



## RESULTS OF AGRONOMIC AND WEED SCIENCE RESEARCH CONDUCTED IN SOUTH CENTRAL MONTANA - 2007

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

<http://www.sarc.montana.edu/annualreport/2007/>

- 
- PROJECT TITLE:** 2007 Off-Station Winter Wheat Variety Performance Trials in South Central Montana. This research is partially supported by Montana Farmers through the Montana Wheat and Barley Committee.
- PROJECT LEADERS:** Kenneth D. Kephart, Agronomist, SARC, Huntley  
Geraldine B. Opena, Research Associate, SARC, Huntley  
Phil L. Bruckner, Winter Wheat Breeder, PSPP, Bozeman  
James E. Berg, Winter Wheat Research Associate, PSPP, Bozeman
- PROJECT PERSONNEL:** Tom A. Fischer, Research Specialist and Farm Foreman, SARC, Huntley  
Paul Dixon, Yellowstone County Extension, Billings  
Byron Hould, Rosebud-Treasure County Extension, Forsyth  
Matthew McClellan, Big Horn County Extension, Hardin  
Travis Standley, Stillwater County Extension, Columbus
- COOPERATORS:** Don Holland, Farmer Cooperator, Forsyth  
Mike Greytak, Farmer Cooperator, Fly Creek (Hardin)  
Ellis Murdock, Farmer Cooperator, Lodge Grass  
Dave Kelsey, Farmer Cooperator, Molt  
Gary Broyles, Farmer Cooperator, Rapelje
- OBJECTIVES:** To provide wheat growers in south central Montana with a reliable, unbiased, up-to-date source of information that will permit valid comparisons among improved winter wheat varieties. This information should help winter wheat producers in south central Montana select varieties best suited to their particular area and growing conditions.
- METHODS:** The 2007 off-station winter wheat trials were established under dryland conditions near Forsyth under conventional summer fallow conditions; Hardin, Lodge Grass, Molt and Rapelje under no-till, chemical fallow conditions; and under no-till, irrigated conditions at Huntley (Fig. 1). Each dryland trial contained 25 winter wheat entries (21 cultivars, 4 experimental lines), and was planted using a partially balanced lattice design with three replications. The irrigated trial near Huntley contained 28 winter wheat entries (23 cultivars, 5 experimental lines) arranged in a randomized complete block design replicated three times. All entries were seeded at approximately 1 million seeds per acre under dryland conditions (~60 lb/a) and 1.5 million seeds per acre under irrigation (~90 lb/a). Actual seeding rates were calculated from the thousand kernel weight determined for the seed lot of each cultivar (Table 1), and varied from 67 to 93 pounds per acre for the dryland sites and from 100 to 140 pounds per acre under irrigation. Seeding rates were not adjusted for germination. Dryland test plots consisted of a 15-foot, 4-row plot with 14-inch row spacing. Irrigated test plots consisted of a 15-foot, 7-row plot with 7-inch row spacing. All rows of each harvested test plot were trimmed 36 inches and harvested using an experimental plot combine. Information pertaining to the traits and characteristics of the 28 winter wheat entries are provided in Table 2.
- 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. Two year (2006-07) and three year (2005-07) yield averages are provided for cultivars tested during previous years. Test weight (pounds per bushel) and grain

moisture content (percent) were obtained for each plot using a Dickey-john™ GAC 2100 grain analyzer. Reported grain protein content (percent) was determined by near-infrared reflectance for each entry, and adjusted to a 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. Lodging of all cultivars was noted at the irrigated Huntley and dryland Hardin locations during 2007, and recorded on a 0 to 9 scale representing no lodging to all stems lying flat on the ground, respectively. Heading was noted at Huntley when 50% of the heads in a plot had extended above the flag leaf collar. Heading dates were recorded in Julian days (number of days from January 1) for statistical purposes. Corresponding calendar dates also are presented. Information pertaining to the specific cultural management of each study site is listed at the bottom of their respective data table (Tables 3 through 8).

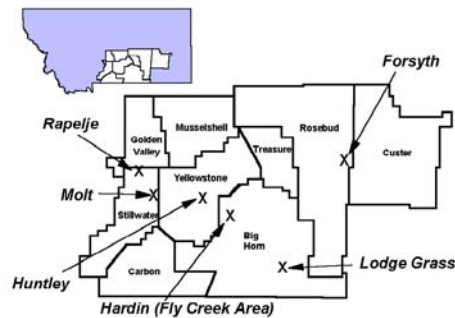


Figure 1. 2007 off-station winter wheat trial locations in south central Montana.

## **RESULTS:**

All six of the winter wheat test locations planted in the fall of 2007 received enough fall precipitation to facilitate germination and emergence. The irrigated site near Huntley was pre-irrigated in late August to saturate the soil profile before the trial was planted. Above average precipitation occurred throughout the region during October, resulting in about 6 inches of accumulated rainfall. Wet weather delayed planting of several sites, but especially affected planting at the Molt location. Short periods of extremely cold temperatures were experienced during November through early December, but temperatures were moderate for most of the winter months. Most of the test sites were dry over-winter, with very little snow accumulating. Spring rains produced average precipitation levels during most of the spring growth period. Above normal precipitation occurred during a period from late May to early June, resulting in 6 to 8 inches of rainfall at most test sites. Hot, dry weather occurred during late June and continuing through July hastened maturation of the crop, but soil moisture reserves were adequate for winter wheat to produce good yields at most sites. Overall, winter wheat yields and test weight values among the harvested trials in 2007 were above average, particularly at dryland locations, but grain protein content was much lower than average at all sites compared to these trials conducted the previous year.

Average winter wheat yield under irrigated condition in Huntley during 2007 was 104.3 bu/a (Table 3), comparable to irrigated winter wheat yield for this site the previous year. Lodging was evident in most entries, but was most severe for 'Genou', 'Rampart', 'Rocky' and 'Vanguard' winter wheat cultivars. Only the cultivar 'Garland', a Utah entry developed exclusively for production under irrigation, showed no sign of lodging under these conditions. Yields ranged from 83.2 bu/a for Rocky to 130.1 bu/a for 'Promontory'. 'BigSky' hard red winter wheat produced the heaviest test weight under irrigated conditions during 2006, averaging 63.5 lb/bu, with all 28 entries producing test weights heavier than or equal to 60 lb/bu. Grain protein averaged 12.0 percent and ranged from 10.6 to 13.8 percent. Two-year average yield for winter wheat varieties tested during

2006 and 2007 averaged 106.1 bu/a. Three-year average yield for winter wheat varieties tested during 2005 to 2007 averaged 98.2 bu/a with 'Yellowstone' winter wheat producing the highest average grain yield at 115.7 bu/a. Seven other commercial entries ('CDC Falcon', 'Hyalite', 'Jagalene', 'Norris', 'Promontory', 'Pryor' and 'Wahoo') have produced yields statistically equal to the yield of Yellowstone under irrigation at this site for the past three years.

Average yield under dryland conditions at Rapelje in 2007 was 73.7 bu/a (Table 4), only two bushels per acre less than winter wheat yields observed at this site in 2006. Yields ranged from 48.5 bu/a for 'Bynum' to 84.9 bu/a for Yellowstone. Thirteen additional entries including, BigSky, CDC Falcon, 'Deloris', 'Hyalite', Jagalene, 'Jerry', 'Morgan', Norris, 'NuSky', Promontory, Pryor, 'Tiber' and Wahoo also produced yields statistically equal with that of Yellowstone. Average test weight was 63.0 lb/bu, with all entries producing test weights heavier than 60 lb/bu. Grain protein content was low, averaging 9.1 percent and ranged from 8.2 to 11.5 percent. Three-year average yield for winter wheat varieties tested at Rapelje from 2005 and 2007 averaged 66.9 bu/a, with Yellowstone averaging 79.0 bu/a as the top yielding three-year entry. Hyalite, Jagalene, 'Jerry', 'Morgan', Norris, Promontory, Pryor and Wahoo produced yields ranging from 68.3 to 74.9 bu/a, equal to the yield produced by Yellowstone winter wheat the past three years at this location.

Average yield of the 25 winter wheat cultivars tested at Forsyth in 2007 was 41.2 bu/a (Table 5). This site received hail the previous year and was not harvested in 2006. Yields ranged from 32.4 bu/a for Hyalite to 52.3 bu/a for Wahoo. Pryor and 'Ledger' averaged 49.5 and 47.4 bu/a, respectively, which is statistically equal to the yield of Wahoo. Average test weight was 62.5 lb/bu, with all entries producing test weights heavier than 60 lb/bu. Grain protein content was low, averaging only 7.4 percent and ranged from 6.6 to 8.2 percent.

Agronomic performance of the winter wheat cultivars tested under dryland conditions near Lodge Grass during 2007 is presented in Table 6. Winter wheat grown in this region of south central Montana frequently suffers from the occurrence of dwarf bunt (*aka*, dwarf smut, TCK smut, *Tilletia controversa* Kuhn), but this disease was not evident during the 2007 season. The Lodge Grass location was established near the brow of a ridge, and did possess the coarsest textured and shallowest soils among all winter wheat test sites. Regardless, the above average precipitation received by the region resulted in an average winter wheat yield of 46.6 bu/a. Among the 25 cultivars, yields ranged from 32.1 bu/a for Yellowstone to 55.0 bu/a for Vanguard. Although Vanguard is a solid-stem type cultivar that historically performs best where wheat stem sawfly exists, wheat stem sawfly damage was not evident at this site in 2007. Average test weight was 61.2 lb/bu. Grain protein averaged only 7.0 percent and ranged from 6.0 to 8.4 percent.

Winter wheat yields under dryland conditions at the Fly Creek site near Hardin averaged 71.8 bu/a in 2007 (Table 7). Yields ranged from 61.0 bu/a for BigSky to 84.8 bu/a for Pryor. Seven other commercial cultivars (CDC Falcon, Neeley, Norris, Promontory, Rocky, Wahoo and Yellowstone) produced yields from 72.8 to 82.8 bu/a, statistically equal to the yield of Pryor. Average test weight was 60.5 lb/bu, and varied from 58.7 lb/bu for 'Jerry' and Deloris to 63.2 lb/bu for Promontory. Winter wheat plant heights at Hardin were 3 to 5 inches taller compared to the heights observed at other dryland test sites. Lodging was evident at the Hardin site, with 17 of the 25 cultivars possessing some degree of lodging before harvest. Most of the cultivars that produced test weights lighter than 60 lb/bu were among those that experienced lodging. Grain protein levels averaged 10.9 percent among the 25 entries, with Jagalene possessing the highest protein level at 13.0 percent. Wahoo and Pryor are the highest yielding cultivars tested at Hardin the past two and three years, respectively.

Average yield under dryland conditions at Molt in 2007 was 21.8 bu/a (Table 8), or about one third of the winter wheat yield observed at Molt in 2006. The Molt location was planted late (November 8, 2006) and suffered from an infestation of cheatgrass (*aka*, downy brome, *Bromus tectorum*), which resulted in reduced winter wheat stands. Yields at Molt also were likely affected by unusually hot daytime temperatures experience during the mid-to-late grain fill period of the trial. Yields ranged from 12.3 bu/a for Norris to 31.2 bu/a for the experimental line 'MTS04120'. The highest yielding commercial cultivar in 2007 was Pryor at 28.5 bu/a. Average test weight was 60.5 lb/bu. Grain protein averaged 9.9 percent and ranged from 8.6 percent for Pryor to 10.9 percent for Bynum. Three-year average yield for winter wheat varieties tested at Molt from 2005 to 2007 averaged 43.7 bu/a, with Wahoo averaging 51.6 bu/a as the top yielding three-year entry. Genou, Neeley, Pryor, Tiber and Yellowstone produced yields from 46.1 to 50.8 bu/a, equal to the yield produced by Wahoo winter wheat the past three years at this location.

#### **SUMMARY:**

Significant differences in yield among cultivars tested in 2007 were obtained under both dryland and irrigated conditions (Tables 9, 10 and 11). Pryor produced the highest yield of 69.6 bu/a, averaged across all six of the test locations harvested in 2007, and produced the highest yield (61.2 bu/a) among entries tested at the five dryland test locations. Promontory was the highest yielding entry tested under irrigation near Huntley in 2007 (Tables 3 and 9), averaging 130.1 bu/a. The cultivar Wahoo averaged 59.9 bu/a under dryland conditions, statistically equal to the average grain yield achieved by Pryor under the same conditions. Surprisingly, two of the older cultivars in the tests, 'Neeley' and 'Tiber', performed well at only 2 of the 5 individual dryland sites, but yielded well enough at the remaining sites to rank among the top yielding entries under dryland conditions.

Since 2005, experiments representing 17 location-years of testing have uniformly tested 19 cultivars at several dryland and irrigated sites in south central Montana (Table 10). Under both dryland and irrigated conditions, averaged across three years, Pryor hard red winter wheat has been the highest yielding cultivar averaging 65.7 bu/a, with only Wahoo and Yellowstone producing yields equal to those of Pryor under the same conditions. Pryor, Wahoo, Neeley and Yellowstone also have been the highest yielding cultivars tested over three years, 56.5, 56.5, 53.2 and 52.8 bu/a, respectively, when comparing only dryland environments tested in south central Montana since 2005 (Table 11).

#### **FUTURE PLANS:**

All six off-station winter wheat variety evaluations will be planted during the fall of 2007 for continuation of the program through 2008. The authors of this article wish to thank the farmer-cooperators involved who provided land and other resources for these trials, and the Montana Wheat and Barley Committee for continued financial support of this research project.

Table 1. Adjusted seeding rates used to establish 28 commercial and experimental winter wheat cultivars tested at six off-station sites in south central Montana during 2007.

1/ Cultivar	Thousand Kernel Weight grams	Seeds per Pound #	2/ Dryland Seeding Rate		3/ Irrigated Seeding Rate	
			per plot grams	per acre pounds	per plot grams	per acre pounds
<u>Commercial</u>						
BigSky	39.4	11,532	63.3	91	94.9	136
Bynum	35.7	12,712	57.4	82	86.1	123
CDC Falcon	29.0	15,636	46.7	67	70.0	100
Deloris	33.7	13,466	54.2	78	81.3	117
Garland	38.5	11,804	61.8	89	92.7	133
Genou	32.7	13,883	52.6	75	78.8	113
Hyalite	33.3	13,629	53.5	77	80.3	115
Jagalene	40.5	11,223	65.0	93	97.5	140
Jerry	38.2	11,877	61.4	88	92.1	132
Ledger	37.3	12,158	60.0	86	90.0	129
Moreland	36.2	12,558	58.1	83	87.1	125
Morgan	31.3	14,501	50.3	72	75.5	108
Neeley	40.2	11,296	64.6	93	96.9	139
Norris	39.6	11,468	63.6	91	95.4	137
NuSky	32.0	14,192	51.4	74	77.1	111
Promontory	38.9	11,659	62.6	90	93.9	135
Pryor	30.4	14,955	48.8	70	73.2	105
Rampart	35.6	12,748	57.2	82	85.8	123
Rocky	32.5	13,965	52.2	75	78.4	112
Tiber	37.3	12,167	60.0	86	89.9	129
Vanguard	34.8	13,048	55.9	80	83.9	120
Wahoo	31.9	14,228	51.3	74	76.9	110
Yellowstone	38.3	11,868	61.5	88	92.2	132
<u>Experimental</u>						
MT0495	32.2	14,110	51.7	74	77.6	111
MTCL0477	37.2	12,194	59.8	86	89.7	129
MTS04114	33.2	13,665	53.4	77	80.1	115
MTS04120	33.9	13,384	54.5	78	81.8	117
UT9743-42	34.7	13,075	55.8	80	83.7	120

1/ All seed lots treated with 1.0 fl oz of Dividend XL/cwt, and 1.5 fl oz of Gaucho 600/cwt.

2/ Equivalent to 1 million seeds per acre on a mass basis.

3/ Equivalent to 1.5 million seeds per acre on a mass basis.

Table 2. Selected characteristics and traits of 28 commercial and experimental winter wheat cultivars performance tested at six off-station sites in south central Montana during 2006.

Cultivar	1/ Origin	Year of Release	2/ Market Class	3/ PVP Yes/No	4/ Maturity	5/ Coleoptile Length	Chaff Color	6/ Winter Survival 1-5	7/ Straw Strength	Solid Stem Yes/No	8/ Disease Resistance				9/ Quality		10/ Clearfield Type Yes/No
											Leaf Rust	Stem Rust	Stripe Rust	Dwarf Bunt	Milling 1-5	Baking 1-5	
<u>Commercial</u>																	
BigSky	MSU	2001	HRW	Y	M	M	White	4	S	N	S	R	S	S	4	3	N
Bynum <sup>§</sup>	MSU	2006	HRW	Y	E	L	Brown	2	S	Y	-	M	R	S	4	4	Y
CDC Falcon <sup>§</sup>	CDC	1999	HRW	Y	M-L	M	White	4	MS	N	R	R	MS	S	3	3	N
Deloris	USU	2002	HRW	N	E	L	White	-	M	N	-	-	S	R	5	4	N
Garland	USU	1993	HRW	Y	M-L	S	White	-	S	N	-	-	S	MR	3	3	N
Genou	MSU	2004	HRW	Y	M	L	White	2	MS	Y	-	S	MS	S	4	4	N
Hyalite <sup>§</sup>	MSU	2006	HW	Y	E	S	White	3	S	N	-	R	S	S	3	3	Y
Jagalene	AgriPro	2002	HRW	Y	E	M	White	2	S	N	MR	R	R	S	3	3	N
Jerry	NDSU	2001	HRW	N	M-L	M	White	5	MS	N	R	R	MR	S	3	3	N
Ledger	WestBred	2005	HRW	Y	E	M	White	2	W	Y	-	-	MR	S	4	3	N
Moreland	UI	2002	HRW	Y	E	M	Brown	3	S	N	-	-	S	S	3	4	N
Morgan <sup>§</sup>	WestBred	1996	HRW	Y	M	S	White	5	MS	N	MS	MR	S	S	3	3	N
Neeley	UI	1980	HRW	N	M	M	White	3	MS	N	S	S	S	S	3	3	N
Norris <sup>§</sup>	MSU	2005	HRW	Y	E	M	Brown	3	S	N	-	S	MS	S	3	3	Y
NuSky	MSU	2001	HW	N	M	S	White	4	M	N	S	R	VS	S	5	4	N
Promontory	USU	1990	HRW	N	E	M	Brown	2	MS	N	S	S	MR	R	5	4	N
Pryor	WestBred	2002	HRW	Y	M-L	M	White	3	S	N	-	S	S	S	3	3	N
Rampart	MSU	1996	HRW	N	M	L	Brown	2	M	Y	S	MR	R	S	4	4	N
Rocky	AgriPro	1978	HRW	N	E	M	White	2	MW	N	-	R	MS	S	3	3	N
Tiber	MSU	1988	HRW	N	M	M	Brown	3	S	N	-	S	VS	S	3	3	N
Vanguard	MSU	1995	HRW	N	M	L	White	2	MS	Y	S	S	MR	S	4	4	N
Wahoo	UNL	2000	HRW	Y	E	M	White	3	S	N	MR	MR	MS	S	3	2	N
Yellowstone	MSU	2005	HRW	Y	M	S	White	4	MS	N	S	S	R	S	3	4	N
<u>Experimental</u>																	
MT0495	MSU	-	HRW	-	M	S	White	4	S	N	-	S	R	S	3	3	N
MTCL0477	MSU	-	HRW	-	M	M	White	4	S	N	-	S	MR	S	3	3	Y
MTS04114	MSU	-	HW	-	M	M	White	3	S	Y	-	M	R	S	3	4	N
MTS04120	MSU	-	HRW	-	M	L	White	2	S	Y	-	S	R	S	3	4	N
UT9743-42	USU	-	HRW	-	-	-	-	-	S	N	-	-	MR	R	4	4	N

1/ AgriPro=AgriPro Seeds Inc. Berthoud, Colorado; CDC=Crop Development Centre, University of Saskatchewan; MSU=Montana State University; NDSU=North Dakota State University; UI=University of Idaho; UNL=University of Nebraska-Lincoln; USU=Utah State University; WestBred=WestBred LLC, Bozeman, Montana.

2/ HRW=hard red winter wheat market class; HW=hard white wheat market class.

3/ Indicates a cultivar is protected under the Federal Plant Variety Protection Act of 1970 and amended in 1995.

4/ E=early maturity, M=medium maturity, L=late maturity.

5/ L=long coleoptile length, M=medium coleoptile length, S=short coleoptile length.

6/ Winter survival rated from 1 to 5 where 1=poor and 5=best winter survival, respectively, based on years of observations at Sidney, Moccasin and Williston, North Dakota.

7/ S=strong straw strength, MS=moderately strong straw strength, M=medium straw strength, MW=moderately weak straw strength, W=weak straw strength.

8/ R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible, VS=very susceptible.

9/ Milling and baking quality rated from 1 to 5 where 1=poor and 5=superior quality, respectively.

10/ Signifies a cultivar possessing the Clearfield trait imparting tolerance to Beyond<sup>®</sup> (imazamox) herbicide.

§ 'Bynum', 'CDC Falcon', 'Hyalite', 'Morgan' and 'Norris' licensed for sale on an exclusive basis by WestBred LLC, Bozeman, Montana.

Table 3. Performance of 28 commercial and experimental winter wheat cultivars tested under no-till, irrigated conditions near Huntley, Montana during 2007. Cultivars listed alphabetically. (Exp. 073880).

Cultivar	1/ Grain Yield			Test Weight lb/bu	Grain Moisture %	2/ Grain Protein	Plant Height inches	3/ Lodging	Heading Date	
	2007	2006-07	2005-07			%		0-9	Julian	Calendar
	----- bushels per acre -----									
<b>Commercial</b>										
BigSky	88.8	94.3	91.8	63.5	9.6	12.3	47.8	6.3	155.0	Jun 3
Bynum	90.3	102.2	94.3	61.8	9.4	13.8	44.8	7.3	154.3	Jun 2
CDC Falcon	<b>121.0*</b>	<b>121.2*</b>	<b>108.3*</b>	63.0	9.6	10.7	40.8	1.0	154.0	Jun 2
Deloris	110.0			61.5	10.0	12.0	45.1	6.7	156.7	Jun 4
Garland	101.0			60.0	9.1	12.2	42.4	0.0	159.3	Jun 7
Genou	107.0	106.8	96.1	61.6	9.5	12.6	43.9	7.7	155.3	Jun 3
Hyalite	111.0	<b>114.0*</b>	<b>102.8*</b>	62.8	9.8	12.4	44.1	4.3	153.0	Jun 1
Jagalene	<b>114.3*</b>	<b>117.5*</b>	<b>110.2*</b>	62.8	9.8	11.3	41.7	3.0	149.7	May 28
Jerry	103.5	103.4	97.9	61.8	9.6	12.4	46.8	6.0	154.3	Jun 2
Ledger	93.1	105.6		61.7	9.6	11.6	40.2	5.7	154.7	Jun 2
Moreland	<b>121.6*</b>			60.6	9.0	12.1	38.9	1.0	154.7	Jun 2
Morgan	90.8	97.9	91.6	60.9	9.2	11.7	44.3	7.3	156.3	Jun 4
Neeley	97.8	100.2	95.9	61.1	9.5	12.8	43.8	7.3	159.3	Jun 7
Norris	110.0	106.1	<b>103.8*</b>	62.8	9.5	11.8	43.1	6.7	149.7	May 28
NuSky	94.1	99.8	85.4	61.9	9.2	11.2	44.5	6.3	155.7	Jun 3
Promontory	<b>130.1**</b>	<b>125.0**</b>	<b>109.0*</b>	62.3	9.5	10.6	43.3	1.0	154.7	Jun 2
Pryor	<b>111.6*</b>	<b>121.4*</b>	<b>108.3*</b>	61.2	9.5	10.9	42.2	3.0	155.7	Jun 3
Rampart	94.6	94.3	88.5	62.2	9.7	13.4	44.0	7.7	155.7	Jun 3
Rocky	83.2	85.1	82.5	63.2	9.6	12.6	46.0	7.7	153.7	Jun 1
Tiber	95.4	95.7	88.3	62.1	9.8	12.3	44.8	6.0	158.3	Jun 6
Vanguard	89.0	95.9	94.7	61.6	9.4	13.8	44.4	7.7	155.7	Jun 3
Wahoo	102.2	<b>113.4*</b>	<b>100.9*</b>	61.1	9.4	11.2	42.3	6.0	149.7	May 28
Yellowstone	111.0	<b>123.0*</b>	<b>115.7**</b>	61.6	9.5	11.7	44.5	5.0	156.0	Jun 4
<b>Experimental</b>										
MT0495	110.5			60.2	9.5	12.3	41.9	3.7	155.0	Jun 3
MTCL0477	<b>114.3*</b>			62.6	9.6	11.9	42.9	2.3	156.0	Jun 4
MTS04114	104.1			62.6	9.6	12.0	42.1	2.3	154.7	Jun 2
MTS04120	<b>118.3*</b>			63.2	9.7	11.7	44.7	3.7	156.0	Jun 4
UT9743-42	103.0			60.7	9.4	12.0	33.7	0.7	155.7	Jun 3
Average	104.3	106.1	98.2	61.9	9.5	12.0	43.2	4.8	155.0	Jun 3
PLSD (p=0.05)	18.7	15.8	15.4	0.9	0.4	0.9	ns	2.4	1.2	
CV%	11.0	12.3	16.4	0.9	2.4	4.6	10.4	30.9	0.5	

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13 percent moisture content.

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

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

\*\* 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 Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

Huntley Irrigated Winter Wheat (Exp. 073880)

Planted:	September 29, 2006	Harvested:	July 30, 2007
Fertility:	11-52-00, 100 lbs/a at planting. 46-0-0, 220 lbs/a, October 13, 2006.		
Herbicide:	Bronate Advanced, 14 oz/a + Harmony Extra, 0.33 oz/a + Olympus 0.6 oz/a + R-11, 4 oz/a, POST, April 24, 2007.		
Previous crop:	spring barley (alfalfa in 2005)		
Irrigation:	profile flooded, August 28, 2005 (preplant).		
Precipitation:	13.74 inches.		

Table 4. Performance of 25 commercial and experimental winter wheat cultivars tested under no-till, dryland conditions near Rapelje, Montana during 2007. Cultivars listed alphabetically. (Exp. 073881).

Cultivar	1/ Grain Yield			Test Weight	Grain Moisture	2/ Grain Protein		Plant Height
	2007	2006-07	2005-07			%	%	
	----- bushels/acre-----			lb/bu	%	%	inches	
<u>Commercial</u>								
BigSky	<b>78.6*</b>	74.4	63.5	64.1	9.2	9.0	37.5	
Bynum	48.5	57.7	55.5	62.5	8.8	9.5	34.3	
CDC Falcon	<b>70.2*</b>	70.6	59.2	62.3	9.1	8.7	38.2	
Deloris	<b>79.8*</b>			63.6	9.3	8.7	35.5	
Genou	54.2	66.4	59.3	63.3	9.3	8.2	37.6	
Hyalite	<b>73.3*</b>	77.1	<b>71.3*</b>	63.4	9.2	9.3	32.9	
Jagalene	<b>73.4*</b>	76.3	<b>73.8*</b>	64.1	9.0	11.5	36.9	
Jerry	<b>75.8*</b>	73.2	<b>70.1*</b>	62.1	9.2	9.4	35.3	
Ledger	69.8	73.6		62.9	9.1	8.8	36.7	
Morgan	<b>81.2*</b>	76.0	<b>68.3*</b>	62.6	9.1	8.5	32.2	
Neeley	70.2	73.5	66.2	63.3	9.3	8.3	34.6	
Norris	<b>77.3*</b>	79.9	<b>71.5*</b>	63.7	8.9	9.1	36.8	
NuSky	<b>82.5*</b>	76.4	65.7	62.9	9.2	9.4	36.2	
Promontory	<b>81.6*</b>	80.9	<b>74.9*</b>	64.5	9.2	8.6	35.9	
Pryor	<b>78.7*</b>	82.2	<b>73.8*</b>	63.0	9.1	8.3	35.4	
Rampart	64.5	65.2	58.2	62.1	8.7	10.1	38.8	
Rocky	66.0	69.4	60.8	63.4	9.4	8.6	34.3	
Tiber	<b>79.0*</b>	74.0	65.6	62.7	8.9	9.3	36.2	
Vanguard	60.4	65.3	59.4	62.9	9.1	9.6	36.8	
Wahoo	<b>82.9*</b>	80.7	<b>74.8*</b>	61.5	9.0	9.9	37.3	
Yellowstone	<b>84.9**</b>	84.4	<b>79.0**</b>	62.0	9.0	8.8	35.2	
<u>Experimental</u>								
MT0495	<b>73.3*</b>			62.1	8.9	9.1	34.2	
MTCL0477	<b>81.3*</b>			62.4	9.3	8.2	37.2	
MTS04114	<b>81.4*</b>			62.8	9.1	11.0	36.3	
MTS04120	<b>74.3*</b>			63.5	9.3	8.7	34.1	
Average	73.7	73.9	66.9	63.0	9.1	9.1	35.9	
PLSD (p=0..05)	14.8	ns	11.0	0.6	0.3	1.0	2.9	
CV%	12.2	15.7	17.1	0.6	1.7	6.1	4.9	

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13 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 Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

Rapelje Dryland Winter Wheat (Exp. 073881)

Planted:	September 27, 2006
Harvested:	July 31, 2007
Fertility:	11-52-00, 100 lbs/a at planting
Herbicide:	Glean, 0.10 oz/a, pre-plant
Previous crop:	chemical fallow

Table 5. Performance of 25 commercial and experimental winter wheat cultivars tested under conventional, dryland conditions near Forsyth, Montana during 2007. Cultivars listed alphabetically. (Exp. 073882).

Cultivar	1/	Test Weight	Grain Moisture	2/	Plant Height
	Grain Yield			Grain Protein	
	bushels/acre	lb/bu	%	%	inches
<u>Commercial</u>					
BigSky	40.8	64.0	9.2	7.6	38.2
Bynum	35.2	62.9	9.6	8.2	33.3
CDC Falcon	41.9	62.6	9.6	7.1	28.1
Deloris	38.7	62.4	9.1	7.9	39.3
Genou	38.5	63.0	9.5	7.0	35.3
Hyalite	32.4	63.0	9.2	7.9	30.5
Jagalene	37.0	64.1	9.4	7.9	30.4
Jerry	41.9	61.2	9.3	7.7	37.1
Ledger	<b>47.4*</b>	62.5	9.4	7.7	30.5
Morgan	41.5	62.6	9.0	7.5	35.0
Neeley	44.1	62.8	9.3	7.4	35.0
Norris	40.9	63.1	9.0	7.2	32.4
NuSky	39.4	61.8	9.0	7.3	35.9
Promontory	39.1	64.0	9.3	7.5	31.9
Pryor	<b>49.5*</b>	61.8	9.5	6.9	29.8
Rampart	34.1	62.6	9.5	7.6	34.3
Rocky	42.8	62.2	9.8	7.0	34.5
Tiber	40.8	63.0	9.1	7.4	37.9
Vanguard	38.0	62.8	9.5	7.8	36.4
Wahoo	<b>52.3**</b>	60.8	9.5	7.0	32.4
Yellowstone	45.7	61.9	9.5	7.6	35.0
<u>Experimental</u>					
MT0495	40.5	61.1	8.9	7.3	30.7
MTCL0477	43.4	61.5	9.2	6.6	32.8
MTS04114	44.3	63.0	9.3	7.5	32.0
MTS04120	39.2	62.4	9.4	7.2	35.5
Average	41.2	62.5	9.3	7.4	33.8
PLSD (p=0.05)	5.7	0.4	0.3	0.4	2.1
CV%	7.6	0.4	1.8	3.2	3.8

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13 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).

Forsyth Dryland Winter Wheat (Exp. 073882)

Planted:	September 8, 2006
Harvested:	July 25, 2007
Fertility:	11-52-00, 100 lbs/a at planting.
Herbicide:	none
Previous crop:	chemical fallow

Table 6. Performance of 25 commercial and experimental winter wheat cultivars tested under no-till, dryland conditions near Lodge Grass, Montana during 2007. Cultivars listed alphabetically. (Exp. 073883).

Cultivar	1/ Grain Yield			Test Weight	Grain Moisture	2/ Grain Protein		Plant Height
	2007	2006-07	2005-07			%	%	
	----- bushels/acre-----			lb/bu	%	%	inches	
<u>Commercial</u>								
BigSky	42.3	36.5	28.5	62.2	11.6	6.8	34.1	
Bynum	42.8	39.2	29.3	61.9	12.3	7.9	34.4	
CDC Falcon	<b>48.5*</b>	43.5	30.6	61.4	13.2	7.2	27.7	
Deloris	42.4			61.7	12.0	6.8	37.4	
Genou	<b>45.5*</b>	44.0	33.1	61.5	13.2	6.7	34.1	
Hyalite	<b>48.4*</b>	43.4	31.1	62.2	11.5	7.8	32.7	
Jagalene	<b>44.4*</b>	42.9	29.6	63.0	12.3	7.7	30.8	
Jerry	39.4	40.0	28.8	59.7	12.8	6.9	34.0	
Ledger	39.7	42.9		60.9	13.2	6.7	27.0	
Morgan	39.3	39.8	30.2	61.1	12.2	6.8	33.9	
Neeley	<b>49.8*</b>	46.9	36.1	60.7	13.0	6.3	32.8	
Norris	42.1	39.5	29.6	61.2	11.8	6.6	31.5	
NuSky	<b>47.1*</b>	39.9	29.6	60.1	11.5	6.9	34.2	
Promontory	43.7	40.1	29.3	63.3	12.2	7.1	30.4	
Pryor	<b>54.5*</b>	49.1	35.4	60.3	12.4	6.1	29.8	
Rampart	<b>53.3*</b>	47.1	34.6	61.5	12.4	7.8	36.8	
Rocky	<b>51.2*</b>	43.6	32.5	61.4	13.0	6.5	34.4	
Tiber	<b>51.6*</b>	46.5	36.0	60.3	11.9	7.0	39.0	
Vanguard	<b>55.0**</b>	45.2	33.6	60.9	12.8	8.4	38.4	
Wahoo	<b>53.6*</b>	49.5	35.1	59.4	12.4	7.1	33.3	
Yellowstone	32.1	31.2	23.4	60.5	12.3	7.1	28.8	
<u>Experimental</u>								
MT0495	<b>49.6*</b>			59.9	12.4	6.8	29.6	
MTCL0477	<b>51.8*</b>			60.6	11.7	6.0	31.0	
MTS04114	<b>48.0*</b>			62.1	11.6	7.1	30.4	
MTS04120	<b>48.3*</b>			61.6	12.8	6.8	34.7	
Average	46.6	42.5	31.4	61.2	12.3	7.0	32.8	
PLSD (p=0.05)	11.0	ns	ns	0.7	0.5	0.7	3.8	
CV%	13.0	25.3	28.5	0.6	2.3	5.7	6.7	

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13 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 Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

Lodge Grass Dryland Winter Wheat (Exp. 073883)

Planted:	October 2, 2006
Harvested:	July 25, 2007
Fertility:	11-52-00, 100 lbs/a at planting; 46-0-0, 100 lbs/a, spring top dress.
Herbicide:	none
Previous crop:	chemical fallow

Table 7. Performance of 25 commercial and experimental winter wheat cultivars tested under no-till, dryland conditions near Hardin (Fly Creek), Montana during 2007. Cultivars listed alphabetically. (Exp. 073884).

Cultivar	1/ Grain Yield			Test Weight	Grain Moisture	2/ Grain Protein		Plant Height	3/ Lodging
	2007	2006-07	2005-07			%	%		
	-----	bushels/acre	-----	lb/bu	%	%	inches	0-9	
<u>Commercial</u>									
BigSky	61.0	55.5	54.6	59.8	11.8	11.5	43.1	0.0	
Bynum	66.2	59.7	55.1	59.7	13.0	11.6	40.7	0.7	
CDC Falcon	<b>82.8*</b>	<b>68.0*</b>	<b>62.5*</b>	60.8	13.7	10.3	35.6	0.0	
Deloris	64.5			58.7	12.1	10.8	40.0	3.3	
Genou	69.1	58.9	56.1	59.9	13.3	11.0	34.8	4.0	
Hyalite	67.5	61.7	59.0	61.1	12.5	11.3	37.0	0.1	
Jagalene	64.8	59.9	60.8	62.3	12.4	13.0	35.6	0.0	
Jerry	63.4	54.8	56.1	58.7	12.9	11.2	38.3	3.0	
Ledger	70.5	<b>64.2*</b>		61.0	13.2	10.1	33.8	0.0	
Morgan	70.2	<b>62.4*</b>	57.1	60.2	12.6	10.4	40.0	0.7	
Neeley	<b>80.2*</b>	<b>70.8*</b>	<b>64.0*</b>	61.2	12.2	10.2	39.8	3.0	
Norris	<b>78.7*</b>	<b>69.2*</b>	<b>64.7*</b>	62.6	11.8	10.6	39.6	0.0	
NuSky	72.2	<b>62.0*</b>	56.1	61.7	11.4	11.9	40.4	0.0	
Promontory	<b>75.8*</b>	<b>63.8*</b>	59.8	63.2	12.1	10.1	37.8	1.0	
Pryor	<b>84.8**</b>	<b>70.2*</b>	<b>68.7**</b>	59.4	12.4	9.8	34.1	0.0	
Rampart	64.5	56.3	53.3	59.4	12.9	11.2	39.5	4.4	
Rocky	<b>72.8*</b>	<b>66.5*</b>	<b>60.8*</b>	61.9	12.8	10.5	39.4	4.7	
Tiber	69.8	61.8	56.9	58.8	13.1	12.1	44.5	3.6	
Vanguard	61.7	54.2	51.9	59.5	13.3	10.2	42.5	2.4	
Wahoo	<b>82.7*</b>	<b>72.5**</b>	<b>68.3*</b>	60.2	12.5	10.9	32.6	1.4	
Yellowstone	<b>76.0*</b>	<b>67.8*</b>	<b>64.9*</b>	60.0	11.9	10.4	39.5	0.0	
<u>Experimental</u>									
MT0495	<b>74.4*</b>			59.8	11.5	10.9	35.1	1.0	
MTCL0477	<b>78.1*</b>			59.9	11.5	10.1	37.6	1.7	
MTS04114	68.2			61.0	12.0	11.0	34.5	2.3	
MTS04120	<b>75.9*</b>			61.5	12.9	11.5	39.4	0.4	
Average	71.8	63.0	59.5	60.5	12.5	10.9	38.2	1.5	
PLSD (p=0.05)	12.0	10.6	8.9	1.4	0.5	1.8	3.0	2.5	
CV%	9.4	14.0	15.6	1.3	2.3	9.5	4.4	100.0	

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13 percent moisture content.

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

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

\*\* 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).

Fly Creek Dryland Winter Wheat (Exp. 073884)

Planted:	October 2, 2006
Harvested:	July 25, 2007
Fertility:	11-52-00, 100 lbs/a at planting; 46-0-0, 100 lbs/a, spring top dress.
Herbicide:	n/a
Previous crop:	chemical fallow

Table 8. Performance of 25 commercial and experimental winter wheat cultivars tested under no-till, dryland conditions near Molt, Montana during 2007. Cultivars listed alphabetically. (Exp. 073885).

Cultivar	1/ Grain Yield			Test Weight	Grain Moisture	2/ Grain Protein		Plant Height
	2007	2006-07	2005-07			%	%	
	----- bushels/acre-----			lb/bu	%	%	inches	
<u>Commercial</u>								
BigSky	19.7	37.8	41.1	61.4	9.2	10.3	31.2	
Bynum	14.5	33.6	37.2	59.9	8.5	10.9	28.6	
CDC Falcon	13.9	37.8	41.2	60.6	9.0	10.8	24.3	
Deloris	22.8			61.0	9.4	10.6	31.9	
Genou	20.3	47.2	<b>49.5*</b>	59.7	8.9	9.7	30.2	
Hyalite	23.4	38.7	40.3	61.2	9.2	9.5	29.8	
Jagalene	20.1	37.4	40.7	62.0	9.0	10.4	26.4	
Jerry	14.9	37.6	39.6	59.4	9.1	10.0	28.0	
Ledger	24.7	41.4		59.4	8.5	9.5	28.3	
Morgan	21.9	41.5	42.9	60.6	9.0	9.5	29.2	
Neeley	26.8	47.7	<b>50.8*</b>	60.8	9.1	10.0	28.8	
Norris	12.3	34.4	40.6	60.9	8.8	9.9	29.2	
NuSky	23.3	40.4	43.8	61.4	9.5	10.4	29.2	
Promontory	17.3	36.0	41.7	61.1	9.2	9.9	28.7	
Pryor	28.5	44.0	<b>46.9*</b>	61.5	9.0	8.6	27.8	
Rampart	20.2	39.9	42.3	59.9	8.8	9.1	30.2	
Rocky	25.2	44.0	44.3	61.2	9.4	9.6	31.0	
Tiber	28.0	44.5	<b>47.5*</b>	61.2	9.3	9.9	32.7	
Vanguard	25.4	39.8	42.8	60.2	9.0	10.5	31.1	
Wahoo	25.6	47.9	<b>51.6**</b>	58.4	8.9	9.1	27.7	
Yellowstone	25.2	44.0	<b>46.1*</b>	60.3	9.6	9.7	28.2	
<u>Experimental</u>								
MT0495	22.9			59.3	8.9	10.2	27.1	
MTCL0477	18.5			60.3	9.6	10.1	28.0	
MTS04114	17.6			60.2	9.2	9.9	28.8	
MTS04120	31.2			60.5	9.2	9.0	31.3	
Average	21.8	40.8	43.7	60.5	9.1	9.9	29.1	
PLSD (p=0.05)	ns	ns	6.6	1.0	0.3	ns	ns	
CV%	33.9	19.0	15.7	1.0	2.1	8.5	8.9	

1/ Yields are based on a 60 pound standard bushel weight and adjusted to 13 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 Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

Molt Dryland Winter Wheat (Exp. 073885)

Planted:	November 8, 2006
Harvested:	July 31, 2007
Fertility:	11-52-00, 100 lbs/a at planting; 46-0-0, 100 lbs/a, spring top dress.
Herbicide:	LV6 + Affinity
Previous crop:	chemical fallow

Table 9. Grain yield<sup>1/</sup> of 28 commercial and experimental winter wheat cultivars tested at six locations in south central Montana during 2007. Varieties listed by declining average yield across all locations.

Cultivar	Lodge							
	Rapelje No-Till Dryland	Forsyth Conv. Dryland	Grass No-Till Dryland	Hardin No-Till Dryland	Molt No-Till Dryland	Dryland Locations Average	Huntley No-Till Irrigated	All Locations Average
	----- bushels per acre -----							
Pryor	<b>78.7*</b>	<b>49.5*</b>	<b>54.5*</b>	<b>84.8**</b>	28.5	<b>61.2**</b>	<b>111.6*</b>	<b>69.6**</b>
Wahoo	<b>82.9*</b>	<b>52.3**</b>	<b>53.6*</b>	<b>82.7*</b>	25.6	<b>59.9*</b>	102.2	<b>67.0*</b>
Promontory	<b>81.6*</b>	39.1	43.7	<b>75.8*</b>	17.3	51.7	<b>130.1**</b>	<b>64.8*</b>
MTS04120	<b>74.3*</b>	39.2	<b>48.3*</b>	<b>75.9*</b>	31.2	<b>53.4*</b>	<b>118.3*</b>	<b>64.2*</b>
MTCL0477	<b>81.3*</b>	43.4	<b>51.8*</b>	<b>78.1*</b>	18.5	<b>54.1*</b>	<b>114.3*</b>	<b>64.2*</b>
CDC Falcon	<b>70.2*</b>	41.9	<b>48.5*</b>	<b>82.8*</b>	13.9	51.7	<b>121.0*</b>	<b>63.3*</b>
Neeley	70.2	44.1	<b>49.8*</b>	<b>80.2*</b>	26.8	<b>54.8*</b>	97.8	<b>62.0*</b>
Yellowstone	<b>84.9**</b>	45.7	32.1	<b>76.0*</b>	25.2	51.6	111.0	<b>61.5*</b>
MT0495	<b>73.3*</b>	40.5	<b>49.6*</b>	<b>74.4*</b>	22.9	51.1	110.5	61.0
Tiber	<b>79.0*</b>	40.8	<b>51.6*</b>	69.8	28.0	<b>53.3*</b>	95.4	60.3
Norris	<b>77.3*</b>	40.9	42.1	<b>78.7*</b>	12.3	49.8	110.0	59.9
Hyalite	<b>73.3*</b>	32.4	<b>48.4*</b>	67.5	23.4	49.4	111.0	59.7
MTS04114	<b>81.4*</b>	44.3	<b>48.0*</b>	68.2	17.6	50.8	104.1	59.7
Jagalene	<b>73.4*</b>	37.0	<b>44.4*</b>	64.8	20.1	48.5	<b>114.3*</b>	59.5
NuSky	<b>82.5*</b>	39.4	<b>47.1*</b>	72.2	23.3	52.6	94.1	59.5
Deloris	<b>79.8*</b>	38.7	42.4	64.5	22.8	49.4	110.0	59.5
Morgan	<b>81.2*</b>	41.5	39.3	70.2	21.9	52.1	90.8	58.5
Ledger	69.8	<b>47.4*</b>	39.7	70.5	24.7	51.0	93.1	58.0
Genou	54.2	38.5	<b>45.5*</b>	69.1	20.3	47.1	107.0	57.1
Jerry	<b>75.8*</b>	41.9	39.4	63.4	14.9	47.9	103.5	57.1
Rocky	66.0	42.8	<b>51.2*</b>	<b>72.8*</b>	25.2	51.1	83.2	56.4
Rampart	64.5	34.1	<b>53.3*</b>	64.5	20.2	46.9	94.6	54.8
BigSky	<b>78.6*</b>	40.8	42.3	61.0	19.7	47.9	88.8	54.7
Vanguard	60.4	38.0	<b>55.0**</b>	61.7	25.4	47.4	89.0	54.4
Bynum	48.5	35.2	42.8	66.2	14.5	40.5	90.3	48.8
Moreland <sup>§</sup>	--	--	--	--	--	--	<b>121.6*</b>	--
Garland <sup>§</sup>	--	--	--	--	--	--	101.0	--
UT9743-42 <sup>§</sup>	--	--	--	--	--	--	103.0	--
Average	73.7	41.2	46.6	71.8	21.8	51.0	104.3	59.8
PLSD (p=0..05)	14.8	5.7	11.0	12.0	ns	8.0	18.7	8.4
CV%	12.2	7.6	13.0	9.4	33.9	21.6	11.0	21.3

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

§ Tested under irrigated conditions only in 2007.

ns Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

\*\* 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 10. Performance of 25 commercial and experimental winter wheat cultivars tested under dryland and irrigated conditions at 6 locations in south central Montana during 2007. Cultivars listed alphabetically.

Cultivar	1/ Grain Yield			Test Weight	Grain Moisture	2/ Grain Protein	Plant Height
	2007	2006-07	2005-07			%	
	-----bushels per acre -----			lb/bu	%	%	inches
<u>Commercial</u>							
BigSky	54.7	58.1	55.2	62.4	10.1	9.6	38.5
Bynum	48.8	56.2	52.3	61.5	10.3	10.3	36.1
CDC Falcon	<b>63.3*</b>	<b>65.7*</b>	58.6	61.8	10.7	9.1	32.4
Deloris	59.5			61.5	10.3	9.5	38.2
Genou	57.1	62.5	57.3	61.5	10.6	9.2	36.0
Hyalite	59.7	63.7	58.2	62.3	10.2	9.6	34.7
Jagalene	59.5	64.1	60.5	63.1	10.3	10.3	33.6
Jerry	57.1	60.0	56.9	60.5	10.5	9.6	36.7
Ledger	58.0	63.8		61.4	10.5	9.1	32.8
Morgan	58.5	61.4	56.4	61.4	10.2	9.1	35.9
Neeley	<b>62.0*</b>	<b>65.5*</b>	60.7	61.7	10.4	9.1	35.9
Norris	59.9	63.4	60.0	62.4	10.0	9.2	35.4
NuSky	59.5	61.6	54.7	61.5	10.0	9.5	36.6
Promontory	<b>64.8*</b>	<b>66.4*</b>	60.9	63.1	10.3	8.9	34.7
Pryor	<b>69.6**</b>	<b>71.3**</b>	<b>65.7**</b>	61.3	10.3	8.4	33.3
Rampart	54.8	58.1	53.5	61.2	10.3	9.8	37.2
Rocky	56.4	59.7	54.9	62.2	10.7	9.1	36.7
Tiber	60.3	62.4	57.3	61.3	10.4	9.6	39.0
Vanguard	54.4	58.1	54.9	61.3	10.5	10.0	38.2
Wahoo	<b>67.0*</b>	<b>70.7*</b>	<b>64.3*</b>	60.3	10.2	9.2	34.4
Yellowstone	<b>61.5*</b>	<b>67.9*</b>	<b>63.9*</b>	61.0	10.2	9.3	34.9
<u>Experimental</u>							
MT0495	61.0			60.3	10.0	9.5	33.1
MTCL0477	<b>64.2*</b>			61.2	10.2	8.8	34.9
MTS04114	59.7			61.9	10.1	9.8	34.0
MTS04120	<b>64.2*</b>			62.0	10.5	9.2	36.6
Average	59.8	63.0	58.2	61.6	10.3	9.4	35.6
PLSD (p=0.05)	8.4	6.0	4.7	0.8	0.4	0.7	2.1
CV%	21.3	19.6	20.6	1.9	6.2	10.5	8.7
Location Years	6	11	17	6	6	6	6

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).

Table 11. Performance of 25 commercial and experimental winter wheat cultivars tested under dryland conditions only at 5 locations in south central Montana during 2007. Cultivars listed alphabetically.

Cultivar	1/ Grain Yield			Test Weight	Grain Moisture	2/ Grain Protein	Plant Height
	2007	2006-07	2005-07			%	
	----- bushels/acre-----			lb/bu	%	%	inches
<u>Commercial</u>							
BigSky	47.9	50.1	47.4	62.2	10.2	9.1	36.6
Bynum	40.5	46.0	43.3	61.4	10.5	9.6	34.3
CDC Falcon	51.7	53.3	48.0	61.6	11.0	8.8	30.7
Deloris	49.4			61.4	10.4	9.1	36.8
Genou	47.1	52.7	49.0	61.5	10.8	8.6	34.4
Hyalite	49.4	52.5	48.6	62.2	10.3	9.1	32.8
Jagalene	48.5	52.3	49.8	63.1	10.4	10.0	32.0
Jerry	47.9	50.4	48.2	60.2	10.7	9.0	34.7
Ledger	51.0	54.6		61.4	10.7	8.6	31.3
Morgan	52.1	53.4	48.9	61.5	10.4	8.6	34.2
Neeley	<b>54.8*</b>	<b>57.8*</b>	<b>53.2*</b>	61.9	10.6	8.4	34.3
Norris	49.8	53.9	50.6	62.3	10.1	8.7	33.9
NuSky	52.6	53.1	48.1	61.5	10.1	9.2	35.0
Promontory	51.7	53.3	50.5	63.3	10.4	8.6	32.9
Pryor	<b>61.2**</b>	<b>60.2*</b>	<b>56.5**</b>	61.4	10.4	7.9	31.5
Rampart	46.9	50.0	46.1	61.0	10.5	9.1	35.9
Rocky	51.1	54.1	49.0	62.0	10.9	8.4	34.8
Tiber	<b>53.3*</b>	55.1	50.7	61.2	10.5	9.1	37.8
Vanguard	47.4	49.7	46.4	61.2	10.7	9.3	36.9
Wahoo	<b>59.9*</b>	<b>61.3**</b>	<b>56.5**</b>	60.1	10.4	8.8	32.9
Yellowstone	51.6	55.7	<b>52.8*</b>	60.9	10.3	8.8	33.0
<u>Experimental</u>							
MT0495	51.1			60.4	10.1	8.9	31.3
MTCL0477	<b>54.1*</b>			60.9	10.3	8.2	33.3
MTS04114	50.8			61.7	10.3	9.4	32.3
MTS04120	<b>53.4*</b>			61.8	10.7	8.7	35.0
Average	51.0	53.5	49.7	61.5	10.5	8.9	34.0
PLSD (p=0.05)	8.0	5.4	4.2	0.8	0.5	0.6	2.4
CV%	21.6	18.8	19.9	1.9	6.4	9.9	9.8
Location Years	5	9	14	5	5	5	5

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).