



## RESULTS OF AGRONOMIC AND WEED SCIENCE RESEARCH CONDUCTED IN SOUTH CENTRAL MONTANA - 2000

The Annual Report of the Investigations at and Administration of the  
Southern Agricultural Research Center, Huntley, Montana

<http://www.sarc.montana.edu/annualreport/2000/>

**PROJECT TITLE:** Dryland and Irrigated Durum Performance Trials near Bridger, Hysham, Molt and Ryegate, Montana. (Exps. 009894, 009895, 009896 and 009897).

**PROJECT LEADERS:** Kenneth D. Kephart, Agronomist, SARC, Huntley  
Peggy F. Lamb, Research Associate, SARC, Huntley

**PROJECT PERSONNEL:** Luther E. Talbert, Spring Wheat Breeder, Bozeman  
Susan P. Lanning, Spring Wheat Research Associate, Bozeman  
Tom A. Fischer, Research Specialist and Farm Foreman, SARC, Huntley  
Paul Dixon, Yellowstone County Extension, Billings  
Lee Schmelzer, Stillwater County Extension, Columbus  
Darrel Krum, Carbon County Extension, Joliet  
John Pfister, Musselshell/Golden Valley Extension, Roundup

**COOPERATORS:** Marc Majerus, USDA-NRCS Plant Materials Center, Bridger  
Greg Lackman, Farmer Cooperator, Hysham  
Bill Linger, Farmer Cooperator, Molt  
Todd Zinne, Farmer Cooperator, Ryegate  
Tony Zinne, Farmer Cooperator, Ryegate

**OBJECTIVES:** To provide durum growers in south central Montana with a reliable, unbiased, up-to-date source of information that will permit valid comparisons among improved durum varieties. This information should help durum producers in south central Montana select varieties best suited to their particular area and growing conditions.

**METHODS:** Off-station durum trials were established under dryland conditions near Molt and Ryegate, and under irrigated conditions near Bridger and Hysham, Montana (Fig. 1). Sixteen durum entries plus 'McNeal' hard red spring wheat (HRSW) were planted at each location.

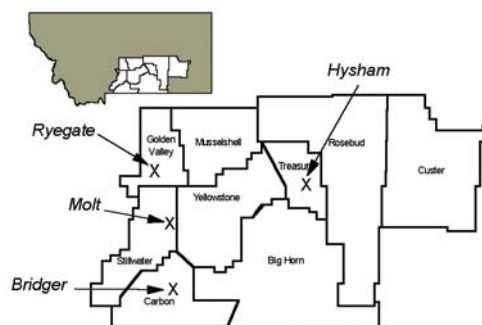


Figure 1. 2000 off-station durum trial locations in south central Montana.

All studies were planted using a randomized complete block design with three replications. Dryland test plots consisted of a 15-foot, 4-row plot with 12-inch row spacing. Irrigated test plots consisted of a 15-foot, 7-row plot with 6-inch

row spacing. All rows of each test plot were trimmed 36 inches and harvested using an experimental-plot combine. Recorded grain yields were adjusted to 13% grain moisture content, and are reported in bushels per acre based on a 60 pound standard bushel weight. Test weight (pounds per bushel) and percent grain moisture content were obtained for each plot using a Dickey-john GAC 2100 grain analyzer. Grain protein (%) was determined for each entry bulked across replications. Grain protein values were adjusted to 12% grain moisture content. Plant height was measured in inches from the soil surface to the top of the head, excluding the awns if present. Reported plant height values have been rounded to the nearest inch. Lodging of some entries was noted at the irrigated locations. Lodging severity was recorded on a 0 to 9 scale representing no lodging to all stems lying flat on the ground, respectively.

## **RESULTS and SUMMARY:**

Severe drought stress, Russian wheat aphid (*Diuraphis noxia* Mord.) and wheat stem sawfly (*Cephus cinctus* Norton) were evident at the Molt dryland location in 2000. Stem cutting from sawfly was observed at harvest, particularly within plots of the McNeal spring wheat check. Molt spring durum yields were severely depressed, averaging only 11.2 bu/ac for cultivars tested during 2000 and 16.3 bu/ac for entries tested during 1999 and 2000 (Table 1). No differences in yield among the durum cultivars was detected for 2000 or for the past two years. Test weights averaged 51.9 lb/bu during 2000. Test weights were extremely variable and no differences among cultivars was measured. Grain protein averaged 17.7 percent and ranged from 15.9 percent for 'Plaza' to 20.1 percent for 'Maier'.

Conditions were similarly harsh at the Ryegate site in 2000 with severe drought stress and Russian wheat aphid damage also limiting spring durum yield potential and crop quality (Table 2). The presence of wheat stem sawfly was not evident at Ryegate. Ryegate spring wheat yields averaged 15.0 bu/ac in 2000 and ranged from 24.6 bu/ac for 'Kyle' to 6.4 bu/ac for 'Laker'. McNeal, 'Munich', 'Plaza', 'Renville' and 'Plenty' produced grain yields between 24.1 and 17.1 bu/ac, which was equal to the yield of Kyle. Test weights averaged 54.1 lb/bu. There were no measurable differences in test weight among the durum entries grown at Ryegate during 2000. Grain protein averaged 19.1 percent and ranged from 20.4 percent for Maier to 17.8 percent for Laker.

Agronomic performance of the spring durum cultivars tested under dryland conditions for the past two years is summarized in Table 3. Across locations, the hard red spring wheat check, McNeal, was the highest yielding cultivar in 2000, averaging 20.5 bu/ac. Kyle was the highest yielding durum tested under dryland conditions in 2000 and the only durum entry to statistically equal the yield of McNeal. Test weights averaged 53.0 lb/bu, with no differences observed between entries. Grain protein content averaged 18.4 percent and ranged from 20.3 percent for Maier to 17.1 percent for Laker and Plaza durum.

Spring durum yield and crop quality were substantially improved by the availability of water at the irrigated sites (Tables 4 and 5). Irrigated spring durum plots at Bridger were treated for control of Russian wheat aphid on May 23<sup>rd</sup>. Russian wheat aphid damage was minimal and did not appear to affect subsequent crop development. Durum protein levels of the grain harvested from both the Bridger and Hysham locations continued to be elevated above expected values. Significant lodging also was observed at the irrigated sites compared to none observed at the dryland locations.

McNeal hard red spring wheat was the highest yielding entry tested at the Bridger location in 2000, averaging 120.6 bu/ac (Table 4). 'Belzer' was the highest yielding durum cultivar tested at Bridger, averaging 117.7 bu/ac. Three other durum entries, 'Mountrail', Plaza and Plenty, equaled the yields of Belzer durum and McNeal hard red spring wheat. Average test weight for the trial at Bridger was 61.4 lb/bu. Most entries tested produced test weights heavier than 60 lb/bu. Grain protein content averaged 16.0 percent and ranged from 14.2

percent for Laker to 17.3 percent for 'Monroe'. The tallest durum tested in 2000, Kyle, lodged significantly more than the remaining entries grown under the conditions experienced at Bridger in 2000.

The spring durum cultivars tested at the Hysham site during 2000 averaged 116.6 bu/ac (Table 5), or about 10 percent more than the yield obtained by the durum wheats grown under irrigation at Bridger. 'Lebsock' was the highest yielding entry wheat tested at the Bridger location in 2000, averaging 138.7 bu/ac. Six other durum wheats, Maier, Mountrail, Munich, Plaza, Laker and Belzer, yielded from 133.0 to 121.8 bu/ac, equaling the yield of Lebsock. McNeal hard red spring wheat averaged 121.0 bu/ac at Hysham. Average test weight at Hysham was 59.7 lb/bu. Grain protein content at Hysham averaged 16.1 percent, and varied from 15.2 percent for Laker to 17.2 percent for Renville. Several durum cultivars, including Belzer, Kyle, Plenty and Renville, exhibited substantial lodging under the conditions at Hysham during 2000.

Mean agronomic performance of the durum cultivars tested under irrigated conditions at the two locations during 2000 is summarized in Table 6. Across locations, Lebsock was the highest yielding cultivar in 2000, averaging 121.6 bu/ac. Seven other cultivars, including Belzer, Laker, Maier, McNeal hard red spring wheat, Mountrail, Munich and Plaza possessed yields equal to that of Lebsock. Test weights for all entries across both irrigated locations averaged 60.6 lb/bu. Grain protein averaged 16.0 percent and ranged from 16.8 percent for Maier, 'Medora' and Renville durum to 14.7 percent for Laker.

McNeal hard red spring wheat was the highest yielding cultivar tested in these trials across the four locations in south central Montana during 2000 (Table 7 and 8). Five durum entries, including Belzer, Lebsock, Maier, Mountrail and Plaza, equaled the yield obtained by McNeal.

**FUTURE PLANS:**

Off-station durum performance evaluations will continue in 2001 with locations at Bridger, Hysham, Molt and Ryegate, Montana.

Table 1. Performance of 16 spring durum cultivars compared to McNeal hard red spring wheat tested under dryland conditions near Molt, Montana during 2000. Cultivars listed alphabetically. (Exp. 009894).

Cultivar	1/ Grain Yield		Test Weight	Grain Moisture	Plant Height	2/ Grain Protein
	2000	1999-00				
	---- bushels/acre----		lb/bu	%	inches	%
Belzer	10.8	15.6	49.5	7.7	21	16.5
Ben	13.6	17.3	56.6	7.5	20	17.6
Kyle	11.2	16.4	55.5	7.8	20	17.7
Laker	10.0	18.6	47.5	8.1	18	16.4
Lebsock	13.7		58.5	8.0	19	17.3
Maier	10.2	17.5	51.1	7.6	20	20.1
McNeal (HRSW)	16.8	20.7	55.8	7.4	22	17.1
Medora	11.3	15.3	57.3	7.4	21	17.9
Monroe	9.5	13.1	47.5	7.3	20	17.7
Mountrail	10.5	17.7	53.2	7.3	19	17.8
Munich	10.6	17.2	57.4	7.6	17	18.2
Plaza	12.1		49.3	7.9	18	15.9
Plenty	10.1	17.3	46.6	7.4	22	17.1
Renville	10.9	17.1	54.2	7.7	21	17.8
Sceptre	9.1	13.9	41.7	7.7	19	18.3
Vic	9.5	13.1	52.1	7.8	19	17.8
Ward	10.5	14.5	48.9	7.5	23	19.5
Average	11.2	16.3	51.9	7.6	19.9	17.7
LSD (p=0.05)	ns	ns	ns	0.4	2.6	-
CV%	26.3	24.3	13.8	2.7	7.8	-

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

2/ Grain protein values adjusted to 12 percent grain moisture content.

ns Not significant at the 0.05 probability level.

Molt Dryland Durum Wheat (Exp. 009894)

Planted: March 24, 2000  
Harvested: July 27, 2000  
Fertility: 11-52-00, 120 lb/a in-furrow, March 24, 2000  
40-20-00, 75 lb/a broadcast, May 17, 2000  
Herbicide: Harmony Extra, 0.5 oz/a; Buctril, 1 pt/a; R-11, 1 pt/a, May 23, 2000  
Insecticide: Malathion 5EC, 1 pt/a; R-11, 1 pt/a, May 23, 2000  
Previous Crop: summer fallow  
Precipitation: not available

Table 2. Performance of 16 spring durum cultivars compared to McNeal hard red spring wheat tested under dryland conditions near Ryegate, Montana during 2000. Cultivars listed alphabetically. (Exp. 009895).

Cultivar	1/	Test Weight	Grain Moisture	Plant Height	2/
	Grain Yield				Grain Protein
	bu/ac	lb/bu	%	inches	%
Belzer	15.0	55.7	7.9	20	18.2
Ben	10.8	52.4	7.5	23	19.2
Kyle	<b>24.6**</b>	57.8	8.2	26	19.3
Laker	6.4	45.4	7.9	18	17.8
Lebsock	14.4	58.9	7.9	20	18.8
Maier	16.4	58.4	8.1	20	20.4
McNeal (HRSW)	<b>24.1*</b>	55.2	7.8	21	19.6
Medora	12.6	49.7	7.9	21	19.5
Monroe	13.7	57.8	8.0	19	19.4
Mountrail	11.5	57.1	7.9	18	19.1
Munich	<b>20.5*</b>	57.5	7.8	22	19.0
Plaza	<b>19.7*</b>	58.2	8.2	20	18.3
Plenty	<b>17.1*</b>	38.5	7.8	23	19.2
Renville	<b>19.3*</b>	58.1	8.1	23	19.6
Sceptre	8.2	47.1	7.8	17	19.4
Vic	11.3	57.3	8.0	20	18.6
Ward	9.2	54.7	7.9	21	19.1
Average	15.0	54.1	7.9	20.6	19.1
LSD (p=0.05)	7.8	ns	-	3.4	-
CV%	31.1	19.3	-	9.9	-

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

2/ Grain protein values adjusted to 12 percent grain moisture content.

\*\* Indicates highest yielding cultivar within a column.

\* Indicates cultivars yielding equal to highest yielding cultivar within a column based on Fisher's protected LSD (p=0.05).

#### Ryegate Dryland Durum Wheat (Exp. 009895)

Planted: March 28, 2000  
 Harvested: August 7, 2000  
 Fertility: 11-52-00, 120 lb/a in-furrow, March 28, 2000  
 40-20-00, 75 lb/a broadcast, May 17, 2000  
 Herbicide: Harmony Extra, 0.5 oz/a; Buctril, 1 pt/a; R-11, 1 pt/a, May 23, 2000  
 Insecticide: Malathion 5EC, 1 pt/a; R-11, 1 pt/a, May 23, 2000  
 Previous Crop: summer fallow  
 Precipitation: not available

Table 3. Performance of 16 spring durum cultivars compared to McNeal hard red spring wheat tested under two dryland locations in south central Montana during 2000. Cultivars listed alphabetically. (Exps. 009894 & 009895).

Cultivar	1/	Test Weight	Grain Moisture	Plant Height	2/
	Grain Yield				Grain Protein
	bu/ac	lb/bu	%	inches	%
Belzer	12.9	52.6	7.8	21	17.4
Ben	12.2	54.5	7.5	22	18.4
Kyle	<b>17.9*</b>	56.7	8.0	23	18.5
Laker	8.2	46.5	8.0	18	17.1
Lebsock	14.0	58.7	7.9	19	18.1
Maier	13.3	54.8	7.8	20	20.3
McNeal (HRSW)	<b>20.5**</b>	55.5	7.6	21	18.4
Medora	11.9	53.5	7.7	21	18.7
Monroe	11.6	52.7	7.7	19	18.6
Mountrail	11.0	55.1	7.6	19	18.5
Munich	15.5	57.5	7.7	20	18.6
Plaza	15.9	53.8	8.0	19	17.1
Plenty	13.6	42.6	7.6	22	18.2
Renville	15.1	56.1	7.9	22	18.7
Sceptre	8.6	44.4	7.7	18	18.9
Vic	10.4	54.7	7.9	19	18.2
Ward	9.8	51.8	7.7	22	19.3
Average	13.1	53.0	7.8	20.3	18.4
LSD (p=0.05)	4.5	ns	0.2	2.1	1.0
CV%	29.9	16.9	1.9	8.9	4.7

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

2/ Grain protein values adjusted to 12 percent grain moisture content.

\*\* Indicates highest yielding cultivar within a column.

\* Indicates cultivars yielding equal to highest yielding cultivar within a column based on Fisher's protected LSD (p=0.05).

ns Not significant at the 0.05 probability level.

Table 4. Performance of 16 spring durum cultivars compared to McNeal hard red spring wheat tested under irrigated conditions near Bridger, Montana during 2000. Cultivars listed alphabetically. (Exp. 009897).

Cultivar	1/	Test Weight	Grain Moisture	Plant Height	2/	3/
	Grain Yield				Lodging Severity	Grain Protein
	bu/ac	lb/bu	%	inches	0-9	%
Belzer	<b>117.7*</b>	60.9	8.8	39	1.3	14.9
Ben	99.8	61.8	8.7	38	1.3	16.4
Kyle	102.8	61.0	8.8	44	2.7	15.3
Laker	104.4	62.0	8.9	31	0.7	14.2
Lebsock	104.4	61.9	8.8	35	0.0	16.2
Maier	107.9	62.0	8.8	35	0.0	16.7
McNeal (HRSW)	<b>120.6**</b>	61.7	8.3	36	0.0	16.1
Medora	94.0	61.9	8.6	42	0.0	16.8
Monroe	81.7	59.9	8.4	37	0.0	17.3
Mountrail	<b>111.7*</b>	61.1	8.6	37	0.0	15.7
Munich	98.9	61.6	8.6	33	0.0	16.8
Plaza	<b>111.6*</b>	61.3	8.7	32	0.0	14.3
Plenty	<b>111.3*</b>	61.9	8.6	42	1.3	15.9
Renville	101.8	61.2	8.9	39	0.7	16.3
Sceptre	104.4	61.1	8.8	39	0.3	15.7
Vic	91.7	61.5	8.9	39	0.0	16.3
Ward	89.9	61.5	8.8	41	0.0	16.8
Average	103.2	61.4	8.7	37.4	0.5	16.0
LSD (p=0.05)	10.0	0.6	0.2	2.3	1.4	-
CV%	5.8	0.5	1.6	3.7	176.4	-

1/ Yields are based on 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

2/ Lodging severity scores of 0 to 9 represent no lodging to all stems flat on the ground, respectively.

3/ Grain protein values adjusted to 12 percent grain moisture content.

\*\* Indicates highest yielding cultivar within a column.

\* Indicates cultivars yielding equal to highest yielding cultivar within a column based on Fisher's protected LSD (p=0.05).

#### Bridger Irrigated Durum Wheat (Exp. 009897)

Planted: March 28, 2000  
 Harvested: August 14, 2000  
 Fertility: 11-52-00, 120 lb/a in-furrow, March 28, 2000  
 40-20-00, 250 lb/a broadcast, May 23, 2000  
 Herbicide: Harmony Extra, 0.5 oz/a; Buctril, 1 pt/a; R-11, 1 pt/a, May 23, 2000  
 Insecticide: Malathion 5EC, 1 pt/a; R-11, 1 pt/a, May 23, 2000  
 Previous Crop: fallow  
 Irrigation: profile flooded, June 6 and 7, 2000  
 profile flooded, July 5 and 6, 2000  
 Precipitation: 4.26 inches

Table 5. Performance of 16 spring durum cultivars compared to McNeal hard red spring wheat tested under irrigated conditions near Hysham, Montana during 2000. Cultivars listed alphabetically. (Exp. 009896).

Cultivar	1/	Test Weight	Grain Moisture	Plant Height	2/	3/
	Grain Yield				Lodging Severity	Grain Protein
	bu/ac	lb/bu	%	inches	0-9	%
Belzer	<b>121.8*</b>	58.7	8.7	48	4.0	16.0
Ben	118.6	61.6	9.0	47	0.3	15.4
Kyle	96.5	58.7	8.1	50	6.7	16.7
Laker	<b>122.0*</b>	59.2	8.3	39	2.3	15.2
Lebsock	<b>138.7**</b>	62.0	8.9	44	0.3	15.5
Maier	<b>133.0*</b>	61.2	8.7	44	1.3	16.8
McNeal (HRSW)	121.0	58.8	7.9	42	0.0	16.5
Medora	104.3	59.4	8.7	52	3.0	16.7
Monroe	106.5	60.0	8.9	48	1.3	15.8
Mountrail	<b>130.3*</b>	59.5	8.8	40	2.0	15.5
Munich	<b>130.1*</b>	60.2	8.6	44	0.0	16.3
Plaza	<b>126.3*</b>	57.8	8.3	37	0.3	15.6
Plenty	103.6	59.3	8.5	48	5.3	15.9
Renville	103.6	58.2	8.2	49	5.3	17.3
Sceptre	108.2	58.7	8.6	48	3.7	15.7
Vic	114.9	61.0	8.9	49	2.3	15.8
Ward	102.8	60.6	9.0	48	0.3	16.3
Average	116.6	59.7	8.6	45.6	2.3	16.1
LSD (p=0.05)	17.2	1.9	0.6	4.8	3.6	-
CV%	8.8	1.9	3.9	6.4	95.5	-

1/ Yields are based on 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

2/ Lodging severity scores of 0 to 9 represent no lodging to all stems flat on the ground, respectively.

3/ Grain protein values adjusted to 12 percent grain moisture content.

\*\* Indicates highest yielding cultivar within a column.

\* Indicates cultivars yielding equal to highest yielding cultivar within a column based on Fisher's protected LSD (p=0.05).

#### Hysham Irrigated Durum Wheat (Exp. 009896)

Planted: March 20, 2000  
 Harvested: August 8, 2000  
 Fertility: 40-20-00, 250 lb/a broadcast, May 18, 2000  
 Herbicide: Express, 0.1 oz/a; Bronate, 16 oz/a; Starane, 5 oz/a, May 8, 2000  
 Insecticide: none  
 Irrigation: profile flooded, May 11, 2000  
 profile flooded, June 12, 2000  
 Previous Crop: sugar beets  
 Precipitation: not available

Table 6. Performance of 16 spring durum cultivars compared to McNeal hard red spring wheat tested under irrigated conditions at two locations in south central Montana during 2000. Cultivars listed alphabetically. (Exps. 009896 & 009897).

Cultivar	1/	Test Weight	Grain Moisture	Plant Height	2/	3/
	Grain Yield				Lodging Severity	Grain Protein
	bu/ac	lb/bu	%	inches	0-9	%
Belzer	<b>119.8*</b>	59.8	8.7	44	2.7	15.5
Ben	109.2	61.7	8.8	42	0.8	15.9
Kyle	99.7	59.9	8.5	47	4.7	16.0
Laker	<b>113.2*</b>	60.6	8.6	35	1.5	14.7
Lebsock	<b>121.6**</b>	61.9	8.9	39	0.2	15.9
Maier	<b>120.5*</b>	61.6	8.8	39	0.7	16.8
McNeal (HRSW)	<b>120.8*</b>	60.2	8.1	39	0.0	16.3
Medora	99.1	60.7	8.7	47	1.5	16.8
Monroe	94.1	60.0	8.7	42	0.7	16.6
Mountrail	<b>121.0*</b>	60.3	8.7	38	1.0	15.6
Munich	<b>114.5*</b>	60.9	8.6	39	0.0	16.6
Plaza	<b>119.0*</b>	59.6	8.5	35	0.2	15.0
Plenty	107.5	60.6	8.6	45	3.3	15.9
Renville	102.7	59.7	8.6	44	3.0	16.8
Sceptre	106.3	59.9	8.7	43	2.0	15.7
Vic	103.3	61.3	8.9	44	1.2	16.1
Ward	96.4	61.1	8.9	44	0.2	16.6
Average	109.9	60.6	8.7	41.5	1.4	16.0
LSD (p=0.05)	9.7	1.0	0.3	2.6	1.9	0.5
CV%	7.7	1.4	3.0	5.5	119.6	2.8

1/ Yields are based on 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

2/ Lodging severity scores of 0 to 9 represent no lodging to all stems flat on the ground, respectively.

3/ Grain protein values adjusted to 12 percent grain moisture content.

\*\* Indicates highest yielding cultivar within a column.

\* Indicates cultivars yielding equal to highest yielding cultivar within a column based on Fisher's protected LSD (p=0.05).

Table 7. Performance of 16 spring durum cultivars compared to McNeal hard red spring wheat tested across four locations in south central Montana during 2000. Cultivars listed alphabetically. (Exps. 009894, 009895, 009896 & 009897).

Cultivar	1/	Test Weight	Grain Moisture	Plant Height	2/
	Grain Yield				Grain Protein
	bu/ac	lb/bu	%	inches	%
Belzer	<b>66.3*</b>	56.2	8.3	32	16.4
Ben	60.7	58.1	8.2	32	17.2
Kyle	58.8	58.3	8.2	35	17.3
Laker	60.7	53.5	8.3	27	15.9
Lebsock	<b>67.8*</b>	60.3	8.4	29	17.0
Maier	<b>66.9*</b>	58.2	8.3	30	18.5
McNeal (HRSW)	<b>70.6**</b>	57.9	7.9	30	17.3
Medora	55.5	57.1	8.2	34	17.7
Monroe	52.8	56.3	8.2	31	17.6
Mountrail	<b>66.0*</b>	57.7	8.2	28	17.0
Munich	65.0	59.2	8.1	29	17.6
Plaza	<b>67.4*</b>	56.7	8.3	27	16.0
Plenty	60.5	51.6	8.1	33	17.0
Renville	58.9	57.9	8.2	33	17.8
Sceptre	57.5	52.2	8.2	31	17.3
Vic	56.9	58.0	8.4	32	17.1
Ward	53.1	56.4	8.3	33	17.9
Average	61.5	56.8	8.2	30.9	17.2
LSD (p=0.05)	5.3	ns	0.2	1.7	1.1
CV%	10.7	11.2	2.6	6.6	8.2

1/ Yields are based on 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

2/ Grain protein values adjusted to 12 percent grain moisture content.

\*\* Indicates highest yielding cultivar within a column.

\* Indicates cultivars yielding equal to highest yielding cultivar within a column based on Fisher's protected LSD (p=0.05).

ns Not significant at the 0.05 probability level.

Table 8. Yield<sup>1/</sup> of 16 spring durum cultivars compared to McNeal hard red spring wheat tested under dryland and irrigated conditions at two locations in south central Montana during 2000. Cultivars listed by declining four-location average yield. (Exps. 009894, 009895, 009896 & 009897).

Cultivar	Dryland			Irrigated			4 Location Average
	Molt	Ryegate	Average	Bridger	Hysham	Average	
	----- bushels/acre -----						
McNeal (HRSW)	16.8	<b>24.1*</b>	<b>20.5**</b>	<b>120.6**</b>	121.0	<b>120.8*</b>	<b>70.6**</b>
Lebsock	13.7	14.4	14.0	104.4	<b>138.7**</b>	<b>121.6**</b>	<b>67.8*</b>
Plaza	12.1	<b>19.7*</b>	15.9	<b>111.6*</b>	<b>126.3*</b>	<b>119.0*</b>	<b>67.4*</b>
Maier	10.2	16.4	13.3	107.9	<b>133.0*</b>	<b>120.5*</b>	<b>66.9*</b>
Belzer	10.8	15.0	12.9	<b>117.7*</b>	<b>121.8*</b>	<b>119.8*</b>	<b>66.3*</b>
Mountrail	10.5	11.5	11.0	<b>111.7*</b>	<b>130.3*</b>	<b>121.0*</b>	<b>66.0*</b>
Munich	10.6	<b>20.5*</b>	15.5	98.9	<b>130.1*</b>	<b>114.5*</b>	65.0
Ben	13.6	10.8	12.2	99.8	118.6	109.2	60.7
Laker	10.0	6.4	8.2	104.4	<b>122.0*</b>	<b>113.2*</b>	60.7
Plenty	10.1	<b>17.1*</b>	13.6	<b>111.3*</b>	103.6	107.5	60.5
Renville	10.9	<b>19.3*</b>	15.1	101.8	103.6	102.7	58.9
Kyle	11.2	<b>24.6**</b>	<b>17.9*</b>	102.8	96.5	99.7	58.8
Sceptre	9.1	8.2	8.6	104.4	108.2	106.3	57.5
Vic	9.5	11.3	10.4	91.7	114.9	103.3	56.9
Medora	11.3	12.6	11.9	94.0	104.3	99.1	55.5
Ward	10.5	9.2	9.8	89.9	102.8	96.4	53.1
Monroe	9.5	13.7	11.6	81.7	106.5	94.1	52.8
Average	11.2	15.0	13.1	103.2	116.6	109.9	61.5
LSD (p=0.05)	ns	7.8	4.5	10.0	17.2	9.7	5.3
CV%	26.3	31.1	29.9	5.8	8.9	7.7	10.7

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13.0 percent moisture content.

\*\* Indicates highest yielding cultivar within a column.

\* Indicates cultivars yielding equal to highest yielding cultivar within a column based on Fisher's protected LSD (p=0.05).

ns Not significant at the 0.05 probability level.