38.40	36.10	33.57	33.60	36.3	0.75	0.81
PI548769	Troy	34.80	44.83	40.87	35.93	35.27	28.10	36.6	1.24	0.95
SD820045	Settler	35.93	46.50	42.43	38.90	39.37	28.60	38.6	1.32	0.96
W 80474	Riel	35.33	44.50	41.37	36.17	37.47	32.70	37.9	0.93	0.95
W 82056	Robert	33.33	39.83	38.60	34.87	34.33	31.40	35.4	0.70	0.96
*****	SITE MEAN *****	32.39	42.25	38.80	35.59	35.57	29.70	35.7	1.00	1.00
C.V. 1	s/mean * 100	3.64	4.78	4.08	2.79	2.32	---	---	---	---
LSD(.05)	LSD(.05)	1.95	3.29	2.61	1.65	1.37	---	---	---	---

Table 3.
1994 SPRING OAT STATEWIDE DRYLAND SUMMARY
PLANT HEIGHT (inches)

ID	Pedigree	Havre	Sidney	Sidney Recrop	Moccasin	Grass Range	Huntley	Mean	BYX	RSQ
81AB5792	Rio Grande	25.63	33.73	26.51	19.67	19.33	32.50	26.2	1.10	0.91
82AB1142	Ajay	22.31	27.17	22.57	17.33	16.67	25.50	21.9	0.78	0.95
90AB1322	80Ab988/Monida	25.05	29.66	24.80	19.67	18.33	27.50	24.2	0.82	0.97
CI 6611	Park	34.70	39.63	32.28	27.00	22.67	35.50	32.0	1.15	0.97
CI 8263	Cayuse	27.90	34.65	27.43	24.00	19.33	32.00	27.6	1.03	0.98
CI 9252	Otana	35.75	38.98	34.12	25.67	21.67	36.50	32.1	1.27	0.96
CI 9297	Appaloosa	26.80	33.20	26.90	23.33	19.67	30.50	26.7	0.90	0.97
CI 9401	Ogle	29.24	34.51	28.08	25.67	20.67	33.50	28.6	0.96	0.98
CI467882	Border	26.36	33.99	28.35	21.33	18.33	31.50	26.6	1.11	0.97
CI483126	Monida	29.34	36.35	31.23	25.67	20.00	35.00	29.6	1.13	0.97
DERBY	Derby	35.14	43.04	33.86	27.67	21.33	38.00	33.2	1.44	0.98
ND820603	Valley	29.87	35.70	29.00	22.67	20.00	33.00	28.4	1.13	0.99
NEWDAK	Newdak	33.23	36.35	28.08	28.33	21.00	34.50	30.2	1.01	0.90
OT 308	Calibre	35.17	39.50	32.28	29.33	23.33	37.50	32.9	1.11	0.98
PI548769	Troy	32.73	41.08	31.36	29.67	22.33	37.00	32.4	1.18	0.94
SD820045	Settler	32.89	36.88	28.48	28.33	21.67	36.00	30.7	1.04	0.92
W 80474	Riel	32.06	37.93	31.10	25.67	24.67	33.50	30.8	0.91	0.93
W 82056	Robert	31.50	35.56	29.27	26.67	22.00	31.00	29.3	0.84	0.92
*****	SITE MEAN *****	30.32	34.78	29.51	24.87	20.72	32.53	28.9	1.00	1.00
C.V. 1	s/mean * 100	4.42	3.79	5.39	10.44	8.57	5.06	---	---	---
LSD(.05)	LSD(.05)	2.22	2.15	2.62	4.31	2.95	3.34	---	---	---

Table.4.

1994 SPRING OAT STATEWIDE DRYLAND SUMMARY
HEADING DATE (Days from Jan. 1)

ID	Pedigree	Havre	Sidney	Sidney Recrop	Moccasin	Huntley	Mean	BYX	RSQ
81AB5792	Rio Grande	175.33	165.33	165.67	181.33	165.50	170.6	0.97	0.99
82AB1142	Ajay	174.67	168.00	167.33	186.67	167.00	172.7	1.10	0.97
90AB1322	80Ab988/Monida	178.67	168.00	168.33	186.67	167.50	173.8	1.13	0.99
CI 6611	Park	175.00	167.67	168.00	182.00	165.00	171.5	0.92	1.00
CI 8263	Cayuse	177.67	167.67	166.00	184.00	166.50	172.4	1.06	0.98
CI 9252	Otana	174.00	169.33	169.67	184.00	167.00	172.4	0.92	0.99
CI 9297	Appaloosa	179.67	169.00	169.00	185.00	168.50	174.2	1.00	0.98
CI 9401	Ogle	172.00	163.33	164.67	178.67	162.00	168.1	0.93	0.99
CI467882	Border	179.33	169.67	169.67	186.67	166.50	174.4	1.11	0.99
CI483126	Monida	178.33	169.67	170.33	187.33	168.00	174.7	1.07	1.00
DERBY	Derby	177.33	169.33	170.00	184.33	168.50	173.9	0.90	0.99
ND820603	Valley	176.67	166.67	168.33	184.33	164.50	172.1	1.09	0.99
NEWDAK	Newdak	172.33	163.33	164.67	178.33	162.00	168.1	0.92	0.99
OT 308	Calibre	178.67	170.33	169.67	185.67	168.00	174.5	0.99	0.99
PI548769	Troy	174.00	165.33	167.00	181.67	165.50	170.7	0.94	1.00
SD820045	Settler	171.33	164.00	163.33	178.67	163.00	168.1	0.91	1.00
W 80474	Riel	175.00	167.33	167.67	184.00	164.00	171.6	1.06	0.99
W 82056	Robert	178.00	170.00	169.33	186.33	167.00	174.1	1.06	1.00
*****	SITE MEAN *****	176.00	167.45	167.81	183.65	165.83	172.2	1.00	1.00
C.V. 1	s/mean * 100	0.53	0.46	0.41	0.50	0.52	---	---	---
LSD(.05)	LSD(.05)	1.54	1.27	1.14	1.52	1.75	---	---	---

Table 5.
1994 STATEWIDE OAT STATEWIDE REPORT - IRRIGATED
YIELD (bu/ac)

ID	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Mean	BYX	RSQ
81AB5792	Rio Grande	178.47	196.47	182.62	180.90	184.6	-0.19	0.06
82AB1142	Ajay	178.15	175.07	196.14	170.05	179.9	0.02	0.00
90AB1322	80Ab988/Monida	205.11	196.17	178.35	180.13	189.9	1.11	0.79
CI 6611	Park	177.28	148.43	147.49	143.15	154.1	1.48	0.96
CI 8263	Cavuse	184.90	188.40	179.21	173.63	181.5	0.39	0.39
CI 9252	Ciana	196.83	162.70	176.20	169.50	176.3	1.19	0.69
CI 9297	Appaloosa	192.12	200.03	180.17	169.78	185.5	0.78	0.37
CI 9401	Ogle	173.91	162.33	154.65	161.93	163.2	0.64	0.69
CI467882	Border	192.62	200.50	189.35	173.23	188.9	0.58	0.28
CI483126	Monida	214.29	204.27	180.67	175.58	193.7	1.60	0.79
DERBY	Derby	198.64	162.30	156.54	158.83	169.1	1.83	0.91
ND820603	Valley	177.84	175.50	179.36	151.50	171.1	0.76	0.36
NEWDAK	Newdak	177.00	153.33	156.95	166.68	163.5	0.64	0.39
OT 308	Calibre	204.95	155.37	143.94	149.13	163.3	2.59	0.91
PI548769	Troy	153.67	183.17	145.26	152.18	158.6	0.05	0.00
SD820045	Settler	161.60	111.00	148.72	145.73	141.8	0.81	0.15
W 80474	Riel	200.58	161.83	162.53	148.80	168.4	2.14	0.98
W 82056	Robert	185.71	176.37	158.91	150.38	167.8	1.41	0.82
*****	SITE MEAN *****	186.31	170.58	167.61	160.90	171.7	1.00	1.00
C.V. 1	s/mean * 100	7.93	9.24	8.05	5.88	---	---	---
LSD(.05)	LSD(.05)	24.52	26.02	21.95	13.26	---	---	---

Table 6.
1994 STATEWIDE OAT STATEWIDE REPORT - IRRIGATED
TEST WEIGHT (lb/bu)

ID	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Mean	BYX	RSQ
81AB5792	Rio Grande	34.70	38.33	32.60	39.90	36.4	1.05	0.97
82AB1142	Ajay	34.60	38.83	34.20	40.30	37.0	0.93	0.92
90AB1322	80Ab988/Monida	35.27	39.00	34.30	39.60	37.0	0.84	0.98
CI 6611	Park	35.83	39.50	32.00	38.50	36.5	1.04	0.94
CI 8263	Cavuse	32.67	39.83	32.70	39.65	36.2	1.25	0.92
CI 9252	Otana	38.37	41.50	35.30	41.55	39.2	0.94	0.97
CI 9297	Appaloosa	33.47	38.33	31.90	39.55	35.8	1.17	0.98
CI 9401	Ogle	34.33	37.67	31.00	37.75	35.2	1.01	0.97
CI467882	Border	32.80	38.50	31.20	39.40	35.5	1.29	0.98
CI483126	Monida	34.80	39.00	35.10	40.65	37.4	0.86	0.86
DERBY	Derby	36.43	39.67	35.70	41.05	38.2	0.79	0.94
ND820603	Valley	37.53	41.50	36.30	41.50	39.2	0.86	1.00
NEWDAK	Newdak	35.23	39.50	31.90	37.85	36.1	1.02	0.93
OT 308	Calibre	38.07	40.67	33.90	40.35	38.2	0.95	0.91
PI548769	Troy	36.70	40.83	34.30	41.05	38.2	1.05	1.00
SD820045	Settler	37.47	41.17	32.90	41.50	38.3	1.25	0.96
W 80474	Riel	38.13	39.83	35.50	39.75	38.3	0.62	0.92
W 82056	Robert	36.83	38.17	34.30	39.65	37.2	0.69	0.90
*****	SITE MEAN *****	35.74	39.80	34.23	40.84	37.3	1.00	1.00
C.V. 1	s/mean * 100	3.05	1.92	---	1.16	---	---	---
LSD(.05)	LSD(.05)	1.81	1.26	---	0.96	---	---	---

Table 7.
1994 STATEWIDE OAT STATEWIDE REPORT - IRRIGATED
PLANT HEIGHT (inches)

ID	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Mean	BYX	RSQ
81AB5792	Rio Grande	36.75	37.80	33.00	33.99	35.4	0.62	0.56
82AB1142	Ajay	30.84	33.99	30.00	31.50	31.6	0.23	0.13
90AB1322	80Ab988/Monida	36.09	34.65	33.50	33.20	34.4	0.36	0.56
CI 6611	Park	48.56	42.26	34.50	43.58	42.2	2.10	0.98
CI 8263	Cavuse	41.34	39.11	36.50	38.85	39.0	0.71	0.97
CI 9252	Citana	47.24	42.65	39.50	46.18	43.9	1.14	0.79
CI 9297	Appaloosa	38.06	36.48	27.50	38.58	35.2	1.70	0.81
CI 9401	Ogle	38.06	36.88	37.50	36.22	37.2	0.04	0.02
CI467882	Border	40.68	38.19	31.50	38.58	37.2	1.42	0.96
CI483126	Monida	41.34	40.29	34.50	41.73	39.5	1.10	0.81
DERBY	Derby	47.90	43.83	33.50	46.73	43.0	2.25	0.89
ND820603	Valley	38.06	37.01	35.50	36.48	36.8	0.38	0.95
NEWDAK	Newdak	40.68	38.45	37.00	40.67	39.2	0.55	0.70
OT 308	Calibre	48.56	42.26	38.50	45.94	43.8	1.47	0.84
PI548769	Troy	47.90	44.23	35.50	46.46	43.5	1.93	0.91
SD820045	Settler	41.99	40.94	41.00	39.88	41.0	0.11	0.13
W 80474	Riel	45.93	41.08	37.50	43.03	41.9	1.23	0.91
W 82056	Robert	43.96	37.40	38.50	42.91	40.7	0.72	0.97
SITE MEAN	SITE MEAN *****	41.89	39.57	34.44	39.23	39.0	1.00	1.00
C.V. 1	s/mean * 100	6.80	5.60	9.06	4.55	---	---	---
LSD(.05)	LSD(.05)	12.01	3.66	6.33	2.91	---	---	---

Table 3.
1994 STATEWIDE OAT STATEWIDE REPORT - IRRIGATED
HEADING DATE (Days from Jan. 1)

ID	Pedigree	Kali- spell	Sidney	Huntley	Bozeman	Mean	BYX	RSQ
81AB5792	Rio Grande	175.67	164.00	164.00	175.50	169.8	1.11	0.98
82AB1142	Ajay	175.67	168.67	168.50	178.25	172.8	0.82	0.97
90AB1322	80Ab988/Monida	177.33	167.67	167.00	177.50	172.4	0.98	1.00
CI 6611	Park	176.67	166.67	165.50	176.00	171.2	0.99	0.99
CI 8263	Cayuse	175.67	166.67	166.00	176.25	171.1	0.93	0.99
CI 9252	Otana	175.00	168.00	165.00	177.75	171.4	0.98	0.97
CI 9297	Appaloosa	179.00	169.33	166.00	178.00	173.1	1.07	0.98
CI 9401	Ogle	175.67	162.00	162.00	172.75	168.1	1.16	0.93
CI467882	Border	178.33	168.67	166.50	178.75	173.1	1.07	1.00
CI483126	Monida	174.67	169.00	165.50	177.75	171.7	0.90	0.95
DERBY	Derby	176.00	169.00	166.00	177.50	172.1	0.92	0.99
ND820603	Valley	175.33	165.67	164.00	176.75	170.4	1.10	1.00
NEWDAK	Newdak	174.00	162.33	161.00	174.00	167.8	1.20	1.00
OT 308	Calibre	175.67	169.00	168.00	178.75	172.9	0.86	0.96
PI548769	Troy	175.67	168.00	166.00	177.75	171.9	0.96	0.99
SD820045	Settler	174.67	161.67	160.50	173.00	167.5	1.23	0.98
W 80474	Riel	175.33	167.00	164.00	176.50	170.7	1.03	0.99
W 82056	Robert	177.00	169.67	168.50	177.75	173.2	0.81	1.00
SITMEAN	SITE MEAN *****	175.96	167.02	165.19	176.80	---	1.00	1.00
C.V. 1	s/mean * 100	1.17	0.34	0.46	0.38	---	---	---
LSD(.05)	LSD(.05)	3.41	0.93	1.55	0.93	---	---	---