

PROJECT TITLE: 1990 Montana Uniform Oat Performance Trial

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Gregg Carlson - Northern Agricultural Research Center - Havre
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OBJECTIVE:

To determine the adaptability of new and introduced oat varieties to Montana the Northwestern Uniform Oat Nursery is grown through out the state in several locations under irrigation, high moisture and dryland conditions.

RESULTS:

Dryland locations -

Havre, Sidney, and Huntley dryland locations had high yields this year which were equal to, or greater than, 1989 yields. Moccasin yields were significantly higher than the 1988 harvest (no harvest recorded in 1989). Oat variety crosses with 74AB2608 had the highest mean yields for the dryland locations. Otana averaged 56.3 bu/a statewide. Test weights were less than 1989 at both Moccasin and Huntley but greater at the Sidney location (32.9, 26.5, and 34.9 lb/bu respectively). Test weights at Havre were equal to 1989. The high test weights for all locations were Trucker (35.5 lb/bu), and 86AB1867 (35.3 lb/bu). Otana had a statewide test weight mean of 34.2 lb/bu. Plant heights were greater than, or equal to, the 1989 values. Heading date averages across locations were, in most part, equal to 1989.

Irrigated and high moisture locations -

The Northwestern Uniform Oat nursery was planted in two irrigated (Sidney and Huntley) and two high moisture (Bozeman and Kalispell) locations. Yields were excellent at each location with the four location average being just under 200 bu/A (124.57 bu/a in 1989). Kalispell yields were equal to last year (184.5 bu/a mean) while both Bozeman and Sidney had significant increases over the 1989 average yields (210.8 and 179.1 bu/a respectively). Huntley had no harvest last year but had yields almost two times the 1988 averages. The high yielding variety averaged across the four irrigated locations was 83AB3250 (a Cayuse/ Monida cross) at 225.4 bu/a. Otana averaged 195.4 bu/a for irrigated sites. The test weight mean for all irrigated oat nurseries in 1990 was equal to that of 1989 (36.7 lb/bu). As in the dryland locations the highest test weight means were from Trucker (41.0 lb/bu), Otana (39.4 lb/bu), and 86AB1867 (39.3 lb/bu). State-wide heights were greater this year and heading dates were earlier when compared to 1989.

FUTURE PLANS:

Variety evaluation will continue in the future. Dr. Blake will also possibly initiate an oat breeding program in the near future.

Summary of Yield data from the Uniform Northwestern Oat nursery grown under dryland conditions in Montana in 1990. (bushel/acre)

ID	PEDIGREE	HAVRE	SIDNEY	MOCCASIN	HUNTLEY	AVG	BYX	RSQ
80Ab5322	Border/74Ab1956	40.7	71.2	24.3	70.2	51.6	1.15	1.00
80Ab5807	74AB2608/Cayuse	47.8	86.8	49.3	89.2	68.3	1.08	0.91
80Ab988	74AB1952/74AB2608	45.7	72.5	39.4	75.2	58.2	0.90	0.98
81Ab5792	74Ab2608/Cayuse	57.3	80.4	41.8	83.2	65.7	0.97	0.98
82Ab1142	74ab1952/74ab2608	46.9	77.7	33.1	83.4	60.3	1.19	0.98
82Ab1178	74AB1952/75AB1576	48.2	78.2	39.7	79.3	61.4	1.01	0.99
82Ab248	Cayuse/Monida	51.9	84.0	41.5	80.5	64.5	1.04	0.99
83AB3119	Cayuse/76Ab6843	46.2	72.3	25.0	77.5	55.2	1.20	0.98
83AB3250	Cayuse/Monida	55.0	76.8	41.8	82.7	64.1	0.94	0.98
83AB3725	74Ab1952/74Ab2608	45.9	76.2	33.7	84.2	60.0	1.18	0.97
86AB1867	81Ab5772/Ogle	56.4	78.4	43.4	93.7	68.0	1.07	0.92
86AB664	Ogle/75Ab861	45.9	78.7	34.7	65.5	56.2	0.94	0.93
CI 6611	Park	35.7	69.6	24.1	57.6	46.7	1.00	0.95
CI 8263	Cayuse	53.0	81.7	43.9	74.6	63.3	0.87	0.97
CI 9252	Otana	50.6	75.5	35.1	64.0	56.3	0.83	0.92
CI 9297	Appaloosa	48.6	73.3	33.1	77.7	58.2	1.04	0.99
CI 9401	Ogle	52.0	77.0	35.8	74.6	59.8	0.97	0.99
CI467882	Border	52.4	79.6	31.0	75.3	59.6	1.10	0.97
CI483126	Monida (ID 751170)	48.5	77.5	32.1	73.2	57.8	1.06	0.99
ND820603	Valley	34.5	71.6	26.1	61.8	48.5	1.06	0.97
NP871742	Ogle/OT 32-15, Sel. N	45.7	72.3	28.6	73.5	55.0	1.08	0.99
NP871754	Ogle/OT 3215, NZ 841	43.2	74.8	32.7	75.7	56.6	1.09	1.00
NPB86801	Minamax	40.8	72.3	28.2	77.7	54.8	1.19	0.99
NPB88301	Ogle/OT 3215//Border	40.4	75.8	30.1	63.8	52.5	1.02	0.95
NPB88304	Ogle/OT 3215//Border	41.5	73.3	32.2	62.1	52.3	0.91	0.95
OT 308	Calibre	46.2	64.9	26.4	64.9	50.6	0.90	0.97
SD810109	Trucker (Moore//Dal/	49.1	64.1	32.8	65.0	52.7	0.74	0.96
W 78286	Dumont	44.9	63.0	40.8	62.6	52.8	0.57	0.98
W 80474	Riel (RL 3057/Otana)	44.1	72.3	32.4	68.8	54.4	0.96	1.00
W 82056	Robert (OT 212/RL 30	40.7	62.1	26.2	67.5	49.1	0.94	0.97
*****	SITE MEAN *****	46.7	74.5	34.0	73.5	57.1	1.00	1.00
	F-value	4.40	3.83	3.85	6.47			
	C.V. (S/Mean*100)	9.89	6.96	17.2	9.52			
	L.S.D. (.05)	7.54	8.47	9.53	9.84			

Summary of Test Weight data from the Uniform Northwestern Oat nursery grown under dryland conditions in Montana in 1990. (lbs/bu)

ID	PEDIGREE	HAVRE	SIDNEY	MOCCASIN	HUNTLEY	AVG	BYX	RSQ
80Ab5322	Border/74Ab1956	31.7	33.3	31.6	24.2	30.2	1.06	0.89
80Ab5807	74AB2608/Cayuse	32.1	35.2	36.2	26.8	32.5	1.11	0.90
80Ab988	74AB1952/74AB2608	30.1	33.3	34.1	24.9	30.6	1.09	0.90
81Ab5792	74Ab2608/Cayuse	31.7	34.5	34.3	25.6	31.6	1.11	0.94
82Ab1142	74ab1952/74ab2608	32.7	34.1	34.7	25.8	31.8	1.05	0.87
82Ab1178	74AB1952/75AB1576	34.7	35.1	34.9	26.6	32.8	1.03	0.81
82Ab248	Cayuse/Monida	28.4	34.8	34.5	25.9	30.9	1.16	0.88
83AB3119	Cayuse/76Ab6843	34.2	33.7	31.5	23.8	30.8	1.11	0.70
83AB3250	Cayuse/Monida	31.0	33.0	33.2	25.3	30.6	0.97	0.91
83AB3725	74Ab1952/74Ab2608	32.6	32.8	34.5	27.2	31.8	0.75	0.75
86AB1867	81Ab5772/Ogle	34.0	39.1	36.4	31.5	35.3	0.88	0.95
86AB664	Ogle/75Ab861	29.8	34.0	32.3	25.6	30.4	1.01	1.00
CI 6611	Park	27.3	36.9	30.3	27.8	30.5	0.96	0.62
CI 8263	Cayuse	30.4	31.9	34.3	24.9	30.4	0.98	0.78
CI 9252	Otana	33.1	38.1	36.6	28.8	34.2	1.13	0.98
CI 9297	Appaloosa	31.6	31.8	31.6	24.2	29.8	0.91	0.79
CI 9401	Ogle	31.6	34.2	32.6	27.8	31.6	0.74	0.99
CI467882	Border	29.8	31.7	30.2	26.1	29.4	0.64	0.96
CI483126	Monida (ID 751170)	31.6	35.8	35.4	26.9	32.4	1.12	0.97
ND820603	Valley	28.0	37.2	33.9	30.2	32.3	0.84	0.55
NP871742	Ogle/OT 32-15, Sel. N	29.1	32.4	29.1	24.1	28.7	0.91	0.94
NP871754	Ogle/OT 3215, NZ 841	27.8	32.0	29.8	23.3	28.2	1.02	1.00
NPB86801	Minamax	26.9	33.3	27.3	23.4	27.7	1.03	0.83
NPB88301	Ogle/OT 3215//Border	25.0	29.3	28.2	20.7	25.8	1.06	0.98
NPB88304	Ogle/OT 3215//Border	26.2	33.5	27.3	20.0	26.7	1.48	0.94
OT 308	Calibre	29.7	39.1	29.1	29.1	31.8	0.93	0.47
SD810109	Trucker (Moore//Dal/	36.9	42.0	39.0	32.1	37.5	1.14	1.00
W 78286	Dumont	32.0	39.8	35.0	30.1	34.2	1.07	0.85
W 80474	Riel (RL 3057/Otana)	33.2	39.5	36.0	30.4	34.8	1.04	0.95
W 82056	Robert (OT 212/RL 30	30.3	36.4	32.7	30.5	32.5	0.64	0.67
*****	SITE MEAN *****	30.8	34.9	32.9	26.5	31.3	1.00	1.00
	F-value	5.61	8.56	8.43	26.9			
	C.V. (S/Mean*100)	6.41	4.97	5.40	4.36			
	L.S.D. (.05)	3.23	2.84	2.90	1.62			

Summary of Plant Height data from the Uniform Northwestern Oak nursery grown under dryland conditions in Montana in 1990. (inches)

ID	PEDIGREE	HAVRE	SIDNEY	MOCCASIN	HUNTLEY	AVG	BYX	RSQ
80Ab5322	Border/74Ab1956	19.4	22.3	19.6	27.0	22.1	0.74	0.98
80Ab5807	74AB2608/Cayuse	21.9	25.9	25.2	36.0	27.3	1.26	0.96
80Ab988	74AB1952/74AB2608	17.6	20.8	18.4	27.0	20.9	0.90	1.00
81Ab5792	74Ab2608/Cayuse	22.8	26.0	23.5	35.0	26.8	1.19	1.00
82Ab1142	74ab1952/74ab2608	17.6	20.8	18.9	26.0	20.8	0.77	0.98
82Ab1178	74AB1952/75AB1576	19.5	22.5	20.6	31.0	23.4	1.10	1.00
82Ab248	Cayuse/Monida	22.1	21.8	20.6	30.0	23.6	0.88	0.93
83AB3119	Cayuse/76Ab6843	20.4	22.5	19.6	27.0	22.4	0.69	0.97
83AB3250	Cayuse/Monida	21.3	23.1	23.1	32.0	24.9	1.00	0.96
83AB3725	74Ab1952/74Ab2608	19.9	23.4	20.1	29.0	23.1	0.89	0.99
86AB1867	81Ab5772/Ogle	21.9	27.4	23.2	36.0	27.1	1.33	0.98
86AB664	Ogle/75Ab861	23.8	27.1	25.6	34.0	27.6	0.94	0.99
CI 6611	Park	26.6	29.2	25.3	37.0	29.5	1.09	0.97
CI 8263	Cayuse	24.8	27.8	25.1	37.0	28.7	1.20	1.00
CI 9252	Otana	28.6	31.0	30.6	39.0	32.3	0.96	0.98
CI 9297	Appaloosa	23.5	25.1	22.8	35.0	26.6	1.19	0.99
CI 9401	Ogle	25.5	29.6	25.5	38.0	29.6	1.24	0.99
CI467882	Border	22.9	27.2	24.7	36.0	27.7	1.22	0.99
CI483126	Monida (ID 751170)	25.8	27.8	24.9	40.0	29.6	1.47	0.99
ND820603	Valley	24.2	28.0	27.6	32.0	27.9	0.62	0.84
NP871742	Ogle/OT 32-15, Sel. N	18.1	19.8	17.6	28.0	20.9	1.02	0.99
NP871754	Ogle/OT 3215, NZ 841	18.5	20.1	18.4	25.0	20.5	0.66	1.00
NPB86801	Minamax	18.2	21.7	17.4	25.0	20.6	0.70	0.90
NPB88301	Ogle/OT 3215//Border	18.9	21.3	19.2	26.0	21.3	0.69	0.99
NPB88304	Ogle/OT 3215//Border	18.9	21.7	18.4	26.0	21.2	0.72	0.96
OT 308	Calibre	28.9	30.5	28.5	42.0	32.5	1.34	0.98
SD810109	Trucker (Moore//Dal/	28.5	31.0	28.7	40.0	32.1	1.14	1.00
W 78286	Dumont	26.3	28.6	29.3	38.0	30.5	1.05	0.94
W 80474	Riel (RL 3057/Otana)	26.5	28.5	24.0	36.0	28.8	1.05	0.93
W 82056	Robert (OT 212/RL 30	24.0	27.6	26.8	35.0	28.3	0.97	0.96
*****	SITE MEAN *****	22.6	25.3	23.1	32.8	26.0	1.00	1.00
	F-value	29.5	24.5	12.2	0			
	C.V. (S/Mean*100)	2.85	4.93	.43	0			
	L.S.D. (.05)	1.82	2.04	1.31	0			

Summary of Heading Date data from the Uniform Northwestern Oat nursery grown under dryland conditions in Montana in 1990. (Days from Jan 1)

ID	PEDIGREE	HAVRE	SIDNEY	MOCCASIN	HUNTLEY	AVG	BYX	RSQ
80Ab5322	Border/74Ab1956	187.7	173.0	189.7	174.0	181.1	1.11	1.00
80Ab5807	74AB2608/Cayuse	185.0	171.3	186.3	176.0	179.7	0.89	0.97
80Ab988	74AB1952/74AB2608	189.0	171.3	188.0	176.0	181.1	1.08	0.96
81Ab5792	74Ab2608/Cayuse	180.3	169.0	182.3	172.0	175.9	0.81	1.00
82Ab1142	74ab1952/74ab2608	186.7	170.0	186.7	173.0	179.1	1.10	0.98
82Ab1178	74AB1952/75AB1576	183.7	169.7	185.0	172.0	177.6	0.99	1.00
82Ab248	Cayuse/Monida	186.3	174.3	189.3	174.0	181.0	1.00	0.99
83AB3119	Cayuse/76Ab6843	187.7	172.7	189.7	173.0	180.8	1.15	0.99
83AB3250	Cayuse/Monida	186.0	173.0	189.0	176.0	181.0	0.97	1.00
83AB3725	74Ab1952/74Ab2608	185.0	171.3	187.0	171.0	178.6	1.07	0.98
86AB1867	81Ab5772/Ogle	178.3	166.0	180.0	165.0	172.3	0.98	0.97
86AB664	Ogle/75Ab861	182.7	170.3	185.7	172.0	177.7	0.96	1.00
CI 6611	Park	182.0	171.0	186.0	172.0	177.8	0.93	0.99
CI 8263	Cayuse	185.0	170.7	185.0	174.0	178.7	0.93	0.98
CI 9252	Otana	182.7	172.7	185.7	176.0	179.3	0.74	0.97
CI 9297	Appaloosa	186.3	172.0	186.3	173.0	179.4	1.00	0.98
CI 9401	Ogle	178.3	166.3	181.0	169.0	173.7	0.89	0.99
CI467882	Border	186.0	172.0	188.3	174.0	180.1	1.04	1.00
CI483126	Monida (ID 751170)	186.0	172.0	188.7	176.0	180.7	1.00	0.99
ND820603	Valley	182.7	170.3	185.0	172.0	177.5	0.93	1.00
NP871742	Ogle/OT 32-15, Sel. N	189.7	172.3	191.7	173.0	181.7	1.31	0.99
NP871754	Ogle/OT 3215, NZ 841	186.3	172.7	190.3	176.0	181.3	1.05	0.99
NPB86801	Minamax	188.7	171.7	189.7	176.0	181.5	1.13	0.99
NPB88301	Ogle/OT 3215//Border	187.7	170.7	191.0	174.0	180.8	1.26	1.00
NPB88304	Ogle/OT 3215//Border	186.7	171.7	192.0	172.0	180.6	1.29	0.98
OT 308	Calibre	184.0	171.0	189.0	173.0	179.2	1.08	0.99
SD810109	Trucker (Moore//Dal/	178.7	168.3	182.3	171.0	175.1	0.82	0.99
W 78286	Dumont	181.3	171.7	186.0	173.0	178.0	0.85	0.98
W 80474	Riel (RL 3057/Otana)	180.3	171.0	185.0	172.0	177.1	0.84	0.98
W 82056	Robert (OT 212/RL 30	182.7	172.7	187.3	176.0	179.7	0.81	0.96
*****	SITE MEAN *****	184.4	171.1	187.0	173.2	178.9	1.00	1.00
	F-value	1.06	14.6	42.6	0			
	C.V. (S/Mean*100)	17.0	.49	.43	0			
	L.S.D. (.05)	52.1	1.37	1.31	0			

Summary of Yield data from the Uniform Northwestern Oat nursery grown under irrigated or high moisture conditions in Montana in 1990. (bu/a)

ID	PEDIGREE	KALISPELL	BOZEMAN	SIDNEY	HUNTLEY	AVG	BYX	RSQ
80Ab5322	Border/74Ab1956	211.0	215.4	194.3	235.7	214.1	0.75	0.82
80Ab5807	74AB2608/Cayuse	218.5	227.6	185.2	240.9	218.1	1.01	0.77
80Ab988	74AB1952/74AB2608	210.0	208.7	188.1	217.2	206.0	0.46	0.58
81Ab5792	74Ab2608/Cayuse	195.9	220.0	190.8	244.2	212.7	1.17	0.96
82Ab1142	74ab1952/74ab2608	194.9	201.9	190.8	226.3	203.5	0.69	0.80
82Ab1178	74AB1952/75AB1576	208.7	213.3	189.6	220.9	208.1	0.56	0.75
82Ab248	Cayuse/Monida	203.4	237.7	203.5	234.2	219.7	0.87	0.90
83AB3119	Cayuse/76Ab6843	229.3	219.6	186.3	237.0	218.1	0.73	0.45
83AB3250	Cayuse/Monida	218.1	240.2	195.7	247.8	225.4	1.09	0.91
83AB3725	74Ab1952/74Ab2608	191.2	198.8	169.0	222.3	195.3	0.98	0.84
86AB1867	81Ab5772/Ogle	180.9	196.8	168.1	212.5	189.6	0.91	0.95
86AB664	Ogle/75Ab861	202.2	238.0	183.2	247.8	217.8	1.45	0.97
CI 6611	Park	152.8	212.2	157.3	210.4	183.2	1.51	0.91
CI 8263	Cayuse	194.6	223.1	183.1	234.9	208.9	1.17	1.00
CI 9252	Otana	173.5	221.0	170.6	216.5	195.4	1.25	0.91
CI 9297	Appaloosa	166.3	229.2	182.4	231.4	202.3	1.50	0.87
CI 9401	Ogle	186.0	191.4	167.0	210.2	188.7	0.78	0.82
CI467882	Border	196.9	231.4	195.4	242.9	216.6	1.17	0.99
CI483126	Monida (ID 751170)	193.4	235.3	204.7	231.1	216.1	0.88	0.80
ND820603	Valley	163.4	218.4	159.5	209.8	187.8	1.40	0.89
NP871742	Ogle/OT 32-15, Sel. N	164.3	177.9	178.5	205.9	181.7	0.65	0.59
NP871754	Ogle/OT 3215, NZ 841	165.8	181.7	193.3	210.2	187.7	0.51	0.32
NPB86801	Minamax	155.9	178.7	183.9	198.2	179.2	0.53	0.39
NPB88301	Ogle/OT 3215//Border	162.1	179.0	180.9	219.5	185.4	0.89	0.57
NPB88304	Ogle/OT 3215//Border	152.6	170.6	185.3	206.1	178.6	0.61	0.31
OT 308	Calibre	172.2	224.9	160.0	217.1	193.5	1.48	0.90
SD810109	Trucker (Moore//Dal/	141.3	180.2	142.6	185.8	162.5	1.14	0.97
W 78286	Dumont	178.7	217.4	150.5	213.3	190.0	1.42	0.86
W 80474	Riel (RL 3057/Otana)	181.9	218.4	168.2	214.8	195.8	1.14	0.91
W 82056	Robert (OT 212/RL 30	170.4	214.3	165.3	215.2	191.3	1.29	0.96
*****	SITE MEAN *****	184.5	210.8	179.1	222.0	199.1	1.00	1.00
	F-value	4.75	9.18	6.49	5.52			
	C.V. (S/Mean*100)	9.73	6.40	5.90	5.89			
	L.S.D. (.05)	29.4	18.9	17.3	18.4			

Summary of Test Weight data from the Uniform Northwestern Oat nursery
grown under irrigated of high moisture conditions in Montana in 1990. (lbs/bu)

ID	PEDIGREE	KALISPELL	BOZEMAN	SIDNEY	HUNTLEY	AVG	BYX	RSQ
80Ab5322	Border/74Ab1956	35.5	36.3	39.5	38.6	37.5	0.72	0.80
80Ab5807	74AB2608/Cayuse	34.2	36.4	40.0	38.9	37.4	1.06	0.91
80Ab988	74AB1952/74AB2608	33.7	35.2	39.5	36.0	36.1	0.95	0.81
81Ab5792	74Ab2608/Cayuse	33.5	36.0	40.0	38.5	37.0	1.19	0.93
82Ab1142	74ab1952/74ab2608	33.4	35.9	39.8	37.1	36.6	1.11	0.94
82Ab1178	74AB1952/75AB1576	34.9	36.8	39.5	36.8	37.0	0.76	0.87
82Ab248	Cayuse/Monida	34.2	36.1	39.3	38.6	37.1	0.96	0.89
83AB3119	Cayuse/76Ab6843	33.7	35.8	39.5	37.0	36.5	1.00	0.92
83AB3250	Cayuse/Monida	33.9	35.3	38.7	38.0	36.5	0.89	0.85
83AB3725	74Ab1952/74Ab2608	35.7	36.5	39.0	36.8	37.0	0.53	0.76
86AB1867	81Ab5772/Ogle	35.4	40.6	40.7	40.5	39.3	1.03	0.86
86AB664	Ogle/75Ab861	34.3	36.7	39.5	37.8	37.1	0.93	0.98
CI 6611	Park	32.7	37.1	39.8	39.1	37.2	1.35	0.97
CI 8263	Cayuse	33.0	36.0	38.0	39.0	36.5	1.01	0.81
CI 9252	Otana	36.9	39.8	41.7	39.4	39.4	0.82	0.94
CI 9297	Appaloosa	31.4	35.0	38.2	37.4	35.5	1.28	0.95
CI 9401	Ogle	32.8	35.1	37.3	36.8	35.5	0.85	0.94
CI467882	Border	33.1	37.1	39.7	39.5	37.3	1.28	0.93
CI483126	Monida (ID 751170)	36.0	38.3	40.3	38.6	38.3	0.76	0.98
ND820603	Valley	31.2	39.5	41.5	40.5	38.2	1.97	0.94
NP871742	Ogle/OT 32-15, Sel. N	29.7	34.9	34.8	32.2	32.9	0.89	0.69
NP871754	Ogle/OT 3215, NZ 841	29.2	33.8	34.2	32.2	32.4	0.89	0.83
NPB86801	Minamax	29.2	34.6	37.2	33.2	33.5	1.37	0.91
NPB88301	Ogle/OT 3215//Border	29.0	34.2	35.2	32.3	32.7	1.08	0.84
NPB88304	Ogle/OT 3215//Border	29.8	33.5	34.3	32.3	32.5	0.80	0.87
OT 308	Calibre	35.4	40.3	42.3	39.7	39.4	1.23	0.96
SD810109	Trucker (Moore//Dal/	39.0	41.7	42.0	41.3	41.0	0.55	0.90
W 78286	Dumont	35.1	37.8	38.8	36.5	37.1	0.61	0.79
W 80474	Riel (RL 3057/Otana)	35.3	40.2	39.8	40.3	38.9	0.92	0.78
W 82056	Robert (OT 212/RL 30	32.7	36.5	39.2	38.4	36.7	1.22	0.97
*****	SITE MEAN *****	33.5	36.8	39.0	37.5	36.7	1.00	1.00
	F-value	14.7	0	17.8	46.1			
	C.V. (S/Mean*100)	3.29	0	2.22	2.05			
	L.S.D. (.05)	1.80	0	1.41	1.08			

Summary of Heading Date data from the Uniform Northwestern Oat nursery
 grown under irrigated of high moisture conditions in Montana in 1990.
 (Days from Jan 1)

ID	PEDIGREE	KALISPELL	BOZEMAN	SIDNEY	HUNTLEY	AVG	BYX	RSQ
80Ab5322	Border/74Ab1956	181.7	191.0	178.0	172.0	180.7	1.02	0.99
80Ab5807	74AB2608/Cayuse	180.3	189.5	176.3	173.0	179.8	0.91	0.98
80Ab988	74AB1952/74AB2608	180.3	188.5	176.7	167.0	178.1	1.13	0.97
81Ab5792	74Ab2608/Cayuse	177.0	185.8	171.7	167.0	175.4	1.04	1.00
82Ab1142	74ab1952/74ab2608	179.3	186.8	176.3	171.0	178.4	0.85	1.00
82Ab1178	74AB1952/75AB1576	178.0	186.0	173.3	167.0	176.1	1.03	1.00
82Ab248	Cayuse/Monida	182.7	190.2	177.0	173.0	180.7	0.96	0.99
83AB3119	Cayuse/76Ab6843	181.7	190.5	177.3	172.0	180.4	1.01	1.00
83AB3250	Cayuse/Monida	182.7	190.5	177.0	173.0	180.8	0.98	1.00
83AB3725	74Ab1952/74Ab2608	178.7	187.8	175.0	171.0	178.1	0.92	0.99
86AB1867	81Ab5772/Ogle	174.0	182.0	169.0	162.0	171.8	1.08	0.99
86AB664	Ogle/75Ab861	180.3	189.5	175.3	171.0	179.0	1.02	0.99
CI 6611	Park	180.7	187.5	173.7	172.0	178.5	0.90	0.96
CI 8263	Cayuse	180.0	187.5	174.7	171.0	178.3	0.92	0.99
CI 9252	Otana	180.7	189.0	176.3	171.0	179.2	0.98	1.00
CI 9297	Appaloosa	181.7	190.0	176.7	173.0	180.3	0.95	1.00
CI 9401	Ogle	175.7	184.0	169.7	163.0	173.1	1.15	1.00
CI467882	Border	182.3	189.5	175.0	172.0	179.7	1.00	0.98
CI483126	Monida (ID 751170)	181.0	189.0	176.3	172.0	179.6	0.94	1.00
ND820603	Valley	179.7	188.5	174.0	171.0	178.3	0.99	0.99
NP871742	Ogle/OT 32-15, Sel. N	183.7	190.5	177.3	171.0	180.6	1.07	0.98
NP871754	Ogle/OT 3215, NZ 841	182.7	190.0	177.7	171.0	180.3	1.03	0.99
NPB86801	Minamax	182.0	189.2	178.0	171.0	180.1	0.98	0.99
NPB88301	Ogle/OT 3215//Border	181.0	190.0	177.3	171.0	179.8	1.02	0.99
NPB88304	Ogle/OT 3215//Border	180.3	189.0	176.7	167.0	178.2	1.16	0.97
OT 308	Calibre	180.0	189.8	176.3	171.0	179.3	1.02	1.00
SD810109	Trucker (Moore//Dal/	175.7	185.5	171.0	167.0	174.8	1.02	0.99
W 78286	Dumont	180.0	188.8	176.7	171.0	179.1	0.96	1.00
W 80474	Riel (RL 3057/Otana)	179.7	187.5	174.0	171.0	178.0	0.93	0.99
W 82056	Robert (OT 212/RL 30	181.7	190.0	177.0	171.0	179.9	1.03	1.00
*****	SITE MEAN *****	180.2	188.4	175.4	170.2	178.5	1.00	1.00
	F-value	27.9	35.4	16.1	0			
	C.V. (S/Mean*100)	.41	.37	.59	0			
	L.S.D. (.05)	1.21	.99	1.70	0			

Summary of Height data from the Uniform Northwestern Dat nursery grown under irrigated of high moisture conditions in Montana in 1990. (inches)

ID	PEDIGREE	KALISFELD	BOZEMAN	SIDNEY	HUNTLEY	AVG	BYX	RSQ
80AB5322	Border/74AB1956	34.6	32.1	33.7	37.0	34.4	0.71	0.61
80AB5807	74AB2608/Cayuse	41.7	35.2	36.2	40.0	38.3	1.29	0.89
80AB988	74AB1952/74AB2608	32.1	31.9	32.8	23.0	38.3	1.29	0.89
81AB5792	74AB2608/Cayuse	38.2	33.5	35.3	41.0	29.9	-1.25	0.37
82AB1142	74AB1952/74AB2608	33.7	28.4	30.1	32.0	31.0	0.88	0.76
82AB1178	74AB1952/75AB1576	33.9	29.5	30.6	36.0	32.5	1.23	0.86
82AB248	Cayuse/Monda	36.4	36.1	33.2	37.0	35.7	0.58	0.59
83AB3119	Cayuse/76AB6843	33.7	31.9	33.7	36.0	33.8	0.48	0.41
83AB3250	Cayuse/Monda	36.8	35.2	32.8	32.0	34.2	0.14	0.02
83AB3725	74AB1952/74AB2608	34.5	30.9	31.5	36.0	33.2	1.02	0.90
86AB1867	81AB5772/Og1e	35.4	30.7	32.1	36.0	33.6	1.07	0.88
86AB664	Og1e/75AB861	41.3	38.7	36.8	41.0	39.4	0.92	0.92
CI 6611	Park	47.8	43.2	39.5	47.0	44.4	1.62	0.90
CI 8263	Cayuse	42.1	38.5	35.3	42.0	39.5	1.39	0.91
CI 9252	Ocana	49.4	44.9	39.1	47.0	45.1	1.70	0.75
CI 9297	Appaloosa	42.9	37.8	35.4	44.0	40.0	1.80	0.97
CI 9401	Og1e	39.6	36.7	36.8	40.0	38.3	0.78	0.98
CI467882	Border	41.9	37.7	35.2	42.0	39.2	1.46	0.96
CI483126	Monda (ID 751170)	46.5	41.1	40.0	45.0	43.2	1.34	0.96
ND820603	Valley	42.5	37.4	36.2	41.0	39.3	1.29	0.95
NP871742	Og1e/OT 32-15, sel. N	26.0	24.7	28.1	28.0	26.7	0.09	0.01
NP871754	Og1e/OT 3215, NZ 841	27.6	25.0	27.6	32.0	28.0	0.85	0.43
NP886801	Minimax	27.9	24.5	28.2	29.0	27.4	0.47	0.28
NP888301	Og1e/OT 3215//Border	28.5	26.8	26.9	29.0	27.8	0.49	0.95
NP888304	Og1e/OT 3215//Border	26.4	25.6	27.9	28.0	27.0	0.06	0.01
OT 308	Calibre	48.6	45.7	37.9	49.0	45.3	1.94	0.72
SD810109	Trucker (Moore//Dal//	45.9	38.0	35.8	45.0	41.2	2.22	0.99
W 78286	Dumont	45.3	42.3	38.2	47.0	43.2	1.59	0.86
W 80474	Riel (RL 3057/Ocana)	47.4	41.4	39.9	48.0	44.2	1.83	0.99
W 82056	Robert (OT 212/RL 30	44.5	41.0	41.7	44.0	42.8	0.72	0.91
***** SITE MEAN *****								
	F-value	38.9	96.7	13.2	0			
	C.V. (S/Mean*100)	4.18	3.62	5.72	0			
	L.S.D. (.05)	3.29	1.78	13.2	0			