

PROJECT TITLE: Evaluation of regional spring wheat, winter wheat, durum, and oat yield trials - 1996

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OBJECTIVE: To evaluate new and introduced lines and cultivars of spring wheat, winter wheat, durum, and oats developed by Universities, the USDA-ARS, and private seed companies, and to determine adaptability of those lines and varieties to conditions in eastern Montana and western North Dakota.

RESULTS: The experimental site was fallow in 1995, in spring wheat in 1994, and small grain plots in 1993. All yield trials had three replications. Soil type is a Williams loam. Plots were 10 ft long and four rows wide with one ft between rows. At harvest, all rows were harvested with a plot combine for yield, test weight, and grain protein determinations.

Residual soil N was 88 lb/acre to three feet and residual soil P was 30 lb/acre to six inches. No fertilizer was applied. Bronate was applied for weed control at a rate of 2 pt/acre on 22 May 1996. Severe winter kill resulted in some winter wheat lines having very low yield. Soil moisture was good at planting for both winter and spring crops, weather was cool and wet during April and May, timely rain fell in June, weather was fairly hot and dry during grain fill.

Uniform Regional Hard Red Spring Wheat yield trial: The Uniform Regional Hard Red Spring wheat yield trial is conducted in cooperation with Dr. R.H. Busch of the University of Minnesota, St. Paul. Quality of each line and variety is tested by Dr. G. Hareland of North Dakota State University, Fargo. Thirty-four experimental lines and varieties of hard red spring wheat were tested under dryland conditions (Table 1). Minnesota line MN93413 yielded most followed by T801.93 and SBE0050. Average yield was 43.2 bu/acre. Five-year summaries for yield, test weight, and protein are shown in Tables 2 through 4.

Northern Regional Winter Wheat yield trial: The Northern Regional Winter Wheat yield trial is conducted in cooperation with Dr. C.J. Peterson at the University of Nebraska, Lincoln. Quality of each line and variety is tested by Dr. O.K. Chung at Kansas State University,

Manhattan. Twenty-nine experimental lines and varieties of winter wheat were tested under dryland conditions (Table 5). North Dakota line ND9274 and South Dakota line SD92266 yielded most. Average yield was 28.8 bu/acre. Five-year summaries for yield, test weight, and protein are shown in Tables 6 through 8.

Uniform Regional Durum yield trial: The Uniform Regional Durum yield trial is conducted in cooperation with Dr. E.M. Elias, North Dakota State University, Fargo. Quality of each line and variety is tested by Dr. G. Hareland of North Dakota State University, Fargo. Thirty-five experimental lines and varieties were tested under dryland conditions (Table 9). North Dakota line D89135 had the highest yield, followed by Lloyd and North Dakota line D91058. Average yield was 37.8 bu/acre. Five-year summaries for yield, test weight, and protein are shown in Tables 10 through 12.

Uniform Regional Oat yield trial: The Uniform Regional Oat trial is conducted in cooperation with Dr. D. M. Wesenberg of the USDA-ARS National Small Grain Facility, Aberdeen, ID. Thirty-three experimental lines and varieties were tested (Table 13). Idaho line 90AB1322, North Dakota line ND860416, and Monida yielded most. Average yield was 76.0 bu/acre. Five-year summaries for yield, test weight, and protein are shown in Tables 14 through 16.

SUMMARY: The uniform regional yield trials are conducted at many sites in several states across the western USA. Experimental lines from state breeding programs, private companies, and the USDA-ARS breeding programs are tested in these trials.

The regional yield trials at Sidney were conducted under dryland conditions at the Eastern Agricultural Research Center. The Northern Regional Winter Wheat trial was planted on 19 September 1995 and harvested on 5 August 1996. The Uniform Regional Hard Red Spring trial was planted on 23 April and harvested on 7 August. The Uniform Regional Durum trial was planted on 23 April and was harvested on 8 August. The Uniform Regional Oat trial was planted on 23 April and harvested on 7 August.

FUTURE PLANS:

New and existing varieties and experimental lines of spring wheat, durum and oat will continue to be tested under dryland conditions at the Eastern Agricultural Research Center, so that breeders can release improved varieties and producers can have information on varieties that are adapted to this area. A durum selection and breeding program will be established at EARC in cooperation with the durum breeder from NDSU for development of new varieties adapted to irrigated and dryland conditions in eastern Montana and western North Dakota. New and existing varieties and experimental lines of winter wheat will be tested under dryland conditions at the Williston Research Center in cooperation with the breeder from MSU.

Table 1. Agronomic data obtained from a dryland Uniform Regional hard red spring wheat yield trial conducted at the Eastern Agricultural Research Center, Sidney, MT, 1996.

Planted: 23 April 1996

Harvested: 7 August 1996

Plot size: 40ft²

Variety	Days to heading ¹	Height, inches	Protein content	Test wt, lb/bu	Yield bu/acre
MN93413	180	26	10.8	60.0	50.2
T801.93	178	28	11.9	62.5	50.1
SBE0050	179	27	12.6	61.8	49.6
9023FM04	179	26	10.6	62.0	49.4
SD3249	175	32	12.8	64.2	47.4
ND695	178	26	12.3	63.2	46.6
SDM50005	180	28	12.6	62.0	46.5
SD3236	175	30	12.0	63.0	46.2
N92-0176	178	24	12.3	62.3	45.9
MN91309	178	26	12.3	62.3	45.9
MN91227	179	25	12.4	61.3	45.2
SBF0402	179	27	11.9	62.8	45.1
Era	180	25	12.2	61.3	44.8
SD8108	176	30	12.3	62.8	44.8
ND694	178	31	13.3	63.2	44.6
MN93434	178	28	13.1	61.5	44.3
ND691	181	29	12.2	60.8	43.8
SD8089	178	32	11.5	61.7	43.4
Stoa	178	32	12.7	61.3	43.1
N92-0248	181	24	12.6	62.5	42.8
N92-0126	180	24	12.8	60.2	42.5
MT9311	183	28	12.3	63.7	41.7
T1105	182	24	11.2	62.7	41.6
FA994601	177	31	12.8	64.0	41.6
SD3219	177	30	11.6	63.7	41.5
Butte 86	178	31	11.9	62.2	41.1
MT9410	180	31	12.3	62.5	39.9
N92-0434	181	23	11.9	62.3	39.8
ND692	181	30	12.4	62.7	39.8
Gunnar	180	30	13.0	62.7	39.7
BW191	176	32	13.3	61.0	38.1
MT9433	178	30	12.8	62.2	36.5
Chris 525-1	180	30	13.3	61.6	33.0
Marquis	182	34	13.0	61.5	30.9
mean	178.9	28.3	12.33	62.2	43.2
p-value	0.00	0.00	0.00	0.00	0.00
CV (S/mean)	0.4	5.3	4.1	0.9	7.9
CV (SE/mean)	0.2	3.1	2.4	0.5	4.6
LSD _{0.05}	1.0	2.5	0.8	0.9	5.6

¹ number of days from 1 January

Table 2. Relative yields of spring wheat varieties as compared to Stoa when grown in the dryland Uniform Regional Hard Red Spring Wheat trial at EARC, Sidney, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Stoa
McNeal	2	79.0	64.4	--	--	--	71.7	125.5
ND 695	1	--	--	--	--	46.6	46.6	108.1
Era	5	77.4	51.9	60.5	39.9	44.8	54.9	106.6
Trenton	3	71.7	50.8	58.6	--	--	60.4	104.7
ND 694	1	--	--	--	--	44.6	44.6	103.5
ND 691	1	--	--	--	--	43.8	43.8	101.6
Stoa	5	69.0	45.3	58.6	40.7	43.1	51.3	100.0
Butte 86	5	65.3	47.5	62.0	39.3	41.1	51.0	99.4
MT 9311	1	--	--	--	--	41.7	41.7	96.8
Ernest	2	--	46.2	53.2	--	--	49.7	95.7
MT 9410	1	--	--	--	--	39.9	39.9	92.6
ND 692	1	--	--	--	--	39.8	39.8	92.3
Gunnar	1	--	--	--	--	39.7	39.7	92.1
MT 9433	1	--	--	--	--	36.5	36.5	84.7
Marquis	5	72.1	32.8	47.1	19.7	30.9	40.5	79.9
Chris 525-1	4	--	34.2	47.5	32.2	33.0	36.7	78.3

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety, Stoa.

Table 3. Relative test weights of spring wheat varieties as compared to Stoa when grown in the dryland Uniform Regional Hard Red Spring Wheat trial at EARC, Sidney, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Stoa
MT 9311	1	--	--	--	--	63.7	63.7	103.9
ND 695	1	--	--	--	--	63.2	63.2	103.1
ND 694	1	--	--	--	--	63.2	63.2	103.1
ND 692	1	--	--	--	--	62.7	62.7	102.3
Gunnar	1	--	--	--	--	62.7	62.7	102.3
MT 9410	1	--	--	--	--	62.5	62.5	102.0
Trenton	3	63.7	58.8	59.7	--	--	60.7	101.8
McNeal	2	62.7	58.2	--	--	--	60.4	101.7
Ernest	2	--	57.2	61.3	--59.2	--	59.2	101.5
MT 9433	1	--	--	--	--	62.2	62.2	101.5
Butte 86	5	62.8	56.5	61.4	61.6	62.2	60.9	101.2
Marquis	5	62.5	57.3	60.2	61.4	61.5	60.6	100.6
Chris 525-1	4	--	56.7	60.3	61.2	61.6	60.0	100.4
Stoa	5	62.2	56.7	60.0	60.8	61.3	60.2	100.0
Era	5	62.5	56.7	59.6	60.8	61.3	60.2	100.0
ND 691	1	--	--	--	--	60.8	60.8	99.2

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety, Stoa.

Table 4. Relative protein contents of spring wheat varieties as compared to Stoa when grown in the dryland Uniform Regional Hard Red Spring Wheat trial at EARC, Sidney, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Stoa
ND 694	1	--	--	--	--	13.3	13.30	104.7
Gunnar	1	--	--	--	--	13.0	13.00	102.4
Chris 525-1	4	--	14.2	13.7	14.7	13.3	13.97	102.2
MT 9433	1	--	--	--	--	12.8	12.80	100.8
Stoa	5	15.4	14.8	13.1	14.1	12.7	14.02	100.0
Marquis	5	15.5	13.0	13.4	15.2	13.0	14.02	100.0
Ernest	2	--	14.7	13.2	--	--	13.95	100.0
Trenton	3	15.6	13.8	13.8	--	--	14.40	99.8
Butte 86	5	16.1	13.2	12.9	14.5	11.9	13.72	97.9
ND 692	1	--	--	--	--	12.4	12.40	97.6
ND 695	1	--	--	--	--	12.3	12.30	96.9
MT 9311	1	--	--	--	--	12.3	12.30	96.9
MT 9410	1	--	--	--	--	12.3	12.30	96.9
ND 691	1	--	--	--	--	12.2	12.30	96.1
McNeal	2	15.0	14.0	--	--	--	14.50	96.0
Era	5	14.0	13.0	11.3	13.5	12.2	11.50	91.3

NOTE: Average protein contents in this summary should not be compared to each other since they are not grown in the same years. Compare protein contents only to the check variety, Stoa.

Table 5. Agronomic data obtained from a dryland Northern Regional winter wheat yield trial conducted at the Eastern Agricultural Research Center, Sidney, MT, 1996.

Planted: 19 September 1995

Harvested: 5 August 1996

Plot size: 40ft²

Variety	% winter survival	Days to heading ¹	Height, inches	Protein content	Test wt, lb/bu	Yield bu/acre
ND9274	60	170	26	10.6	60.1	43.1
SD92266	59	169	27	11.2	60.8	42.8
ND9257	66	171	28	10.7	60.6	42.4
SD92174	64	168	29	11.9	62.0	41.3
AMQ3NQ4A	45	174	30	11.0	60.6	41.3
AMQ3KF4B	49	174	29	11.6	59.1	41.2
SD92191	49	171	28	11.4	62.2	38.4
Roughrider	72	170	29	12.5	61.3	37.5
ND9272	59	170	25	11.8	59.5	37.2
SD91192	58	170	26	12.7	60.2	36.1
AMP3JP4A	45	172	27	11.6	60.0	36.0
SD92124	52	168	25	12.6	59.1	35.4
XNH1798	35	168	24	11.8	61.4	34.3
SD92227	56	169	26	11.9	60.7	33.4
SD92107	49	170	25	12.8	59.8	32.2
SD89153	45	168	26	12.9	61.6	31.6
Kharkof	48	171	31	13.4	61.8	27.0
NE93613	36	170	27	11.7	59.4	26.7
NE92662	37	170	23	12.4	59.9	24.5
NE92652	30	169	24	11.8	62.9	24.2
NE93554	48	165	24	10.8	60.7	21.4
McGuire	34	169	23	13.0	60.3	20.7
ID467	21	173	23	11.2	58.8	20.4
AMQ3KC4C	33	174	28	12.9	58.4	19.6
XNH1800	17	172	24	11.6	60.2	14.4
NE92628	19	168	26	11.8	60.4	13.5
Abilene	28	168	20	14.0	63.0	10.2
Rampart	8	172	24	13.4	59.2	8.0
ID0483	1	168	20	14.6	61.0	1.2
mean	42.1	170.0	25.7	12.12	60.5	28.8
p-value	0.00	0.00	0.00	0.00	0.00	0.00
CV (S/mean)	37.4	1.0	7.0	5.7	1.4	36.3
CV (SE/mean)	18.7	0.5	3.5	2.9	0.7	18.2
LSD _{0.05}	22.1	2.4	2.5	1.0	1.2	14.7

¹ number of days from 1 January.

Table 6. Relative yields of winter wheat varieties compared to Roughrider when grown in the Northern Regional Winter Wheat yield trial at EARC, Sidney, MT, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Roughrider
ND9257	2	--	--	--	63.7	42.4	53.0	109.8
ND8974	2	--	--	59.3	64.6	--	62.0	109.3
ND9274	2	--	--	--	59.5	43.1	51.3	106.2
ND9272	2	--	--	--	64.3	37.2	50.8	105.1
ND9064	2	--	--	60.3	57.6	--	59.0	104.0
Erhardt	2	83.0	44.1	--	--	--	63.6	101.8
Roughrider	5	87.5	37.4	54.3	59.1	37.5	55.2	100.0
Elkhorn	3	89.8	35.6	52.7	--	--	59.4	99.4
ND9043	2	--	--	51.5	58.2	--	54.8	96.7
Abilene	4	--	40.7	50.1	61.1	10.2	40.5	86.1
Kharkof	4	--	31.8	46.6	51.2	27.0	39.2	83.2
McGuire	2	--	--	--	53.6	20.7	37.2	76.9
Rampart	1	--	--	--	--	8.0	8.0	21.3

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety, Roughrider.

Table 7. Relative test weights of winter wheat varieties compared to Roughrider when grown in the Northern Regional Winter Wheat yield trial at EARC, Sidney, MT, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Roughrider
Abilene	3	--	63.1	63.4	62.4	63.0	63.0	101.2
Roughrider	5	63.2	62.0	63.1	62.4	61.3	62.4	100.0
Kharkof	4	--	61.6	63.0	60.5	61.8	61.7	99.2
Erhardt	2	63.5	60.5	--	--	--	62.0	99.0
ND8974	2	--	--	63.3	60.1	--	61.7	98.3
ND9064	2	--	--	62.8	60.6	--	61.7	98.3
McGuire	1	--	--	--	61.1	60.3	60.7	98.1
Elkhorn	3	62.1	60.3	62.0	--	--	61.5	97.9
ND9257	1	--	--	--	60.1	60.6	60.4	97.6
ND9043	2	--	--	62.0	60.4	--	61.2	97.5
ND9274	1	--	--	--	59.8	60.1	60.0	96.9
ND9272	1	--	--	--	60.2	59.5	59.8	96.8
Rampart	1	--	--	--	--	59.2	59.2	96.6

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety, Roughrider.

Table 8. Relative protein contents of winter wheat varieties compared to Roughrider when grown in the Northern Regional Winter Wheat yield trial at EARC, Sidney, MT, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Roughrider
Abilene	4	--	11.4	13.1	14.4	14.0	13.23	111.8
McGuire	2	--	--	--	15.4	13.0	14.20	109.2
Kharkof	4	--	10.1	12.4	14.8	13.4	12.67	107.2
Rampart	1	--	--	--	--	13.4	13.40	107.2
ND9043	2	--	--	12.1	14.1	--	13.10	104.8
Erhardt	2	12.4	10.5	--	--	--	11.45	104.1
ND9064	2	--	--	11.8	13.4	--	12.60	100.8
Roughrider	5	12.2	9.8	11.5	13.5	12.5	11.90	100.0
ND8974	2	--	--	10.8	13.6	--	12.20	97.6
ND9272	2	--	--	--	13.2	11.8	12.50	96.2
ND9274	2	--	--	--	14.1	10.6	12.35	95.0
Elkhorn	3	11.2	9.6	10.7	--	--	10.50	94.0
ND9257	2	--	--	--	13.4	10.7	12.05	92.7

NOTE: Average protein contents in this summary should not be compared to each other since they are not grown in the same years. Compare protein contents only to the check variety, Roughrider.

Table 9. Agronomic data obtained from a dryland Uniform Regional durum yield trial conducted at the Eastern Agricultural Research Center, Sidney, MT, 1996.

Planted: 23 April 1996

Harvested: 8 August 1996

Plot size: 40ft²

Variety	Days to heading ¹	Height, inches	Protein content	Test wt, lb/bu	Yield bu/acre
D89135	179	28	11.4	63.6	41.1
Lloyd	179	24	10.4	61.7	40.8
D91058	179	26	12.1	62.6	40.8
D901419	178	26	12.0	63.1	40.6
D901518	179	27	10.8	62.0	40.5
D901313	180	28	11.4	62.3	40.2
Monroe	177	30	12.0	63.0	39.7
D901536	178	28	11.7	63.8	39.6
D91080	179	23	10.8	62.4	39.6
Ben	178	29	12.7	62.8	39.5
Munich	178	27	12.2	61.9	39.2
D91066	179	28	12.5	62.6	39.0
D901486	178	26	10.7	62.3	38.6
D901442	178	26	11.6	64.2	38.2
Kyle	181	32	12.0	62.0	38.2
D901786	177	23	11.4	62.6	38.0
D88303	178	26	12.1	62.5	38.0
Dressler	178	30	12.2	62.2	37.9
Medora	179	31	11.8	63.9	37.3
Vic	178	31	12.8	63.2	37.2
D91321	178	29	12.0	61.8	37.1
D921018	179	31	12.2	62.1	37.0
Renville	179	31	12.4	62.3	37.0
D91103	179	32	13.2	63.4	36.9
Plenty	180	32	12.6	61.9	36.7
Sceptre	179	27	11.5	62.9	36.7
D921019	179	29	12.8	62.5	36.5
D911551	179	28	12.0	62.8	36.5
Rugby	178	31	12.2	63.3	36.0
D901155	178	31	12.6	63.1	35.8
D87240	179	29	12.4	61.1	35.7
D920525	179	28	12.3	62.7	35.7
D920016	179	24	11.7	63.2	35.0
Mindum	182	38	11.2	64.3	34.2
D920078	180	21	12.2	61.7	33.5
mean	178.8	28.3	11.94	62.7	37.8
p-value	0.00	0.00	NS	0.00	NS
CV (S/mean)	0.3	5.2	8.6	1.3	8.4
CV (SE/mean)	0.2	3.0	5.0	0.8	4.9
LSD _{0.05}	0.9	2.4	--	1.3	--

¹ number of days from 1 January

Table 10. Relative yields of durum varieties as compared to Renville when grown in the dryland Uniform Regional Durum yield trial at the EARC, Sidney, Montana, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Renville
Dressler	1	--	--	--	--	37.9	37.9	102.4
Renville	5	69.0	36.4	66.6	55.3	37.0	59.2	100.0
Ben	5	64.8	46.8	62.0	48.3	39.5	52.3	98.9
Munich	5	60.7	48.8	61.8	50.6	39.2	52.2	98.9
D87240	5	72.1	35.8	64.2	50.0	35.7	51.6	97.5
Sceptre	5	63.7	41.7	59.2	49.2	36.7	50.1	94.8
Lloyd	5	64.0	30.9	62.0	50.9	40.8	49.7	94.1
Plenty	3	--	44.5	59.2	43.1	36.7	45.9	94.0
Vic	5	63.1	31.8	61.6	47.3	37.2	48.2	91.2
Kyle	2	--	--	58.0	48.3	38.2	48.2	90.9
Rugby	5	55.8	38.4	57.7	52.0	36.0	48.0	90.8
Medora	5	65.9	31.7	60.4	41.2	37.3	47.3	89.5
Monroe	5	55.5	30.6	59.2	45.5	39.7	46.1	87.2
Mindum	5	55.7	30.1	55.5	42.0	34.2	43.5	82.3

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety, Renville.

Table 11. Relative test weights of durum varieties as compared to Renville when grown in the dryland Uniform Regional Durum yield trial at EARC, Sidney, Montana, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Renville
Mindum	5	64.5	58.2	62.4	63.8	64.3	62.6	102.3
Ben	5	63.0	58.7	63.0	62.7	62.8	62.0	101.3
Rugby	5	62.8	57.7	62.1	62.7	63.3	61.7	100.8
Vic	5	62.8	57.1	62.4	62.6	63.2	61.6	100.6
Medora	5	63.2	56.9	61.7	62.3	63.9	61.6	100.6
Munich	5	62.2	57.2	63.2	62.2	61.9	61.3	100.1
Renville	5	62.8	57.5	61.4	62.3	62.3	61.3	100.0
Dressler	1	--	--	--	--	62.2	62.2	99.8
Monroe	5	62.5	56.4	61.1	62.0	63.0	61.0	99.6
Kyle	2	--	--	60.6	62.5	62.0	61.7	99.5
Plenty	3	--	57.2	61.0	62.0	61.9	60.5	99.4
Sceptre	5	62.5	56.2	61.3	61.2	62.9	60.8	99.3
D87240	5	62.0	54.2	61.5	61.7	61.1	60.1	98.1
Lloyd	5	62.0	53.7	59.2	61.0	61.7	59.5	97.2

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety, Renville.

Table 12. Relative protein contents of durum varieties as compared to Renville when grown in the dryland Uniform Regional Durum yield trial at EARC, Sidney, Montana, from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Renville
Kyle	3	--	--	12.4	16.3	12.0	13.57	108.8
Plenty	4	--	13.8	11.8	15.8	12.6	13.50	106.9
Monroe	5	16.8	13.4	12.2	16.2	12.0	14.12	106.2
Vic	5	15.9	13.7	12.4	14.9	12.8	13.94	104.8
Rugby	5	16.1	13.3	12.7	15.2	12.2	13.90	104.5
Medora	5	15.8	13.8	12.5	14.4	11.8	13.66	102.7
Ben	5	15.7	13.9	11.8	14.2	12.7	13.66	102.7
Munich	5	15.2	14.3	11.6	13.7	12.2	13.40	100.8
D87240	5	14.8	14.3	11.3	14.1	12.4	13.38	100.6
Renville	5	16.0	13.1	11.2	13.8	12.4	13.30	100.0
Lloyd	5	14.2	13.9	12.4	15.1	10.4	13.20	99.2
Mindum	5	14.9	13.7	11.0	14.8	11.2	13.12	98.6
Sceptre	5	14.9	13.4	11.4	14.4	11.5	13.12	98.6
Dressler	1	--	--	--	--	12.2	12.20	98.4

NOTE: Average protein contents in this summary should not be compared to each other since they are not grown in the same years. Compare only to the check variety, Renville.

Table 13. Agronomic data obtained from a dryland Uniform Regional oat yield trial conducted at the Eastern Agricultural Research Center, Sidney, MT, 1996.

Planted: 23 April 1996

Harvested: 7 August 1996

Plot size: 40ft²

Variety	Days to heading ¹	Height, inches	Protein content	Test wt, lb/bu	Yield bu/acre
90AB1322	179	23	10.1	31.5	86.2
ND860416	179	28	9.0	36.4	85.0
Monida	182	29	9.0	35.4	84.2
82AB248	183	23	8.1	31.8	82.7
Derby	179	32	9.0	34.9	82.6
ABSP 9-2	178	27	9.6	34.4	81.8
86AB6640	179	26	8.8	33.0	81.6
83AB3250	181	23	9.3	30.4	81.3
87AB4983	175	23	9.5	35.1	80.8
Prairie	175	25	9.7	32.6	80.7
86AB4582	179	29	9.5	33.5	80.4
Cayuse	179	27	9.7	29.6	79.1
Appaloosa	181	25	9.5	27.8	78.2
Park	178	31	10.3	32.9	78.0
87AB5125	180	24	9.5	34.6	77.1
81AB5792	178	24	10.2	31.8	76.4
89AB1545	175	27	10.2	33.7	76.3
Celsia	181	28	9.2	32.7	76.1
84AB825	181	24	9.6	32.9	75.6
89AB4088	176	24	11.2	34.4	75.6
91AB502	174	23	9.5	31.5	75.5
89AB6153	173	24	10.5	36.7	75.0
Ajay	179	20	10.5	33.8	74.8
Border	180	25	10.4	31.1	74.2
Otana	181	32	9.3	36.7	73.4
Whitestone	179	24	9.4	32.5	73.3
Rodney	179	31	11.0	36.3	71.7
Ogle	174	27	8.5	32.9	71.1
86AB1616	180	26	13.7	41.5	70.6
Newdak	174	28	10.0	34.2	69.6
IAH613-3	176	28	9.5	32.9	67.4
88AB3073	180	24	14.3	43.7	61.9
Paul	181	30	15.8	43.8	50.0
mean	178.4	26.2	10.09	34.2	76.0
p-value	0.00	0.00	0.00	0.00	0.05
CV (S/mean)	0.5	4.3	7.0	5.3	11.8
CV (SE/mean)	0.3	2.5	4.0	3.1	6.8
LSD _{0.05}	1.4	1.8	1.2	3.0	14.6

¹ number of days from 1 January

Table 14. Relative yields of oat varieties as compared to Otana when grown under dryland conditions in the Uniform Regional Oat Yield Trial at EARC from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Otana
ND860416	1	--	--	--	--	85.0	85.0	115.8
Monida	5	187.0	100.8	131.1	129.4	84.2	126.5	109.0
Border	5	182.2	99.5	145.0	126.4	74.2	125.5	108.1
Whitestone	3	--	--	125.4	124.2	73.3	107.6	106.6
Prairie	2	--	--	--	115.1	80.7	97.9	104.4
Rio Grande	5	169.9	102.0	129.6	119.5	76.4	119.5	102.9
Appaloosa	5	177.9	89.0	122.4	124.1	78.2	118.3	101.9
Otana	5	188.7	88.9	115.4	114.1	73.4	116.1	100.0
Ajay	5	170.4	101.7	126.9	105.4	74.8	115.8	99.8
Celsia	2	--	--	--	110.6	76.1	93.4	99.6
Newdak	5	186.2	86.6	116.3	116.6	69.6	115.1	99.1
Calibre	4	199.5	97.0	92.2	102.9	--	122.9	96.9
Cayuse	5	166.3	91.1	109.2	113.8	79.1	111.9	96.4
Derby	5	195.6	90.9	89.6	95.4	82.6	110.8	95.4
Valley	4	164.3	91.0	118.5	105.4	--	119.8	94.5
Park	5	175.7	76.5	102.0	113.8	78.0	109.2	94.1
Ogle	5	162.3	89.6	112.6	104.9	71.1	108.1	93.1
Rodney	3	--	--	100.6	93.4	71.7	88.6	87.7
Paul	3	--	--	89.1	74.6	50.0	71.2	70.6

NOTE: Average yields in this summary should not be compared to each other since they are not grown in the same years. Compare yields only to the check variety, Otana.

Table 15. Relative test weights of oat varieties as compared to Otana when grown under dryland conditions in the Uniform Regional Oat Yield Trial at EARC from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Otana
Paul	3	--	--	47.9	47.3	43.8	46.3	117.6
Otana	5	38.3	38.3	43.3	38.2	36.7	39.0	100.0
ND860416	1	--	--	--	--	36.4	36.4	99.2
Derby	5	39.7	37.2	43.0	38.0	34.9	38.6	99.0
Valley	4	38.2	37.6	44.0	36.7	--	39.1	99.0
Calibre	4	38.7	35.7	42.8	38.0	--	38.8	98.2
Monida	5	38.3	37.0	42.3	37.8	35.4	38.2	97.9
Whitestone	3	--	--	43.0	38.2	32.5	37.9	96.2
Rodney	3	--	--	40.7	36.5	36.3	37.8	96.0
Ogle	5	36.3	37.2	42.3	36.8	32.9	37.1	95.2
Rio Grande	5	37.3	36.0	41.8	36.8	31.8	36.7	94.3
Ajay	5	37.3	36.8	38.7	36.8	33.8	36.7	94.1
Newdak	5	35.7	35.8	41.3	35.5	34.2	36.5	93.7
Park	5	36.0	34.7	42.3	35.8	32.9	36.3	93.3
Celsia	2	--	--	--	36.5	32.7	34.6	92.4
Prairie	2	--	--	--	36.3	32.6	34.4	92.0
Border	5	36.5	35.5	39.0	36.2	31.1	35.7	91.5
Cayuse	5	36.2	33.5	40.5	35.3	29.6	35.0	89.9
Appaloosa	5	36.0	34.5	39.0	36.2	27.8	34.7	89.1

NOTE: Average test weights in this summary should not be compared to each other since they are not grown in the same years. Compare test weights only to the check variety Otana.

Table 16. Relative protein contents of oat varieties as compared to Otana when grown under dryland conditions in the Uniform Regional Oat Yield Trial at EARC from 1992-1996.

Cultivar	# of years	1992	1993	1994	1995	1996	Ave	as % of Otana
Paul	3	--	--	12.5	17.9	15.8	15.40	133.9
Rodney	3	--	--	10.9	15.1	11.0	12.33	107.2
Park	5	12.3	11.9	11.4	14.7	10.3	12.12	103.6
Ajay	5	11.9	12.3	11.4	14.3	10.5	12.08	103.2
Prairie	2	--	--	--	14.2	9.7	11.95	101.3
Otana	5	12.1	11.9	10.9	14.3	9.3	11.70	100.0
Newdak	5	11.7	11.4	11.3	14.0	10.0	11.68	99.8
Valley	4	12.1	11.6	11.4	14.0	--	12.28	99.8
Border	5	11.9	11.4	11.1	13.3	10.4	11.62	99.3
Derby	5	11.9	11.1	10.9	13.8	9.0	11.34	96.9
ND860416	1	--	--	--	--	9.0	9.00	96.8
Rio Grande	5	11.1	10.4	11.2	13.5	10.2	11.28	96.4
Ogle	5	11.9	10.6	11.1	14.0	8.5	11.22	95.9
Whitestone	3	--	--	10.5	13.1	9.4	11.00	95.7
Cayuse	5	10.9	11.4	10.4	13.1	9.7	11.10	94.9
Celsia	2	--	--	--	13.2	9.2	11.20	94.9
Calibre	4	11.1	11.5	10.4	13.6	--	11.60	94.7
Appaloosa	5	11.4	10.6	10.2	13.3	9.5	11.00	94.0
Monida	5	10.2	10.8	9.5	13.4	9.0	10.58	90.4

NOTE: Average protein contents in this summary should not be compared to each other since they are not grown in the same years. Compare protein contents only to the check variety Otana.