

Project Title: Montana Statewide Spring Oat Cultivar Performance

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Objectives: To Evaluate the agronomic performance of new and existing cultivars and experimental lines of oats under various growing conditions and environments of Montana.

Results:

The 2003 Montana State Spring Oat Yield Trial was grown at four dryland locations (Table 2 to 6) and four irrigated/high rainfall sites (Tables 8 to 12) in replicated multi-row plots. Yield, test weight, Julian heading date, plant height, and protein are summarized across locations in Tables 1 and 7.

The average yield at **Bozeman** was 23 bu/A greater than the previous year and ranged from a high of 170 bu/A for Monida to a low of 144 bu/A for Otana. Test weights were similar to the previous year, with an average of 36.6 lb/bu during 2003.

The average yield at **Havre** was 43 bu/A less than the previous year and ranged from a high of 31 bu/A for Monida/75Ab861 to a low of 20 bu/A for CDC Dancer. Test weights also were lower compared with 2002, with an average of 28.8 lb/bu during 2003.

Irrigated yields at **Huntley** also were less than the previous year, and differed by 55 bu/A. Yields ranged from a high of 164 bu/A for Monico to a low of 120 bu/A for Ajay. Although hot-dry conditions during grain-filling contributed to this response, the fact that the study was irrigated only once during the growing season also figured in this outcome. The dryland yield results provided a reversal in this overall trend, with average yields being 44 bu/A higher in 2003 compared to the previous year. This response is likely due to the fact that the study site had been fallowed for two growing seasons. The average dryland yield was 65 bu/A and range from a high of 74 bu/A for Rio Grande to a low of 50 bu/A for Celsia.

The average yield at **Kalispell** was 120 bu/A less than the previous year and ranged from a high of 114 bu/A for CDC Pacer to a low of 84 bu/A for Ajay. However, test weights were 1 lb/bu greater compared with 2002, with an average of 36.1 lb/bu during 2003. Similar to most other locations, hot-dry conditions during grain-

filling factored in this response. In addition, the oat nursery has historically been established in a fine textured silt loam soil, whereas the 2003 nursery was established on a sandy loam soil. The lower moisture holding capacity further exacerbated the poor conditions during grain-filling, resulting in lower yields.

The average yield at **Moccasin** was 25 bu/A less than the previous year and ranged from a high of 29 bu/A for CDC Dancer to a low of 17 bu/A for IAH61-3-3/90Ab1322. Test weights also were lower compared with 2002, with an average of 29.7 lb/bu during 2003.

Dryland oat yields at **Sidney** were higher in 2003 verse 2002 by an average of 67 bu/A. Yields ranged from a high of 140 bu/A for 83Ab3119/Monida to a low of 104 bu/A for Ajay. Irrigated oat yields averaged 181 bu/A, ranging from a high of 212 bu/A for Killdeer to a low of 164 for Ajay.

Summary:

Oat yields were variable across the state relative to previous years. Although most sites experienced hot-dry conditions during grain-filling, stored soil moisture levels appeared to be the most important detriment of yield. Rio Grande, Monico, and Monida were the highest yielding cultivars under irrigated/high rainfall conditions, whereas Monida/75Ab861 and 83Ab3119/Monida were the highest yielding cultivars under dryland conditions. Ajay was consistently the lowest yielding cultivar, regardless of whether it was produced under dryland or high rainfall/irrigated conditions.

Future Plans:

The Montana Statewide Oat Yield Trial will be continued in 2004.

Table 1. 2003 Oat Statewide Dryland Summary

Id	Pedigree	Yield	Test Weight	Heading	Plant Ht	Protein
		bu/ac	lb/bu	Date	inches	Percent
87AB5632	Monida/75Ab861	65.4	31.6	179.6	27.6	12.2
ABSP14-6	83Ab3119/Monida	64.5	31.5	179.1	28.9	12.3
ND930122	Killdeer	62.6	33.4	177.3	27.4	13.1
OT373	CDC Dancer	62.2	33.2	178.2	30.8	12.5
ABSP 9-2	Monico	61.7	32.7	177.8	26.7	12.3
CI483126	Monida	60.7	30.8	181.1	28.5	12.6
OT351	CDC Pacer	60.5	31.6	179.1	30.7	12.7
ABSP19-9	83Ab3083/Monida	60.3	31.2	181.1	26.1	12.7
SiteMean	SITE MEAN *****	59.7	31.9	179.9	27.2	12.7
90Ab1322	Maverick	59.6	30.2	180.1	24.7	12.7
81Ab5792	Rio Grande	59.5	31.2	178.2	25.3	12.7
95A10854	(95Ab10854) 84Ab835/Monid	58.9	31.6	184.2	26.0	12.6
CI 9252	Otana	58.5	33.0	179.1	32.0	12.5
98AB6646	IAH61-3-3/90Ab1322	57.1	33.0	180.6	25.3	12.3
PI583735	Celsia	55.8	31.5	182.7	30.2	13.2
94AB5543	83Ab3119/86Ab1867A	54.1	31.7	182.1	25.6	13.0
PI537436	Ajay	51.0	31.9	179.7	21.3	13.3

Table 2. 2003 Oat Statewide Dryland Summary - Yield (bu/ac)

Id	Pedigree	Havre	Sidney	Moccasin	Huntley	Avg	Byx	Rsq
		81Ab5792	Rio Grande	26.1	114.1	23.8	73.8	59.5
87AB5632	Monida/75Ab861	30.8	134.9	22.5	73.6	65.4	1.09	1.00
90Ab1322	Maverick	29.0	122.3	25.9	61.3	59.6	0.95	1.00
94AB5543	83Ab3119/86Ab1867A	26.4	115.9	19.0	55.1	54.1	0.93	0.99
95A10854	84Ab835/Monid	28.5	115.5	27.0	64.7	58.9	0.88	1.00
98AB6646	IAH61-3-3/90Ab1322	23.2	119.9	17.0	68.2	57.1	1.01	0.99
ABSP 9-2	Monico	25.3	128.3	24.0	69.1	61.7	1.04	1.00
ABSP14-6	83Ab3119/Monida	24.2	140.6	25.9	67.3	64.5	1.15	0.99
ABSP19-9	83Ab3083/Monida	27.9	129.6	23.1	60.7	60.3	1.04	1.00
CI 9252	Otana	21.1	125.9	21.5	65.6	58.5	1.05	1.00
CI483126	Monida	24.2	124.3	26.6	67.7	60.7	0.99	1.00
ND930122	Killdeer	24.1	131.5	23.6	71.4	62.6	1.08	1.00
OT351	CDC Pacer	24.3	124.0	23.4	70.6	60.5	1.01	1.00
OT373	CDC Dancer	19.9	127.3	29.4	72.3	62.2	1.03	0.98
PI537436	Ajay	23.9	104.4	25.1	50.6	51.0	0.80	1.00
PI583735	Celsia	26.7	121.3	24.5	50.5	55.8	0.95	0.98
SiteMean	SITE MEAN *****	25.3	124.3	23.9	65.2	59.7	1.00	1.00
C.V.	C.V. (S/Mean) * 100	10.15	7.11	27.00	10.86	***	***	***
F-Value		3.72	2.12	0.66	3.45	***	***	***
L.S.D.	L.S.D. (.05)	4.29	14.42	10.76	11.80	***	***	***

Table 3. 2003 Oat Statewide Dryland Summary - Test Weight (lb/bu)

Id	Pedigree	Havre	Sidney	Moccasin	Huntley	Avg	Byx	Rsq
81Ab5792	Rio Grande	30.8	34.5	28.4	31.1	31.2	0.64	0.70
87AB5632	Monida/75Ab861	28.5	34.7	31.0	32.3	31.6	0.75	0.92
90Ab1322	Maverick	28.1	34.2	27.4	30.9	30.2	0.90	0.95
94AB5543	83Ab3119/86Ab1867A	27.6	37.0	28.9	33.3	31.7	1.30	1.00
95A10854	() 84Ab835/Monid	26.2	36.3	31.2	32.5	31.6	1.16	0.85
98AB6646	IAH61-3-3/90Ab1322	29.2	38.2	30.9	33.8	33.0	1.17	0.98
ABSP 9-2	Monico	30.2	37.0	29.6	33.8	32.7	1.02	0.97
ABSP14-6	83Ab3119/Monida	28.9	34.8	30.8	31.5	31.5	0.72	0.92
ABSP19-9	83Ab3083/Monida	27.3	35.2	30.8	31.3	31.2	0.89	0.85
CI 9252	Otana	30.9	36.8	29.0	35.2	33.0	1.02	0.87
CI483126	Monida	30.3	32.8	28.6	31.3	30.8	0.46	0.76
ND930122	Killdeer	30.3	38.3	30.8	34.3	33.4	1.12	0.99
OT351	CDC Pacer	26.5	36.7	28.8	34.3	31.6	1.40	0.96
OT373	CDC Dancer	27.3	37.5	30.0	38.0	33.2	1.48	0.83
PI537436	Ajay	29.2	35.3	29.9	33.1	31.9	0.86	0.99
PI583735	Celsia	29.3	35.3	29.3	32.3	31.5	0.87	0.99
SiteMean	SITE MEAN *****	28.8	36.0	29.7	33.1	31.9	1.00	1.00
C.V.	C.V. (S/Mean) * 100	7.75	2.59	4.66	3.39	***	***	***
F-Value		1.37	8.26	1.33	8.31	***	***	***
L.S.D.	L.S.D. (.05)	3.72	1.52	2.95	1.87	***	***	***

Table 4. 2003 Oat Statewide Dryland Summary - Heading Date

Id	Pedigree	Havre	Sidney	Moccasin	Huntley	Avg	Byx	Rsq
81Ab5792	Rio Grande	180.3	171.0	189.7	171.7	178.2	1.11	1.00
87AB5632	Monida/75Ab861	182.3	173.3	191.0	171.7	179.6	1.13	0.99
90Ab1322	Maverick	182.0	172.7	189.7	176.0	180.1	0.94	0.98
94AB5543	83Ab3119/86Ab1867A	186.0	174.7	191.7	176.0	182.1	1.03	0.99
95A10854	84Ab835/Monid	187.0	178.0	191.0	181.0	184.2	0.73	0.96
98AB6646	IAH61-3-3/90Ab1322	181.7	173.3	191.0	176.3	180.6	0.97	0.97
ABSP 9-2	Monico	180.3	172.0	188.7	170.3	177.8	1.06	0.98
ABSP14-6	83Ab3119/Monida	180.0	174.0	190.3	172.0	179.1	1.02	0.96
ABSP19-9	83Ab3083/Monida	183.3	175.0	189.0	177.0	181.1	0.80	0.99
CI 9252	Otana	181.7	174.0	189.3	171.3	179.1	1.01	0.97
CI483126	Monida	184.7	175.0	189.0	175.7	181.1	0.86	0.98
ND930122	Killdeer	180.0	171.7	188.7	169.0	177.3	1.11	0.97
OT351	CDC Pacer	182.3	173.0	189.7	171.3	179.1	1.08	0.99
OT373	CDC Dancer	181.3	172.7	188.0	171.0	178.2	1.00	0.99
PI537436	Ajay	181.0	174.0	189.7	174.0	179.7	0.94	0.99
PI583735	Celsia	185.0	175.0	191.7	179.0	182.7	0.91	0.97
SiteMean	SITE MEAN *****	182.4	173.2	189.9	174.0	179.9	1.00	1.00
C.V.	C.V. (S/Mean) * 100	0.48	0.44	1.14	0.30	***	***	***
F-Value		18.69	21.76	0.81	125.91	***	***	***
L.S.D.	L.S.D. (.05)	1.46	1.23	3.61	0.88	***	***	***

Table 5. 2003 Oat Statewide Dryland Summary - Plant Height (in)

Id	Pedigree	Havre	Sidney	Moccasin	Huntley	Avg	Byx	Rsq
81Ab5792	Rio Grande	18.2	32.8	21.0	29.2	25.3	1.03	0.99
87AB5632	Monida/75Ab861	21.7	36.0	22.0	30.7	27.6	1.04	0.98
90Ab1322	Maverick	17.8	31.2	23.0	26.8	24.7	0.84	0.94
94AB5543	83Ab3119/86Ab1867A	20.5	33.7	20.0	28.3	25.6	0.98	0.96
95A10854	84Ab835/Monid	20.6	33.6	21.0	28.6	26.0	0.94	0.98
98AB6646	IAH61-3-3/90Ab1322	18.9	31.8	22.0	28.5	25.3	0.89	1.00
ABSP 9-2	Monico	19.3	34.5	22.0	31.0	26.7	1.09	1.00
ABSP14-6	83Ab3119/Monida	19.7	35.8	29.0	31.0	28.9	0.92	0.81
ABSP19-9	83Ab3083/Monida	21.0	34.6	21.0	27.8	26.1	0.96	0.95
CI 9252	Otana	22.9	40.7	27.0	37.5	32.0	1.27	0.99
CI483126	Monida	22.1	36.1	20.0	35.7	28.5	1.22	0.88
ND930122	Killdeer	21.5	35.0	23.0	30.2	27.4	0.95	0.99
OT351	CDC Pacer	22.4	38.8	26.0	35.7	30.7	1.17	0.99
OT373	CDC Dancer	22.2	39.2	26.0	35.6	30.8	1.20	0.99
PI537436	Ajay	16.4	30.3	16.0	22.7	21.3	0.98	0.93
PI583735	Celsia	23.3	38.1	29.0	30.3	30.2	0.85	0.85
SiteMean	SITE MEAN *****	20.5	34.8	23.0	30.6	27.2	1.00	1.00
C.V.	C.V. (S/Mean) * 100	5.85	4.69	***	5.21	***	***	***
F-Value		8.23**	12.12	***	17.70	***	***	***
L.S.D.	L.S.D. (.05)	2.01	2.66	***	2.66	***	***	***

Table 6. 2003 Oat Statewide Dryland Summary - Protein Percent

Id	Pedigree	Havre	Sidney	Moccasin	Huntley	Avg	Byx	Rsq
81Ab5792	Rio Grande	16.8	13.1	11.0	9.9	12.7	1.19	0.96
87AB5632	Monida/75Ab861	13.5	14.4	10.4	10.3	12.2	0.72	0.72
90Ab1322	Maverick	16.7	12.2	11.3	10.5	12.7	1.04	0.87
94AB5543	83Ab3119/86Ab1867A	16.2	14.3	10.6	11.1	13.0	1.06	0.99
95A10854	84Ab835/Monid	15.5	12.7	10.6	11.5	12.6	0.82	0.92
98AB6646	IAH61-3-3/90Ab1322	16.0	11.0	10.6	11.6	12.3	0.82	0.66
ABSP 9-2	Monico	15.0	13.5	10.4	10.3	12.3	0.93	0.99
ABSP14-6	83Ab3119/Monida	15.0	13.5	10.6	10.2	12.3	0.93	0.99
ABSP19-9	83Ab3083/Monida	15.1	14.1	10.5	11.2	12.7	0.86	0.94
CI 9252	Otana	16.5	13.2	10.8	9.5	12.5	1.22	0.97
CI483126	Monida	15.5	12.9	10.8	11.3	12.6	0.83	0.97
ND930122	Killdeer	17.0	13.2	11.2	11.0	13.1	1.10	0.95
OT351	CDC Pacer	14.5	14.8	11.2	10.3	12.7	0.83	0.81
OT373	CDC Dancer	15.8	13.8	10.3	10.2	12.5	1.10	0.99
PI537436	Ajay	18.3	13.8	11.0	10.1	13.3	1.46	0.97
PI583735	Celsia	16.2	13.6	11.1	11.7	13.2	0.92	0.98
SiteMean	SITE MEAN *****	15.8	13.6	10.8	10.7	12.7	1.00	1.00

Table 7. 2003 Oat Statewide Irrigated Summary - Overall Summary

Id	Pedigree	Yield	Test Weight	Heading	Plant Ht	Protein
		bu/ac	lb/bu	Date	inches	Percent
81Ab5792	Rio Grande	155.5	36.5	176.2	32.8	14.7
ABSP 9-2	Monico	155.2	37.3	176.7	34.7	14.8
87AB5632	Monida/75Ab861	154.8	35.4	178.7	35.2	13.9
CI483126	Monida	154.6	34.0	181.2	37.9	13.3
95A10854	(95Ab10854) 84Ab835/Monid	152.8	35.4	183.1	35.2	14.3
ABSP19-9	83Ab3083/Monida	151.2	35.0	180.6	34.0	14.2
OT351	CDC Pacer	150.8	36.0	178.5	40.4	14.3
90Ab1322	Maverick	148.9	33.9	178.2	29.4	14.6
ND930122	Killdeer	148.8	37.2	176.1	34.7	15.1
SiteMean	SITE MEAN *****	148.7	35.9	178.8	35.0	14.5
98AB6646	IAH61-3-3/90Ab1322	148.1	36.1	178.9	31.8	13.3
ABSP14-6	83Ab3119/Monida	148.1	36.7	176.9	34.8	13.7
CI 9252	Otana	146.5	37.5	179.2	40.6	16.7
PI583735	Celsia	146.5	34.5	181.3	40.0	14.1
OT373	CDC Dancer	144.9	38.7	177.5	40.0	15.0
94AB5543	83Ab3119/86Ab1867A	144.1	36.0	179.7	35.3	14.3
PI537436	Ajay	129.3	34.4	179.1	26.6	15.2

Table 8. 2003 Oat Statewide Irrigated Summary - Yield (bu/ac)

Id	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Avg	Byx	Rsq
		81Ab5792	Rio Grande	102.0	187.5	163.4	169.0	155.5
87AB5632	Monida/75Ab861	112.6	185.4	151.2	169.9	154.8	0.92	0.96
90Ab1322	Maverick	96.8	194.8	145.1	159.0	148.9	1.19	0.96
94AB5543	83Ab3119/86Ab1867A	101.2	169.8	153.8	151.7	144.1	0.88	0.98
95A10854	84Ab835/Monid	108.1	197.4	148.5	157.0	152.8	1.06	0.94
98AB6646	IAH61-3-3/90Ab1322	93.8	175.4	161.2	162.2	148.1	1.08	0.96
ABSP 9-2	Monico	96.2	197.8	163.9	163.0	155.2	1.27	1.00
ABSP14-6	83Ab3119/Monida	106.7	159.7	163.2	162.9	148.1	0.75	0.82
ABSP19-9	83Ab3083/Monida	106.1	178.1	151.9	168.6	151.2	0.94	0.96
CI 9252	Otana	98.1	185.3	159.0	143.8	146.5	1.07	0.95
CI483126	Monida	101.1	183.8	163.2	170.2	154.6	1.08	0.97
ND930122	Killdeer	93.4	212.1	130.7	159.0	148.8	1.38	0.85
OT351	CDC Pacer	114.6	169.0	159.4	160.2	150.8	0.72	0.96
OT373	CDC Dancer	108.0	175.3	134.5	162.0	144.9	0.83	0.86
PI537436	Ajay	84.5	164.5	120.2	148.1	129.3	1.00	0.91
PI583735	Celsia	108.2	164.7	163.6	149.4	146.5	0.75	0.90
SiteMean	SITE MEAN *****	102.0	181.3	154.6	157.1	148.7	1.00	1.00
C.V.	C.V. (S/Mean) * 100	5.98	7.44	12.11	6.95	***	***	***
F-Value		5.08	3.44	1.80	3.01	***	***	***
L.S.D.	L.S.D. (.05)	10.17	22.49	30.56	15.32	***	***	***

Table 9. 2003 Oat Statewide Irrigated Summary - Test Weight (lb/bu)

Id	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Avg	Byx	Rsq
81Ab5792	Rio Grande	36.8	37.2	37.0	35.1	36.5	-0.58	0.28
87AB5632	Monida/75Ab861	35.3	36.0	33.5	36.9	35.4	1.59	0.95
90Ab1322	Maverick	34.0	34.8	30.9	36.0	33.9	2.41	0.98
94AB5543	83Ab3119/86Ab1867A	35.9	36.5	34.5	37.2	36.0	1.22	0.95
95A10854	84Ab835/Monid	35.2	37.7	30.2	38.3	35.4	4.04	0.96
98AB6646	IAH61-3-3/90Ab1322	35.4	37.2	34.4	37.4	36.1	1.40	0.78
ABSP 9-2	Monico	38.5	38.2	35.3	37.4	37.3	1.39	0.72
ABSP14-6	83Ab3119/Monida	36.4	36.7	36.9	36.9	36.7	-0.09	0.11
ABSP19-9	83Ab3083/Monida	35.4	35.5	33.0	36.3	35.0	1.59	0.99
CI 9252	Otana	36.8	37.2	36.6	39.4	37.5	0.95	0.44
CI483126	Monida	34.6	34.8	31.0	35.6	34.0	2.30	1.00
ND930122	Killdeer	37.6	36.7	37.1	37.2	37.2	0.00	0.00
OT351	CDC Pacer	36.9	35.7	33.9	37.6	36.0	1.64	0.81
OT373	CDC Dancer	38.4	37.8	40.3	38.2	38.7	-1.22	0.93
PI537436	Ajay	36.4	34.3	32.0	35.1	34.4	1.65	0.64
PI583735	Celsia	33.8	34.3	33.3	36.4	34.5	1.11	0.55
SiteMean	SITE MEAN *****	36.1	36.3	34.6	36.6	35.9	1.00	1.00
C.V.	C.V. (S/Mean) * 100	***	2.52	5.64	2.91	***	***	***
F-Value		***	5.59	3.83	2.71	***	***	***
L.S.D.	L.S.D. (.05)	***	1.53	3.19	2.17	***	***	***

Table 10. 2003 Oat Statewide Irrigated Summary - Heading Date

Id	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Avg	Byx	Rsq
81Ab5792	Rio Grande	169.7	175.7	171.7	187.8	176.2	1.11	0.97
87AB5632	Monida/75Ab861	174.0	179.0	173.0	188.8	178.7	1.00	1.00
90Ab1322	Maverick	172.0	179.0	173.0	188.8	178.2	1.07	0.99
94AB5543	83Ab3119/86Ab1867A	176.3	180.0	172.3	190.0	179.7	1.04	0.97
95A10854	84Ab835/Monid	178.3	182.0	181.0	191.0	183.1	0.73	0.91
98AB6646	IAH61-3-3/90Ab1322	174.7	178.7	173.0	189.2	178.9	1.01	0.99
ABSP 9-2	Monico	172.3	176.0	170.3	188.0	176.7	1.10	0.99
ABSP14-6	83Ab3119/Monida	172.0	177.0	170.7	188.0	176.9	1.10	1.00
ABSP19-9	83Ab3083/Monida	176.0	180.3	176.0	190.2	180.6	0.93	0.99
CI 9252	Otana	175.7	179.7	173.3	188.2	179.2	0.91	0.99
CI483126	Monida	176.7	181.3	175.7	191.2	181.2	0.99	1.00
ND930122	Killdeer	171.0	177.3	169.0	187.2	176.1	1.14	0.99
OT351	CDC Pacer	173.7	179.7	172.3	188.2	178.5	1.01	1.00
OT373	CDC Dancer	172.7	179.0	170.3	188.0	177.5	1.09	0.98
PI537436	Ajay	172.7	180.7	174.0	189.0	179.1	1.03	0.98
PI583735	Celsia	177.3	181.7	176.0	190.2	181.3	0.90	1.00
SiteMean	SITE MEAN *****	174.1	179.2	173.2	188.9	178.8	1.00	1.00
C.V.	C.V. (S/Mean) * 100	0.44	0.40	0.41	0.34	***	***	***
F-Value		30.89	21.59	47.39	11.77	***	***	***
L.S.D.	L.S.D. (.05)	1.29	1.18	1.15	0.89	***	***	***

Table 11. 2003 Oat Statewide Irrigated Summary - Plant Height (in)

Id	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Avg	Byx	Rsq
81Ab5792	Rio Grande	23.5	39.5	37.4	30.7	32.8	0.91	1.00
87AB5632	Monida/75Ab861	24.0	42.8	40.3	33.9	35.2	1.05	0.99
90Ab1322	Maverick	20.3	36.4	33.4	27.6	29.4	0.89	0.99
94AB5543	83Ab3119/86Ab1867A	24.0	42.4	41.6	33.2	35.3	1.08	0.99
95A10854	84Ab835/Monid	25.5	40.9	41.7	32.9	35.2	0.96	0.99
98AB6646	IAH61-3-3/90Ab1322	21.9	39.1	36.1	30.2	31.8	0.95	0.99
ABSP 9-2	Monico	23.6	42.3	41.1	31.9	34.7	1.10	1.00
ABSP14-6	83Ab3119/Monida	25.6	41.1	40.5	32.0	34.8	0.93	0.99
ABSP19-9	83Ab3083/Monida	22.7	41.6	38.6	33.3	34.0	1.04	0.98
CI 9252	Otana	29.9	48.4	45.8	38.4	40.6	1.05	1.00
CI483126	Monida	26.8	44.8	43.4	36.8	37.9	1.03	0.99
ND930122	Killdeer	24.7	42.4	40.1	31.7	34.7	1.02	0.99
OT351	CDC Pacer	29.5	46.7	47.0	38.3	40.4	1.04	0.99
OT373	CDC Dancer	30.3	46.3	46.4	37.1	40.0	0.98	0.99
PI537436	Ajay	18.0	34.2	29.1	24.9	26.6	0.85	0.95
PI583735	Celsia	28.4	44.8	50.4	36.5	40.0	1.15	0.89
SiteMean	SITE MEAN *****	24.9	42.1	40.5	32.6	35.0	1.00	1.00
C.V.	C.V. (S/Mean) * 100	5.06	3.16	7.40	3.63	***	***	***
F-Value		22.60**	23.40	7.42	35.11	***	***	***
L.S.D.	L.S.D. (.05)	2.10	2.22	4.89	1.67	***	***	***

Table 12. 2003 Oat Statewide Irrigated Summary - Protein Percent

Id	Pedigree	Kalispell	Sidney	Huntley	Bozeman	Avg	Byx	Rsq
81Ab5792	Rio Grande	17.8	12.2	15.7	13.1	14.7	1.33	0.98
87AB5632	Monida/75Ab861	14.5	12.6	14.0	14.4	13.9	0.34	0.54
90Ab1322	Maverick	16.9	12.8	16.5	12.2	14.6	1.13	0.77
94AB5543	83Ab3119/86Ab1867A	15.5	12.1	15.3	14.3	14.3	0.73	0.79
95A10854	84Ab835/Monid	16.1	12.5	15.8	12.7	14.3	0.94	0.85
98AB6646	IAH61-3-3/90Ab1322	15.1	13.1	13.9	11.0	13.3	0.65	0.51
ABSP 9-2	Monico	17.8	12.1	15.8	13.5	14.8	1.32	0.99
ABSP14-6	83Ab3119/Monida	14.7	12.4	14.3	13.5	13.7	0.51	0.91
ABSP19-9	83Ab3083/Monida	15.4	11.8	15.6	14.1	14.2	0.80	0.75
CI 9252	Otana	25.4	12.8	15.2	13.2	16.7	2.84	0.82
CI483126	Monida	14.6	11.9	13.7	12.9	13.3	0.60	0.98
ND930122	Killdeer	18.5	12.9	15.6	13.2	15.1	1.34	0.95
OT351	CDC Pacer	15.3	12.1	14.9	14.8	14.3	0.63	0.66
OT373	CDC Dancer	17.5	12.3	16.4	13.8	15.0	1.23	0.96
PI537436	Ajay	16.8	13.6	16.8	13.8	15.2	0.85	0.81
PI583735	Celsia	17.3	11.6	13.8	13.6	14.1	1.20	0.92
SiteMean	SITE MEAN *****	16.8	12.4	15.0	13.6	14.5	1.00	1.00
C.V.	C.V. (S/Mean) * 100	***	***	***	***	***	***	***
F-Value		***	***	***	***	***	***	***
L.S.D.	L.S.D. (.05)	***	***	***	***	***	***	***