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Spring Oats Research in the Four Corners Region, 1989-1998

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ABSTRACT

Spring oats (*Avena sativa*) are produced for use as grain, hay and green manure and as a companion crop. As part of a collaborative trial with the Northwestern States Regional Oats Nursery, 65 oat cultivars were tested in Farmington, N.M. from 1989 to 1998. Mean annual rainfall during the period was 7.81 inches, slightly less than the 30-year mean rainfall of 8.14 inches. The highest mean annual grain yield occurred in 1991 at 184 bu/acre. The lowest mean grain yield occurred in 1994, when annual production levels reached just 64 bu/acre. Mean grain yield for the reference check variety, Cayuse, was 114 bu/acre, while that obtained by the variety Prairie was 153 bu/acre. Overall, no significant correlation occurred between grain yield and test weight, but yield was positively correlated with plant height (0.60884) and heading date (0.40761) and negatively correlated with moisture content (-0.51858).

INTRODUCTION

Spring oats (*Avena sativa*) are produced in northwestern New Mexico for use as grain, hay and green manure and as a companion crop for establishing forage legumes (Gregory et al., 1993). The total acreage planted to oats in the state in 1997 was 3,326 acres. Acreage planted to other small grains were wheat (*Triticum aestivum*), 264,130 acres; sorghum (*Sorghum bicolor*), 188,615 acres; and barley (*Hordeum vulgare*), 3,852 acres (USDA, 1999). New Mexico's limited oat production does not meet the demand by horse owners and racetrack operators who value oats for their high nutritional content and digestibility.

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Crop variety trials are established at research centers that represent agroecological domains in a particular region. NMSU's Agricultural Science Center at Farmington is located in an area typical of higher elevations of the intermountain region in the West (Peterson, 1992). Specifically, it is located in northwestern New Mexico (36° 4' N, 108° 2' W) at an elevation of 5,640 feet above mean sea level. Oat variety trials have been underway since 1974, in collaboration with the Northwestern States Oats Nursery. Material evaluated includes all new germplasm destined for release in the West.

MATERIALS AND METHODS

Oat variety trials were conducted at the science center from 1989 to 1998. Material included 65 different cultivars, experimental lines and established varieties from breeders' programs in the United States and Canada (table 1). The soil was classified by Anderson (1970) as a Kinnear very fine sandy loam and reclassified as a Doak loam (fine-loamy, mixed, mesic Typic Haplargids) in 1977 (USDA-SCS, 1980).

Thirty entries were evaluated each year, except for 1994 and 1995 when 32 cultivars were evaluated (table 2). The experimental design was a randomized complete block with four replications. In each plot, there were six 10-inch rows, 20 feet long. Oats were planted in late March or early to mid-April and harvested in July or August (table 2). Seeding rates were 100 lb/acre during all years. Fertilizer rates were variable; nitrogen rates ranged from 47 to 225 lb N per acre; phosphorous rates ranged from 54 to 208 lb P₂O₅ per acre; and potassium was applied only one year at 62 lb K₂O per acre. Irrigation was applied as needed through a sprinkler system. Weeds were controlled through spray applications of 2,4-D (2,4-dichlorophenoxy acetic acid) or dicamba (3,6-dichloro-2-methoxybenzoic acid) during most years, while Russian wheat aphid (*Diuraphis noxia*) was controlled with Lorsban (chlorpyrifos) in 1989, 1990 and 1994 (table 2).

Grain yields were obtained by combine harvesting the entire plot. In addition to grain yield, moisture content, bushel test weight, plant height, heading date and lodging were determined in most years. Oat grain yields were adjusted to standard bushel weights of 32 lb/bu at a moisture content of 14% (Doane, 1981). Statistical analyses were conducted on an individual-year basis

using the analysis of variance (ANOVA) procedure imbedded in the APL software program and the Microsoft Excel correlation procedure.

RESULTS AND DISCUSSIONS

Climatology

Monthly precipitation depths were recorded during the 10-year experimental period (table 3) and compared to the 30-year (1969-1998) average precipitation (fig. 1). Mean precipitation averaged 7.81 inches, less than the 30-year average of 8.14 inches. June was the driest month, averaging 0.22 inches, while August was the wettest month with 1.19 inches. Low or no precipitation during several months in 1989 resulted in the lowest annual total of 5.32 inches. The greatest annual precipitation of 12.89 inches was recorded during 1997, as a result of substantial rainfall during January, April, July and September. Average precipitation from January to May was 0.56 inches per month during the 10-year experimental period compared with 0.55 inches per month during the 30 years for which records exist.

August through October is a period of elevated rainfall due to the monsoonal weather pattern that annually occurs in New Mexico. The mean monthly precipitation for these months during the 10-year period was 1.07 inches, which is similar to the 30-year mean monthly precipitation of 1.04 inches for August through September.

Mean annual maximum temperature was 67°F during the 10-year experimental period (table 4, fig. 1). December and January were the coldest months at 42° and 41°F, respectively, while July and August were the warmest months at 91° and 88°F, respectively. Monthly maximum temperatures averaged 90°F in June of 1990 and 1994, the month during which heading occurred.

The mean annual minimum temperature was 39°F (table 5, fig. 1). The lowest mean monthly minimum temperatures for the period occurred during December and January (19° and 20°F, respectively), while the highest mean monthly minimum temperatures were in July and August (60° and 59°F, respectively). Mean monthly minimum temperatures during April of 1997 and 1998 were 32° and 33°F, respectively. Cold temperatures during these years necessitated a planting delay from March to April (table 2).

Production

Oat grain yields in bushels per acre (adjusted to 14% moisture and 32 lb/bu) were calculated for each cultivar during each year tested (table 6). The mean yields were calculated and compared to that of Cayuse, a commonly used check variety, during the same years. Only those cultivars that were tested during more than one season are presented in the table. The highest annual mean grain yield was obtained in 1991 at 184 bu/acre. There were seven cultivars that produced more than 200 bu/acre, with the experimental 87Ab5125 producing the greatest yield of 232 bu/acre during that year. Cool maximum temperatures during June 1991 (table 4), the month during which heading occurred, and adequate nitrogen fertilizer (table 2), probably contributed to the high grain yields. The lowest mean grain yields (64 bu/acre and 73 bu/acre) occurred in 1994 and 1990, respectively (table 6). In 1994, ten cultivars produced grain yields of less than 50 bu/acre, with the variety Ajay producing the least (23.4 bu/acre). High maximum temperatures during June of 1990 and 1994 (table 4) may have contributed to poor pollination, resulting in poor grain yields.

Mean grain yield for the check, Cayuse, was 114 bu/acre, just above the overall mean of 113 bu/acre. Of the seven entries tested during all 10 years, two cultivars had mean grain yields greater than Cayuse: 82Ab248 at 123 bu/acre and Monida at 118 bu/acre. These cultivars also were among the highest producers in a previous oat cultivars testing program (Gregory et al., 1993). The overall highest mean grain yield was obtained by the variety Prairie, which produced 153 bu/acre during four years (1995-1998) (table 6). This was 34% greater than the mean obtained by Cayuse (136 bu/acre) during the same four years. Of the 65 cultivars tested, 25 cultivars had mean grain yields greater than that of Cayuse during comparative years.

Other growth characteristics were reported for cultivars tested during two or more years (table 7). Although the variety Trucker (SD 810109), which was tested from 1989 to 1992, had the highest mean test weight of 35.7 lb/bu (table 7), it had a poor mean yield of 88 bu/acre. The cultivar NPB 871742 had the lowest test weight of 26.7 lb/bu compared with an overall mean test weight of 31.0 lb/bu. This cultivar also had a low mean grain yield of 76 bu/acre (table 6). Overall, there was no relationship between grain yield and test weight as the correlation coefficient between these variables was

0.00219. Mean moisture content during the test period was 10.2%, reflecting the normally dry conditions prior to harvest (tables 2 and 3, fig. 1). The highest mean moisture content was 13.3% for the cultivar Minimax (NPB 86801) and the lowest mean moisture content was 8.3% for Celsia. There was a significant negative relationship between yield and moisture content with the correlation coefficient, r , equal to -0.52 ($p \leq 0.0001$). Plant height ranged from 22.7 inches to 50.0 inches with a mean of 38.9 inches (table 7) and was significantly correlated with yield ($r = 0.61$, $p \leq 0.0001$). The earliest heading date was June 8, while the latest heading date was June 26. There was a positive correlation between yield and heading date ($r = 0.41$, $p = 0.0024$). Mean lodging ranged from 0 to 58% and was factored into the adjustment of reported yields during seasons that lodging was reported.

Results from the ten individual years are presented in tables 8-17.

SUMMARY

As part of a collaborative oat variety trial at different sites in the West, 65 cultivars were tested over 10 years at NMSU's Agricultural Science Center in Farmington, N.M. At 7.81 inches, annual precipitation was slightly less than the mean of 8.14 inches recorded during the 30-year period since 1966. Mean yield ranged from a low of 63.6 bu/acre in 1994 to a high of 183.9 bu/acre in 1991. The highest mean yield of 153.3 was produced by the cultivar Prairie, while the experimental line 87Ab5125 had the highest single year yield of 232.1 bu/acre in 1991.

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Table 1. Parentage and source of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998.

Entry	Parentage	Source
74Ab2608	Cayuse/Otana	USDA, Idaho
75Ab861	Cayuse/Otana	USDA, Idaho
80Ab4725	Cayuse/74Ab1956	USDA, Idaho
80Ab5322	Border/74Ab1956	USDA, Idaho
80Ab5807	74Ab2608/Cayuse	USDA, Idaho
80Ab988	74Ab1952/74Ab2608	USDA, Idaho
81Ab5792	74Ab2608/Cayuse	USDA, Idaho
82Ab1178	74Ab1952/75Ab1576	USDA, Idaho
82Ab248	Cayuse/Monida	USDA, Idaho
83Ab3119	Cayuse/76Ab6843	USDA, Idaho
83Ab3725	74Ab1952/74Ab2608	USDA, Idaho
84Ab825	Ogle/Border	USDA, Idaho
86Ab1616**	79Ab3811/s7884	USDA, Idaho
86Ab1867	81Ab5772/Ogle	USDA, Idaho
86Ab4582	Monida Reselection	USDA, Idaho
86Ab664	Ogle/75Ab861	USDA, Idaho
87Ab4983	Ogle/Border	USDA, Idaho
87Ab5125	Ogle/75Ab861	USDA, Idaho
87Ab5932	79Ab3811/s7884	USDA, Idaho
88Ab3073**	Pennlo/PI 447276	USDA, Idaho
89Ab1545	81Ab5792//Ogle/Border	USDA, Idaho
89Ab4088	75Ab861/IL 75-3402	USDA, Idaho
89Ab6153	81Ab5772/Ogle	USDA, Idaho
90Ab1322	80Ab988/Monida	USDA, Idaho
91Ab406	81Ab5792/82Ab248	USDA, Idaho
91Ab502	83Ab3363/82Ab1078	USDA, Idaho
95Ab12743	86Ab1867/87Ab5597	USDA, Idaho
AbSp 19-9	83Ab3083/Monida	
AbSp 9-2	83Ab3119/Monida	
Ajay (82Ab1142)	74Ab1952/74Ab2608	USDA, Idaho
Appaloosa	Minn. II-22-220/Cayuse	Washington
Border	Otana//Coker X848-1-1-2/Cayuse	USDA, Idaho
Calibre	Gemini/Clintford	Saskatoon, Saskatchewan
Cayuse	Craig/Alamo	New York, Washington
CDC Boyer		
CDC Pacer		
Celsia		
Derby		
Dumont	Harmon/3/Kent/PC38, 39/OT189/Harmon Ham	Winnipeg, Manitoba
IA H61-3-3	Grlnd/B433//Hldn/3/Clntfrd*6/ B444/4/Ogle	

Table 1. Parentage and source of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998 (Cont.).

Entry	Parentage	Source
Minimax (NPB 86801)	Ogle/Ot 32-15, Sel. NZ 84193-3	Northwest Plant Breeding
Monida	Cayuse/Otana	USDA, Idaho
ND 852107	ND 810603/Otana	North Dakota
ND 860416	Otana/Valley	North Dakota
ND 910569	P832RS1-100-1/W83101	North Dakota
ND 930122	IL 81-2570/ND 811386	North Dakota
Newdak	RL 3038/Goodland/Ogle	North Dakota
NPB 86575	Ogle/OT 32-15, Sel. NA 84144	Northwest Plant Breeding
NPB 86586	Ogle/OT 3215, Sel. 85-9	Northwest Plant Breeding
NPB 871742	Ogle/Ot 3215, Sel. NZ 84144-22	Northwest Plant Breeding
NPB 871754	Ogle/Ot 3215, Sel. NZ 84144-12	Northwest Plant Breeding
NPB 88301	Ogle/Ot 3215//Border, A 84-3-50	Northwest Plant Breeding
NPB 88304	Ogle/Ot 3215//Border, A 84-3-91	Northwest Plant Breeding
Ogle	Brave/Tyler/Egdolon 23	Illinois
Otana	CI 5345/Zanster	USDA, Idaho, Montana
Park	Clinton/2#Overland	USDA, Idaho, Montana
Paul** (ND 862915**)	Nd 82846-6/ND 83156	
Pennuda		Pennsylvania
Powell (83Ab3250)	Cayuse/Monida	USDA, Idaho
Prairie		
Riel	RL 3057/Otana	Winnipeg, Manitoba
Rio Grande (81Ab5792)	74Ab2608/Cayuse	
Robert (W 82056)	OT 212/Rl 3064	Winnipeg, Manitoba
Trucker (SD 810109)	Moore//Dal/Nodaway 70	South Dakota
Valley (ND 820603)	Froker/RL 3038/2/Hudson/3/Porter	North Dakota
Whitestone (ND 870258)	Porter/ND 821742	

**Hullless oat cultivars.

Table 2. Production practices in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998.

Year	No. of Entries	Planting Date	Harvest Date	N (lb/a)	Fertilizer		Planting Rate (lb/a)	Rows per Plot	Row Spacing (inches)	Plot Length (feet)	Area Harvested	Herbicide (Material per acre)	Insecticide
					P ₂ O ₅ (lb/a)	K ₂ O (lb/a)							
1989	30	Mar 19	Jul 31	100	104		100	6	10	20	All	2 pt Bromina 0.5 pt Dicamba 0.5 pt 2,4-D	1.5 pt Lorsban 0.5 pt Lorsban
1990	30	Mar 23	Jul 18	225	57		100	6	10	20	All	0.25 pt Dicamba 1.0 pt 2,4-D 0.25 pt Dicamba	
1991	30	Mar 20	Jul 23	200			100	6	10	20	All	1.0 pt 2,4-D 0.25 pt Dicamba 1.0 pt 2,4-D	
1992	30	Mar 19	Jul 6	47			100	6	10	20	All	0.25 pt Dicamba 0.25 pt Dicamba	
1993	30	Mar 19	Jul 30	88			100	6	10	20	All	0.25 pt Dicamba 0.38 pt Dicamba	
1994	32	Mar 21	Jul 26	125	90		100	6	10	20	All	0.5 pt 2,4-D 0.25 pt Dicamba	1.0 pt Lorsban
1995	32	Mar 22	Aug 10	85			100	6	10	20	All	0.5 pt 2,4-D 0.25 pt Dicamba	
1996	30	Mar 28	Aug 5	185	208		100	6	10	20	All	0.25 pt Dicamba 0.25 pt Dicamba	
1997	30	Apr 14	Aug 28	80	104		100	6	10	20	All	0.4 pt 2,4-D 0.2 pt Dicamba 5 pt 2,4-D	
1998	30	Apr 10	Aug 6	130	54	62	100	6	10	20	All		

Table 3. Mean monthly and total annual precipitation (inches), NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1989	1.19	0.56	0.06	0.00	trace	trace	1.24	1.62	0.14	0.51	0.00	trace	5.32
1990	0.53	0.53	0.74	0.85	1.07	0.07	0.35	1.32	1.97	1.12	0.78	0.59	9.92
1991	0.59	0.26	0.67	0.01	0.27	0.69	0.35	0.58	1.38	0.38	2.07	1.01	8.26
1992	0.15	0.18	0.74	0.25	1.75	0.05	0.98	1.25	0.85	0.42	0.31	0.63	7.56
1993	2.05	0.82	0.93	0.28	0.38	0.04	0.03	2.06	0.84	1.25	0.47	0.15	9.30
1994	0.09	0.48	0.24	0.57	1.32	0.07	0.20	0.66	1.37	1.18	0.96	0.64	7.78
1995	0.57	0.14	1.45	1.28	0.90	0.03	0.23	1.88	2.04	0.10	0.14	0.39	9.15
1996	0.09	0.43	0.28	0.17	0.00	0.64	0.24	1.07	0.63	2.21	0.72	0.22	6.70
1997	1.03	0.48	0.03	2.88	0.82	0.62	1.28	1.12	2.68	0.43	0.67	0.80	12.84
1998	0.12	0.61	0.65	0.73	0.03	0.02	1.38	1.48	0.68	2.07	1.27	0.06	9.10
Mean	0.58	0.41	0.53	0.64	0.65	0.22	0.57	1.19	1.14	0.88	0.67	0.45	7.81

Source: Smeal et al., 2001.

Table 4. Mean monthly and mean annual maximum temperature (°F), NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1989	38	45	63	73	79	86	93	87	84	69	56	45	68
1990	41	47	58	67	73	90	90	87	82	68	54	36	66
1991	35	49	53	65	75	84	90	88	80	71	49	37	65
1992	38	50	58	71	76	84	86	87	81	72	48	36	66
1993	44	48	59	67	76	86	91	85	79	66	50	43	66
1994	46	46	61	66	76	90	93	91	81	66	50	46	68
1995	42	58	58	61	71	83	91	90	81	69	59	47	68
1996	45	54	58	68	82	87	91	89	76	66	53	43	68
1997	39	48	63	61	77	86	90	87	82	67	54	42	66
1998	45	46	57	62	78	85	92	90	86	68	56	45	68
Mean	41	49	59	66	76	86	91	88	81	68	53	42	67

Source: Smeal et al., 2001.

Table 5. Mean monthly and mean annual minimum temperature (°F), NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1989	16	24	34	40	47	54	63	58	54	40	26	16	39
1990	18	25	35	41	45	59	63	60	56	40	30	11	40
1991	16	25	30	34	44	53	59	59	51	40	27	21	38
1992	18	27	32	40	48	52	57	58	50	40	22	16	38
1993	26	28	30	36	45	52	57	58	48	38	25	20	39
1994	19	24	31	38	46	56	60	61	50	39	27	24	40
1995	24	29	31	35	43	50	58	61	52	37	29	23	39
1996	19	28	29	34	47	54	60	58	47	38	28	21	39
1997	19	24	28	32	46	54	59	59	54	37	28	20	38
1998	22	25	28	33	45	48	62	59	54	40	29	19	39
Mean	20	26	31	36	46	53	60	59	52	39	27	19	39

Source: Smeal et al., 2001.

Table 6. Oat grain yield* (bu/acre) for cultivars entered for more than one year in oat variety trials compared with Cayuse's mean during the same year, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998.

Entry	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Years Tested		% of	
											No.	Mean	Same	Years
82Ab248	116.2	71.9	200.5	77.2	102.8	87.9	148.6	177.8	118.4	132.8	10	123.4	114.3	107.9
Monida	90.3	82.3	179.1	92.3	108.9	76.6	153.6	176.2	85.6	133.4	10	117.8	114.3	103.1
Cayuse	104.9	66.0	186.0	75.8	99.6	68.1	139.5	177.8	107.4	118.2	10	114.3	114.3	100.0
Ogle	90.4	77.6	186.1	81.9	108.4	50.8	154.1	156.9	100.1	130.0	10	113.6	114.3	99.4
Powell														
(83Ab3250)	111.1	76.9	186.8	81.2	103.6	47.9	158.0	131.0	97.5	104.1	10	109.8	114.3	96.0
Ajay														
(82Ab1142)	93.5	80.8	196.1	86.7	114.9	23.4	149.7	150.1	88.5	107.6	10	109.1	114.3	95.5
Otana	75.6	77.1	156.7	80.4	108.7	30.5	145.9	155.7	90.4	94.0	10	101.5	114.3	88.8
86Ab664		90.6	208.3	94.5	103.3	42.8	151.0	160.5	125.6	115.1	9	121.3	115.4	106.1
87Ab5125			232.1	93.7	118.0	81.6	159.6	161.7	112.4	116.9	8	134.5	121.6	117.6
Park	90.8	65.8	182.8	90.1	104.2	43.5	138.4	158.9			8	109.3	114.7	95.6
ND 860416			161.5		95.8	89.7	148.6	149.3	84.9	102.8	8	108.9	121.6	95.3
Derby				75.9	104.6	98.2	154.5	164.6	115.8	124.5	7	119.7	112.3	104.7
Newdak		182.4		69.2	103.8	44.0	161.4	156.1	94.0		7	115.8	122.0	101.3
84Ab825				79.5	96.3	49.6	149.1	163.8	96.1	120.4	7	107.8	112.3	94.3
83Ab3119		79.2	185.8	69.6	86.9	82.2	146.7				7	106.8	105.7	93.4
Valley														
(ND 820603)	82.7	78.2	165.3	82.8	106.8	60.4	154.8				7	104.4	105.7	91.3
Calibre	35.3	53.6	186.9	74.1	95.6	66.9	155.0				7	95.3	105.7	83.4
87Ab4983					121.0	57.3	154.7	168.6	118.4	161.5	6	130.3	118.4	113.9
IA H61-3-3					96.5	83.5	149.8	138.9	87.6	129.2	6	114.3	118.4	99.9

Table 6. Oat grain yield* (bu/acre) for cultivars entered for more than one year in oat variety trials compared with Cayuse's mean during the same year, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998 (Cont.).

Entry	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Years Tested		Mean of % of		
											No.	Mean	Same	Years	
82Ab1178	97.1	89.1	206.4	81.7	106.6	91.2						6	112.0	100.1	98.0
81Ab5792	101.7	81.1	192.6	74.8	94.3	107.9						6	108.7	100.1	95.1
86Ab1867		77.1	173.4	57.3	89.5	60.8	142.7					6	100.1	105.8	87.6
Border	91.3	65.3	206.3	78.5	109.2	35.8						6	97.7	100.1	85.5
Appaloosa	92.1	58.9	164.1	77.4	101.5	42.8						6	89.5	100.1	78.3
90Ab1322					86.6		148.6	163.8	117.6	112.3		5	125.8	122.2	110.0
Whitestone (ND 870258)						58.4	151.2	154.1	89.8	145.7		5	119.8	122.2	104.8
Riel	112.9	91.4	178.1	90.3	110.6							5	116.7	106.5	102.0
89Ab6153					108.4	72.7	145.3	147.3	101.6			5	115.1	118.5	100.6
88Ab3073**				43.1	82.7	40.5	156.8	169.8				5	98.6	112.2	86.2
Robert (W 82056)	87.6	56.0	175.5	79.4	92.7							5	98.2	106.5	85.9
Prairie							177.4	177.8	115.4	142.4		4	153.3	135.7	134.0
89Ab4088							158.2	175.8	99.7	103.8		4	134.4	135.7	117.5
Celsia							146.0	127.8	114.1	134.1		4	130.5	135.7	114.1
91Ab502							140.8	154.5	100.4	126.0		4	130.4	135.7	114.1
89Ab1545						92.1	153.0	167.4	100.9			4	128.4	123.2	112.3
Rio Grande (81Ab5792)							146.8	143.3	85.2	129.4		4	126.2	135.7	110.4
80Ab5807	115.1	58.8	207.6	87.4	61.2	77.0	150.2					4	117.2	108.2	102.5
86Ab1616**								157.3				4	111.4	121.3	97.5

Table 6. Oat grain yield* (bu/acre) for cultivars entered for more than one year in oat variety trials compared with Cayuse's mean during the same year, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998 (Cont.).

Entry	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Years Tested		Mean of % of		
											No.	Mean	Same	Years	
80Ab5322	111.3	85.8	171.2	76.7								4	111.3	108.2	97.3
ND 852107			162.2	74.3	96.1	79.7						4	103.1	107.4	90.2
Trucker															
(SD 810109)															
Minimax	54.3	57.2	138.8	99.9								4	87.6	108.2	76.6
(NPB 86801)															
AbSp 9-2	28.9	37.1	172.4	74.0			203.4	125.3	125.2			4	78.1	108.2	68.3
83Ab5725												3	151.3	134.5	132.3
86Ab4582	87.0	95.1	202.9				164.6	105.2	108.9			3	128.3	119.0	112.2
Paul** (ND 862915**)												3	126.2	134.5	110.4
CDC Pacer						56.7	163.7	146.9				3	122.4	128.5	107.1
AbSp 19-9									112.1	141.9		2	127.0	112.8	111.1
91Ab406									111.1	136.3		2	123.7	112.8	108.2
CDC Boyer									113.0	121.6		2	117.3	112.8	102.6
80Ab988	99.6	69.1							80.5	109.4		2	95.0	112.8	83.0
NPB 871742	80.8	71.8										2	84.4	85.5	73.8
Dumont	83.5	67.7										2	76.3	85.5	66.7
												2	75.6	85.5	66.1
Mean	89.2	72.6	183.9	79.9	100.9	63.6	151.7	160.1	103.2	123.2			112.8		98.7

*Weights have been adjusted to 14% moisture and 32 lb/bu.

**Hullless oat cultivars.

Table 7. Characteristics of cultivars entered for more than one year in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998.

Cultivar	Yield* (bu/acre)		Test Weight (lb/bu)		Moisture Content (%)		Plant Height (inches)		Heading Date		Lodging (%)	
	Mean	Years	Mean	Years	Mean	Years	Mean	Years	Mean	Years	Mean	Years
82Ab248	123.4	10	31.8	10	9.3	10	38.8	10	Jun 19	6	4.7	5
Monida	117.8	10	31.0	10	10.4	10	41.1	10	Jun 18	6	30.1	5
Cayuse	114.3	10	30.5	10	10.3	10	40.8	10	Jun 17	6	22.1	5
Ogle	113.6	10	31.5	10	10.3	10	39.9	10	Jun 15	6	12.0	5
Powell (83Ab3250)	109.8	10	31.4	10	10.3	10	38.7	10	Jun 20	6	35.1	5
Ajay (82Ab1142)	109.1	10	30.8	10	10.4	10	36.3	10	Jun 19	6	19.5	5
Otana	101.5	10	30.9	10	10.1	10	41.9	10	Jun 16	6	28.3	5
86Ab664	121.3	9	30.4	9	9.4	9	40.0	9	Jun 16	6	19.6	5
87Ab5125	134.5	8	31.3	8	9.9	8	40.5	8	Jun 19	5	10.6	5
Park	109.3	8	32.1	8	9.3	8	38.5	8	Jun 16	5	18.3	3
ND												
860416	108.9	8	30.8	8	9.4	8	43.0	8	Jun 19	5	40.0	5
Derby	119.7	7	31.3	7	9.7	7	41.8	7	Jun 16	5	12.5	4
Newdak	115.8	7	32.9	7	8.8	7	39.5	7	Jun 17	5	9.4	4
84Ab825	107.8	7	30.0	7	11.8	7	39.1	7	Jun 18	5	10.9	4
83Ab3119	106.8	7	31.5	7	12.0	7	34.5	7	Jun 18	4	0.0	2
Valley (ND 820603)	104.4	7	32.7	7	11.9	7	35.7	7	Jun 14	4	9.0	2
Calibre	95.3	7	31.1	7	12.1	7	39.2	7	Jun 16	4	18.0	2
87Ab4983	130.3	6	29.9	6	11.3	6	40.9	6	Jun 17	4	8.9	4

Table 7. Characteristics of cultivars entered for more than one year in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998 (Cont.).

Cultivar	Yield* (bu/acre)		Test Weight (lb/bu)		Moisture Content (%)		Plant Height (inches)		Heading Date		Lodging (%)	
	Mean	Years	Mean	Years	Mean	Years	Mean	Years	Mean	Years	Mean	Years
IA H61-3-3	114.3	6	29.9	6	11.4	6	42.9	6	Jun 18	4	10.8	4
82Ab1178	112.0	6	32.0	6	10.5	6	32.6	6	Jun 12	3	5.0	1
81Ab5792	108.7	6	33.1	6	9.6	6	35.0	6	Jun 12	3	19.0	1
86Ab1867	100.1	6	33.4	6	8.9	6	34.0	6	Jun 13	4	0.0	2
Border	97.7	6	31.7	6	11.2	6	34.2	6	Jun 14	3	15.0	1
Appaloosa	89.5	6	30.2	6	10.7	6	34.1	6	Jun 13	3	25.0	1
90Ab1322	125.8	5	29.4	5	12.1	5	40.1	5	Jun 20	3	22.3	4
Whitestone (ND 870258)	119.8	5	29.7	5	8.8	5	40.3	5	Jun 20	3	11.3	4
Riel	116.7	5	34.7	5	9.3	5	38.6	5	Jun 12	3	25.0	1
89Ab6153	115.1	5	32.2	5	11.7	5	37.6	5	Jun 16	4	4.2	3
88Ab3073**	98.6	5	31.8	5	10.8	5	37.8	5	Jun 19	4	0.0	2
Robert (W 82056)	98.2	5	32.0	5	9.6	5	39.1	5	Jun 18	3	25.0	1
Prairie	153.3	4	29.5	4	8.6	4	44.8	4	Jun 19	3	27.0	4
89Ab4088	134.4	4	31.4	4	8.8	4	43.7	4	Jun 20	3	18.9	4
Celsia	130.5	4	29.0	4	8.3	4	48.7	4	Jun 26	3	6.3	4
91Ab502	130.4	4	30.5	4	8.5	4	41.7	4	Jun 17	3	19.3	4
89Ab1545	128.4	4	30.4	4	10.8	4	37.5	4	Jun 18	3	10.8	3
Rio Grande (81Ab5792)	126.2	4	30.0	4	8.6	4	46.2	4	Jun 20	3	13.6	4
80Ab5807	117.2	4	33.2	4	9.0	4	34.0	4	Jun 15	2	20.0	1
86Ab1616**	111.4	4	32.7	4	8.6	4	40.5	4	Jun 20	3	6.5	2

Table 7. Characteristics of cultivars entered for more than one year in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1989-1998 (Cont.).

Cultivar	Yield* (bu/acre)		Test Weight (lb/bu)		Moisture Content (%)		Plant Height (inches)		Heading Date (%)		Lodging (%)	
	Mean	Years	Mean	Years	Mean	Years	Mean	Years	Mean	Years	Mean	Years
480Ab5322	111.3	4	34.0	4	9.3	4	31.0	4	Jun 14	2	0.0	1
ND 852107	103.1	4	31.8	4	10.7	4	39.1	4	Jun 12	2	23.0	1
Trucker (SD 810109)	87.6	4	35.7	4	9.3	4	38.2	4	Jun 08	2	23.0	1
Minimax (NPB 86801)	78.1	4	27.6	4	13.3	4	28.2	4	Jun 15	2	0.0	1
AbSp 9-2	151.3	3	30.4	3	9.5	3	44.8	3	Jun 20	2	32.2	3
83Ab3725	128.3	3	32.9	3	9.9	3	31.2	3	Jun 11	1	3.0	1
86Ab4582	126.2	3	29.1	3	9.2	3	45.3	3	Jun 20	2	58.3	3
Paul** (ND862915**)	122.4	3	29.1	3	10.7	3	39.9	3	Jun 17	2	0.0	2
CDC Pacer	127.0	2	29.2	2	10.6	2	48.9	2	Jun 26	1	35.0	2
AbSp 19-9	123.7	2	31.3	2	9.3	2	45.6	2	Jun 26	1	35.5	2
91Ab406	117.3	2	28.2	2	9.6	2	43.4	2	Jun 25	1	36.9	2
CDC Boyer	95.0	2	29.5	2	9.7	2	50.0	2	Jun 26	1	35.3	2
80Ab988	84.4	2	29.4	2	11.8	2	28.4	2	Jun 16	1		
NPB 871742	76.3	2	26.7	2	12.3	2	22.7	2	Jun 16	1		
Dumont	75.6	2	29.4	2	11.7	2	31.4	2	Jun 13	1		
Mean	112.8		31.0		10.2		38.9		Jun 17		17.5	

*Weights have been adjusted to 14% moisture and 32 lb/bu.

**Hullless oat cultivars.

Table 8. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1989.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)
82Ab248	116.2	31.2	12.8	30.5
80Ab4725	115.1	33.3	11.2	25.0
80Ab5807	115.1	32.9	11.7	32.8
Riel	112.9	33.3	11.2	37.8
80Ab5322	111.3	32.1	13.1	30.5
Powell (83Ab3250)	111.1	32.7	11.4	31.3
Cayuse	104.9	32.2	11.3	35.0
75Ab861	104.6	31.5	12.8	35.8
81Ab5792	101.7	31.9	10.7	31.0
80Ab988	99.6	30.4	15.7	32.3
83Ab3119	97.2	32.2	12.1	28.0
82Ab1178	97.1	31.9	12.3	27.8
Ajay (82Ab1142)	93.5	30.0	16.7	25.8
Appaloosa	92.1	30.2	12.1	32.3
Border	91.3	32.5	11.9	35.3
Park	90.8	32.3	12.6	38.8
Ogle	90.4	29.9	13.8	30.8
Monida	90.3	31.0	13.4	34.8
Robert (W 82056)	87.6	30.8	14.8	39.0
83Ab3725	87.0	32.3	12.6	27.0
Dumont	83.5	29.8	14.8	34.3
74Ab2608	83.3	31.6	13.2	34.8
Valley (ND 820603)	82.7	32.5	11.9	30.8
NPB 871742	80.8	25.3	16.3	24.3
Otana	75.6	31.8	11.8	38.0
NPB 86586	71.7	24.9	18.5	22.5
NPB 86575	65.9	23.4	20.0	22.8
Trucker (SD 810109)	54.3	33.8	11.9	37.3
Calibre	35.3	26.1	18.5	38.0
Minimax (NPB 86801)	28.9	20.8	27.8	24.8
Mean	89.1	30.5	14.0	31.6
LSD (0.05)	28.0	2.7	4.2	4.2
CV (%)	22.3	6.3	21.6	9.5

*Yields have been adjusted to 14% moisture and 32 lb/bu.

Table 9. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1990.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Heading Date
83Ab3725	95.1	30.8	8.4	26.0	June 11
Riel	91.4	32.9	9.1	30.8	June 08
86Ab664	90.6	28.0	8.1	28.0	June 08
82Ab1178	89.1	30.6	8.1	22.5	June 08
80Ab5322	85.8	28.4	8.1	24.8	June 16
Monida	82.3	29.5	8.4	28.8	June 13
81Ab5792	81.1	31.4	8.0	26.0	June 08
Ajay (82Ab1142)	80.8	30.8	8.2	21.5	June 18
83Ab3119	79.2	25.4	7.4	25.8	June 19
Valley (ND 820603)	78.2	32.9	8.1	27.0	June 08
Ogle	77.6	30.1	8.3	29.5	June 05
Otana	77.1	30.4	8.4	33.0	June 16
86Ab1867	77.1	34.4	8.4	24.0	June 04
Powel (83Ab3250)	76.9	29.5	8.2	24.3	June 18
82Ab248	71.9	28.6	7.9	24.0	June 16
NPB 871742	71.8	28.0	8.3	21.0	June 16
NPB 871754	69.9	26.5	8.0	21.3	June 16
80Ab988	69.1	28.4	7.9	24.5	June 16
Dumont	67.7	28.9	8.6	28.5	June 13
Cayuse	66.0	29.0	7.8	29.3	June 13
Park	65.8	28.3	8.0	30.3	June 18
Border	65.3	29.8	8.1	25.8	June 13
NPB 88304	63.0	25.0	8.1	20.5	June 11
Appaloosa	58.9	27.4	7.6	28.8	June 13
80Ab5807	58.8	28.9	7.6	25.8	June 18
Trucker (SD 810109)	57.2	32.8	8.3	33.0	June 05
NPB 88301	57.1	24.9	7.7	21.3	June 11
Robert (W 82056)	56.0	29.0	8.2	26.5	June 18
Calibre	53.6	29.1	9.0	31.3	June 11
Minimax (NPB 86801)	37.1	25.3	8.0	23.8	June 19
Mean	71.7	29.2	8.1	26.2	June 13
LSD (0.05)	16.0	2.8	0.8	4.2	5 days
CV (%)	16.1	6.7	7.0	11.2	29.1

*Yields have been adjusted to 14% moisture and 32 lb/bu.

Table 10. Yield and other characteristics of cultivars entered in oat variety trials grown on NAPI field 121B, NMSU's Agricultural Science Center at Farmington, N.M., 1991.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Lodging (%)
87Ab5125	232.1	36.0	8.7	43.3	0
86Ab664	208.3	33.3	8.6	46.8	33
80Ab5807	207.6	35.3	8.7	45.3	20
82Ab1178	206.4	35.8	8.7	41.3	5
Border	206.3	34.0	8.5	47.5	15
83Ab3725	202.9	35.5	8.6	40.5	3
82Ab248	200.5	33.0	8.5	41.8	0
Ajay (82Ab1142)	196.1	35.0	8.6	38.0	10
81Ab5792	192.6	35.0	8.7	44.0	19
Calibre	186.9	34.8	8.8	52.0	36
Powell 83Ab3250	186.8	34.8	8.7	43.5	38
Ogle	186.1	36.3	9.0	47.3	0
Cayuse	186.0	33.8	8.9	48.3	30
83Ab3119	185.8	34.5	8.6	39.8	0
Park	182.8	35.5	8.9	48.3	35
Newdak	182.4	34.0	8.7	44.3	0
Monida	179.1	32.5	8.9	50.0	69
Riel	178.1	36.0	9.0	48.0	25
Robert (W 82056)	175.5	34.5	8.5	50.8	25
86Ab1867	173.4	37.0	8.7	38.5	0
Minimax (NPB 86801)	172.4	30.8	8.5	29.8	0
80Ab5322	171.2	35.8	8.7	40.0	0
Valley (ND 820603)	165.3	36.0	9.0	43.3	18
Appaloosa	164.1	32.3	8.7	46.8	25
ND 852107	162.2	33.8	8.9	49.0	23
ND 860416	161.5	34.3	9.1	49.5	60
Otana	156.7	34.0	9.1	53.0	61
87Ab5932	143.8	36.8	9.4	47.0	13
Trucker (SD 810109)	138.8	38.0	9.1	47.3	23
Pennuda	109.6	35.5	9.2	38.8	0
Mean	180.0	34.8	8.8	44.8	19
LSD (0.05)	28.1	1.5	0.4	3.2	
CV (%)	11.0	3.1	3.2	5.0	

*Yields have been adjusted to 14% moisture and 32 lb/bu.

Table 11. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1992.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Heading Date
Trucker (SD 810109)	99.9	38.3	7.8	35.0	June 11
ND 860416	95.8	36.8	7.9	35.5	June 16
86Ab664	94.5	33.5	7.6	30.5	June 12
87Ab5125	93.7	35.8	8.0	29.5	June 16
Monida	92.3	37.3	8.3	35.5	June 16
Riel	90.3	37.3	8.0	32.5	June 10
Park	90.1	36.0	8.5	34.0	June 16
80Ab5807	87.4	35.8	8.1	32.0	June 13
Ajay (82Ab1142)	86.7	34.5	8.5	26.3	June 16
Valley (ND 820603)	82.8	34.8	8.2	33.3	June 12
Ogle	81.9	35.8	7.2	34.0	June 12
82Ab1178	81.7	33.5	7.5	29.0	June 12
Powell (83Ab3250)	81.2	39.3	8.7	32.0	June 17
Otana	80.4	34.3	7.5	37.3	June 16
84Ab825	79.5	33.0	7.7	30.5	June 14
Robert (W 82056)	79.4	34.0	7.7	32.8	June 17
Border	78.5	34.5	7.9	32.3	June 13
Appaloosa	77.4	34.4	8.3	32.3	June 11
82Ab248	77.2	40.3	8.1	29.5	June 16
80Ab5322	76.7	39.8	7.3	28.5	June 13
Derby	75.9	34.5	7.8	38.3	June 14
Cayuse	75.8	32.5	8.3	35.0	June 12
81Ab5792	74.8	39.5	7.7	31.8	June 12
ND 852107	74.3	33.5	7.0	34.5	June 12
Calibre	74.1	36.0	8.6	35.3	June 14
Minimax (NPB 86801)	74.0	33.3	8.7	34.5	June 12
83Ab3119	69.6	37.3	8.0	27.3	June 16
Newdak	69.2	38.0	8.5	33.3	June 15
86Ab1867	57.3	37.3	7.8	28.3	June 04
88Ab3073**	43.1	35.0	8.6	29.0	June 18
Mean	79.8	35.8	8.0	32.3	June 13
LSD (0.05)	19.1	4.2	1.4	2.3	
CV (%)	16.9	8.2	12.5	5.1	

*Yields have been adjusted to 14% moisture and 32 lb/bu.

**Hullless oat cultivars.

Table 12. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1993.

Cultivar	Yields* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Heading Date
87Ab4983	121.0	33.9	8.5	38.0	June 10
87Ab5125	118.0	31.9	9.2	42.8	June 21
Ajay (82Ab1142)	114.9	31.8	9.0	43.8	June 19
Riel	110.6	34.1	9.1	43.8	June 19
Border	109.2	31.8	8.9	42.5	June 17
Monida	108.9	31.8	9.2	46.5	June 19
Otana	108.7	33.1	9.1	46.8	June 17
89Ab6153	108.4	37.1	8.7	37.3	June 09
Ogle	108.4	32.8	8.8	43.5	June 16
Valley (ND 820603)	106.8	34.0	8.7	44.0	June 16
82Ab1178	106.6	32.0	8.5	44.0	June 17
Derby	104.6	33.8	8.7	45.0	June 13
Park	104.2	34.3	8.8	42.0	June 10
Newdak	103.8	34.5	8.9	45.0	June 09
Powell (83Ab3250)	103.6	33.0	9.4	44.3	June 19
86Ab664	103.3	32.1	8.4	40.8	June 18
82Ab248	102.8	33.0	8.9	43.5	June 18
Appaloosa	101.5	31.6	8.6	42.3	June 17
Cayuse	99.6	33.9	9.1	44.5	June 19
IA H61-3-3	96.5	33.6	8.4	46.0	June 12
84Ab825	96.3	33.0	8.6	40.5	June 17
ND 852107	96.1	33.1	8.8	44.3	June 13
Calibre	95.6	32.6	9.0	43.3	June 19
81Ab5792	94.3	32.6	8.6	43.5	June 16
Robert (W 82056)	92.7	31.9	8.8	46.3	June 19
ND 860416	89.7	32.8	8.7	44.3	June 17
86Ab1867	89.5	32.5	8.7	42.0	June 11
83Ab3119	86.9	32.6	8.5	40.0	June 16
88Ab3073**	82.7	33.3	8.9	42.8	June 19
86Ab1616**	61.2	34.3	9.1	42.8	June 21
Mean	100.9	33.1	8.8	43.2	June 16
LSD (0.05)	n.s.	2.0	n.s.	2.9	3.0
CV (%)	18.5	4.3	6.0	4.8	11.6

*Yields have been adjusted to 14% moisture and 32 lb/bu.

**Hullless oat cultivars.

Table 13. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1994.

Cultivar	Yields* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)
81Ab5792	107.9	28.3	13.6	33.7
Derby	98.2	27.7	18.2	29.3
89Ab1545	92.1	29.0	16.3	26.3
82Ab1178	91.2	28.3	17.8	30.7
82Ab248	87.9	29.7	12.0	29.3
90Ab1322	86.6	28.0	26.7	26.7
IA H61-3-3	83.5	26.3	24.6	28.0
83Ab3119	82.2	26.3	31.1	28.0
87Ab5125	81.6	29.0	20.2	24.3
ND 852107	79.7	26.7	17.9	28.7
86Ab1616**	77.0	33.7	9.4	30.0
Monida	76.6	27.3	22.1	34.3
89Ab6153	72.7	32.3	23.5	27.3
Cayuse	68.1	27.3	19.2	30.0
Calibre	66.9	28.3	22.8	29.7
86Ab1867	60.8	28.0	12.0	25.7
Valley (ND 820603)	60.4	27.0	28.9	27.0
Whitestone (ND 870258)	58.4	27.0	10.2	21.3
87Ab4983	57.3	30.0	21.1	23.0
Paul (ND 862915**)	56.7	28.0	16.4	33.7
Ogle	50.8	28.3	21.7	30.3
84Ab825	49.6	27.0	31.0	25.3
Powell (83Ab3250)	47.9	29.0	21.9	26.3
Newdak	44.0	29.7	10.0	21.0
Park	43.5	28.0	11.7	23.0
86Ab664	42.8	27.3	17.2	27.7
Appaloosa	42.8	25.3	18.8	22.0
88Ab3073**	40.5	30.0	20.4	26.7
ND 860416	38.8	23.3	15.0	25.0
Border	35.8	27.7	21.9	22.0
Otana	30.5	27.0	20.1	22.0
Ajay (82Ab1142)	23.4	28.7	18.2	25.0
Mean	63.6	28.1	19.1	27.0
LSD (0.05)	n.s.	n.s.	n.s.	n.s.
CV (%)	77.1	12.0	47.5	25.8

*Weights have been adjusted to 14% moisture and 32 lb/bu.

**Hulless oat cultivars.

Table 14. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1995.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Lodging (%)	Heading Date
Prairie	177.4	29.8	8.1	44.5	3	June 22
Paul** (ND862915**)	163.7	30.5	8.1	46.3	0	June 22
Newdak	161.4	33.3	8.2	44.8	0	June 22
87Ab5125	159.6	30.8	7.9	43.5	0	June 22
89Ab4088	158.2	33.3	8.6	44.0	0	June 23
Powell (83Ab3250)	158.0	29.5	8.0	45.3	0	June 24
88Ab3073**	156.8	30.8	8.3	46.8	0	June 25
Calibre	155.0	31.0	8.2	44.8	0	June 22
Valley (ND 820603)	154.8	31.8	8.3	44.5	0	June 22
87Ab4983	154.7	31.8	8.3	45.5	0	June 22
Derby	154.5	31.8	7.8	43.3	0	June 20
Ogle	154.1	31.5	8.5	45.3	0	June 24
Monida	153.6	31.8	8.1	42.5	0	June 24
89Ab1545	153.0	31.5	8.1	42.5	0	June 19
Whitestone (ND 870258)	151.2	31.5	8.1	45.5	0	June 23
86Ab664	151.0	29.3	7.9	44.5	0	June 22
86Ab1616**	150.2	32.3	8.1	46.3	0	June 22
IA H61-3-3	149.8	31.5	8.4	48.3	0	June 23
Ajay (82Ab1142)	149.7	31.3	8.0	45.0	0	June 23
84Ab825	149.1	30.3	8.2	45.0	0	June 24
82Ab248	148.6	31.5	7.9	44.0	0	June 22
90Ab1322	148.6	31.0	7.6	40.5	0	June 25
ND 860416	148.6	32.0	8.5	46.5	24	June 23
Rio Grande (81Ab5792)	146.8	31.5	7.9	46.5	0	June 22
83Ab3119	146.7	31.5	8.2	44.0	0	June 22
Celsia	146.0	29.5	7.8	49.5	0	June 30
Otana	145.9	31.0	7.9	45.5	0	June 23
89Ab6153	145.3	32.3	8.0	42.0	0	June 21
86Ab1867	142.7	31.0	8.0	45.3	0	June 24
91Ab502	140.8	32.0	8.5	40.3	0	June 19
Cayuse	139.5	31.3	8.7	43.5	0	June 22
Park	138.4	32.3	8.3	46.0	0	June 22
Mean	151.7	31.1	8.1	44.8		June 23
LSD (0.05)	n.s.	2.1	n.s.	3.8		2.0
CV (%)	12.6	4.7	6.2	6.1		6.1

*Yields have been adjusted to 14% moisture and 32 lb/bu.

**Hulless oat cultivars.

Table 15. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1996.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Heading Date	Lodging (%)
AbSp 9-2	203.4	31.1	7.9	43.0	Jun 17	0
82Ab248	177.8	31.4	7.8	45.8	Jun 16	0
Cayuse	177.8	29.0	7.7	46.0	Jun 18	5
Prairie	177.8	29.4	7.5	42.0	Jun 13	0
Monida	176.2	29.8	7.6	44.0	Jun 16	0
89Ab4088	175.8	31.4	7.7	41.8	Jun 16	3
88Ab3073**	169.8	29.8	7.6	43.8	Jun 16	0
87Ab4983	168.6	27.4	7.8	43.5	Jun 14	0
89Ab1545	167.4	32.2	7.7	41.5	Jun 13	0
86Ab4582	164.6	30.2	7.5	42.8	Jun 17	40
Derby	164.6	33.6	7.6	42.0	Jun 12	0
90Ab1322	163.8	30.9	7.7	40.5	Jun 15	0
84Ab825	163.8	29.0	7.7	43.5	Jun 18	33
87Ab5125	161.7	27.2	7.3	45.5	Jun 16	0
86Ab664	160.5	29.8	7.6	42.8	Jun 17	20
Park	158.9	30.3	7.7	45.3	Jun 17	20
86Ab1616**	157.3	30.4	7.6	42.8	Jun 17	13
Ogle	156.9	29.8	7.6	44.0	Jun 15	0
Newdak	156.1	29.3	7.7	46.8	Jun 17	15
Otana	155.7	29.3	7.6	43.3	Jun 17	10
91Ab502	154.5	31.9	7.8	38.0	Jun 13	13
Whitestone (ND 870258)	154.1	29.8	7.6	40.8	Jun 14	0
Ajay (82Ab1142)	150.1	29.5	7.7	42.8	Jun 15	0
ND 860416	149.3	29.8	7.6	44.0	Jun 19	18
89Ab6153	147.3	29.5	7.7	40.8	Jun 14	0
Pual** (ND862915**)	146.9	28.8	7.5	39.8	Jun 13	0
Rio Grande (81Ab5792)	143.3	30.1	7.5	41.3	Jun 17	18
IA H61-3-3	138.9	29.3	7.7	44.5	Jun 17	0
Powell (83Ab3250)	131.0	27.4	7.7	45.3	Jun 18	15
Celsia	127.8	26.7	7.3	47.0	Jun 23	1
Mean	160.0	29.8	7.6	43.1	Jun 16	8
LSD (0.05)	34.6	3.4	0.3	4.2		
CV (%)	15.4	8.1	3.2	7.0		

*Yields have been adjusted to 14% moisture and 32 lb/bu.
**Hulless oat cultivars.

Table 16. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1997.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Heading Date	Lodging (%)
86Ab664	125.6	32.3	10.7	46.0	June 24	15.0
AbSp 9-2	125.3	32.6	10.3	40.3	June 23	62.5
82Ab248	118.4	31.7	10.3	44.8	June 24	2.5
87Ab4983	118.4	28.0	13.4	41.8	June 23	22.5
90Ab1322	117.6	30.0	10.6	40.0	June 22	25.0
Derby	115.8	30.6	10.0	44.3	June 23	15.8
Prairie	115.4	30.2	10.0	40.0	June 23	50.0
Celsia	114.1	32.2	10.2	42.5	June 26	0.0
91Ab406	113.0	29.8	11.4	36.3	June 25	33.8
87Ab5125	112.4	32.0	10.0	41.5	June 22	20.0
CDC Pacer	112.1	31.4	12.9	43.3	June 26	25.0
AbSp 19-9	111.1	34.2	10.0	38.3	June 26	25.0
Cayuse	107.4	27.9	13.4	43.0	June 23	27.5
86Ab4582	105.2	30.0	11.6	43.0	June 24	85.0
89Ab6153	101.6	30.0	10.7	40.5	June 22	12.5
89Ab1545	100.9	28.8	11.0	39.8	June 22	32.5
91Ab502	100.4	31.2	9.6	38.3	June 20	20.0
Ogle	100.1	31.1	10.0	43.3	June 23	5.0
89Ab4088	99.7	31.5	10.3	38.0	June 23	32.5
Powell (83Ab3250)	97.5	31.2	10.3	41.3	June 26	52.5
84Ab825	96.1	29.4	10.9	39.5	June 22	7.5
Newdak	94.0	31.2	9.7	41.3	June 22	22.5
Otana	90.4	30.1	11.1	48.8	June 24	22.5
Whitestone (ND870258)	89.8	32.2	10.0	42.8	June 23	35.0
Ajay (82Ab1142)	88.5	30.1	11.3	44.3	June 24	32.5
IA H61-3-3	87.6	30.7	11.2	41.0	June 23	20.0
Monida	85.6	31.3	10.2	40.5	June 23	33.3
Rio Grande (81Ab5792)	85.2	30.0	10.5	43.8	June 23	7.5
ND 860416	84.9	30.7	10.5	41.5	June 23	35.0
CDC Boyer	80.5	31.6	10.8	45.5	June 26	27.5
Mean	103.1	30.8	10.8	41.8	June 23	26.9
LSD (0.05)	27.7	2.8	2.5	5.5		38.4
CV (%)	19.1	6.5	16.2	9.4		101.5

*Yields have been adjusted to 14% moisture and 32 lb/bu.
**Hulless oat cultivars.

Table 17. Yield and other characteristics of cultivars entered in oat variety trials, NMSU's Agricultural Science Center at Farmington, N.M., 1998.

Cultivar	Yield* (bu/acre)	Bushel Weight (lb/bu)	Moisture (%)	Plant Height (inch)	Lodging (%)
95Ab12743	166.9	27.0	8.1	45.0	53
87Ab4983	161.5	28.3	8.4	53.5	13
Whitestone (ND 870258)	145.7	28.0	8.2	51.0	10
Prairie	142.4	28.5	8.6	52.8	55
CDC Pacer	141.9	27.0	8.3	54.5	45
AbSp 19-9	136.3	28.3	8.6	52.8	46
Celsia	134.1	27.5	7.9	55.8	24
Monida	133.4	27.8	8.0	54.3	48
82Ab248	132.8	28.0	8.8	54.3	16
Ogle	130.0	29.3	8.4	50.8	55
Rio Grande (81Ab5792)	129.4	28.5	8.6	53.0	29
IA H61-3-3	129.2	27.8	8.3	49.5	23
91Ab502	126	26.8	8.2	50.3	44
ND 910569	125.7	30.0	8.4	47.3	19
AbSp 9-2	125.2	27.5	10.2	51.0	34
Derby	124.5	27.3	8.1	50.3	34
91Ab406	121.6	26.5	7.8	50.5	40
84Ab825	120.4	28.3	8.5	49.5	36
Cayuse	118.2	28.5	8.6	53.3	53
87Ab5125	116.9	27.3	7.6	53.5	33
86Ab664	115.1	27.8	8.1	52.8	30
90Ab1322	112.3	27.3	7.7	52.8	31
CDC Boyer	109.4	27.3	8.5	54.5	43
86Ab4582	108.9	27.0	8.6	50.0	50
Ajay (82Ab1142)	107.6	26.0	8.0	50.3	55
Powell (83Ab3250)	104.1	27.5	8.3	53.0	70
89Ab4088	103.8	29.5	8.5	51.0	40
ND 860416	102.8	26.8	7.9	57.5	63
ND 930122	97.1	29.3	8.0	46.5	69
Otana	94.0	28.0	8.3	51.3	48
Mean	123.9	27.8	8.3	51.7	40
LSD (0.05)	32.8	1.4	n.s.	4.7	
CV (%)	18.8	3.7	11.3	6.5	

*Yields have been adjusted to 14% moisture and 32 lb/bu.

**Hulless oat cultivars.

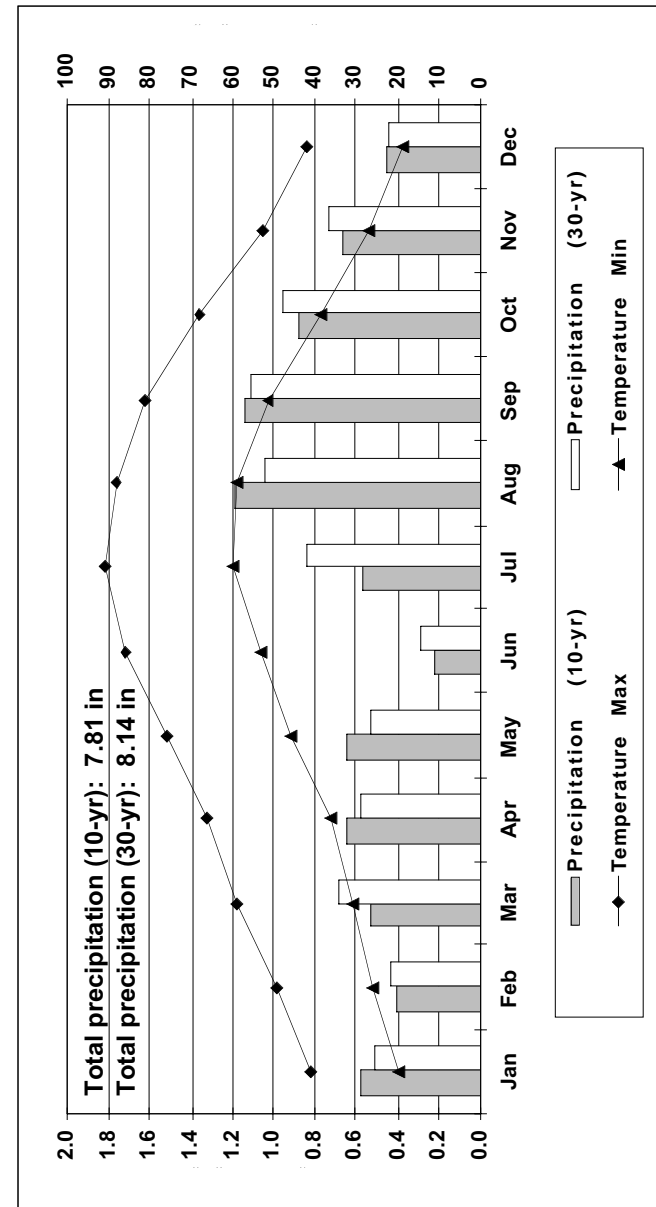


Figure 1. Ten-year (1989-1998) and 30-year (1969-1998) total monthly precipitation (inches), mean monthly maximum temperature (°F) (1989-1998) and mean monthly minimum temperature (°F) (1989-1998), NMSU's Agricultural Science Center at Farmington, N.M.

