PROJECT TITLE: Dryland and Irrigated Winter Wheat Performance Trials near Broadview, Forsyth, Huntley and Lodgegrass, Montana. (Exps. 993380, 993881, 993882, 993883 and 993884).

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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 wheat varieties. This information should help wheat producers in south central Montana select varieties best suited to their particular area and growing conditions.

METHODS: Each 1999 off-station winter wheat trial had 24 entries and was planted using a randomized complete block design with three replications. Dryland and irrigated test plots consisted of a 15-foot, 4-row plot with 12-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 per bushel test 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. Heading date was noted at the Huntley dryland and Huntley irrigated sites 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.

RESULTS and SUMMARY: Agronomic performance of the winter wheat cultivars and experimental lines tested under dryland conditions near Broadview during 1999 is presented in Table 1. Broadview winter wheat yields averaged 53.1 bu/ac and ranged from 41.4 bu/ac for 'MTS9719' to 23.7 bu/ac for 'Norstar'. Eighteen of the 24 lines tested at Broadview produced grain yields between 40.2 and 34.1 bu/ac, which was equal to the yield of MTS9719. In 1998, MTS9719 also produced the highest yield at 43.0 bu/ac. 1999 test weights averaged 59.3 lb/bu. 'Pronghorn' had the highest test weight at 61.1 lb/bu. 'Erhart', 'Halt', 'NuWest', 'Promontory' and 'Rocky' were the only other lines that had test weights greater than 60 lb/bu. Grain protein averaged 14.7 percent and ranged from 15.8 percent for Erhardt to 13.4 percent for MTS9719.

Agronomic performance of the winter wheat cultivars and experimental lines tested under dryland conditions near Forsyth during 1999 is presented in Table 2. Above average precipitation resulted in much higher than normal yields for this area. The high yields coupled with only average fertility inputs resulted in lower than normal grain protein values. Forsyth winter wheat yields averaged 57.4 bu/ac and ranged from 66.8 bu/ac for Halt to 47.9 bu/ac for 'Elkhorn'. 'Judith', 'MT9409', 'MT9524', 'MTS9720', Promontory and 'Quantum 542'

produced grain yields between 60.4 and 63.8 bu/ac, which was equal to the yield of Halt. Test weights averaged 61.3 lb/bu. Erhardt had the highest test weight at 63.1 lb/bu and 'Redwin', 'Big Sky' and MT9524 had test weights between 62.8 and 62.4 lb/bu, which was equal to that of Erhardt. All entries at Forsyth had test weights greater than 60 lb/bu. Grain protein averaged 7.2 percent and ranged from 8.2 percent for Big Sky to 6.0 percent for NuWest.

Agronomic performance of the winter wheat cultivars and experimental lines tested under dryland conditions near Lodgegrass during 1999 is presented in Table 3. Higher than normal yields coupled with average fertility inputs resulted in lower than normal protein values. Lodgegrass winter wheat yields averaged 85.0 bu/ac and ranged from 99.8 bu/ac for 'Neeley' to 67.0 bu/ac for 'McGuire'. MT9524, MTS9720, Big Sky, Promontory, MTW9441 and Quantum 542 yielded between 89.9 and 98.9 bu/ac, which was equal to the yield of Neeley. Promontory had the highest test weight at 63.7 lb/bu, and Big Sky, 'Vanguard' and Rampart had test weights between 63.7 and 63.6 lb/bu, which was equal to that of Promontory. All entries at Lodgegrass had test weights greater than 60 lb/bu. Grain protein averaged 10.1 percent and ranged from 10.4 percent for Norstar to 9.7 percent for Rampart.

Agronomic performance of the winter wheat cultivars and experimental lines tested under dryland conditions near Huntley during 1999 is presented in Table 4. Huntley winter wheat yields averaged 67.5 bu/ac and ranged from 82.6 bu/ac for Halt to 55.9 bu/ac for Norstar. Pronghorn at 78.4 bu/ac and Promontory at 75.8 bu/ac were the only lines to produce yields equal to that of Halt. Test weights averaged 60.5 lb/bu. Redwin had the highest test weight at 62.5 lb/bu, and Erhardt, Promontory and 'Tiber' had test weights between 62.3 and 61.9 lb/bu, which was equal to that of Redwin. Eighteen of the 24 entries had test weights greater than 60 lb/bu. Grain protein averaged 16.1 percent and ranged from 17.1 percent for Rampart and MT9524 to 14.9 percent for McGuire.

Agronomic performance of the winter wheat cultivars and experimental lines tested under irrigation near Huntley during 1999 is presented in Table 5. Huntley irrigated winter wheat yields averaged 111.1 bu/ac and ranged from 139.2 bu/ac for Promontory to 71.1 bu/ac for Norstar. Big Sky, MTW9441, NuWest, Quantum 542 and Pronghorn yielded between 131.8 and 126.8 bu/ac, which was equal to the yield of Promontory. Pronghorn had the highest test weight at 63.7 lb/bu, however Redwin Quantum 542, Promontory, Rocky, MT9524 and Big Sky had test weights between 63.3 and 62.8 lb/bu, which was equal to that of Pronghorn. Twenty-one of the 24 entries had test weights greater than 60 lb/bu. Grain protein averaged 13.6 percent and ranged from 15.2 percent for Rampart to 11.4 percent for Promontory.

Multi-location yield and comparisons are presented in Table 6. Multi-location average agronomic performance is presented in Table 7. Across the five locations, winter wheat yields averaged 71.2 bu/ac. Promontory at 81.8 bu/ac and Quantum 542 at 80.2 bu/ac were the highest yielding cultivars overall. Promontory had excellent yield performance at all locations and Quantum 542 was among the top performers at all locations except near Huntley under dryland conditions. Across locations, average test weight was 61.0 lb/bu with only five entries averaging slightly less than the 60 lb/bu standard test weight. Average grain protein across locations was slightly below normal at 12.3 percent mostly due to low protein values produced at the Lodgegrass and Forsyth locations.

FUTURE PLANS:

Five off-station winter wheat variety evaluations will continue in 2000 at Broadview, Forsyth, Huntley, Indian Creek and Lodgegrass.

Table 1. Performance of 24 hard red and hard white winter wheat cultivars and experimental lines tested under dryland conditions near Broadview, Montana during 1999. Cultivars listed alphabetically. (Exp. 993881).

Cultivar	Grain Yield 1/ 1999	Grain Yield 1/ 1998-99	Test Weight	Grain Moisture	Plant Height	Grain Protein 2/
	bu/ac	bu/ac	lb/bu	%	inches	%
Big Sky (MT9432)	**36.4***	**42.3***	59.0	9.2	31	15.5
Bighorn	**34.8***	**39.3***	59.5	9.2	25	14.8
Elkhorn	29.6	32.7	57.4	9.8	33	14.6
Erhardt	**34.9***	37.3	60.2	9.3	27	15.8
Halt	**36.5***	**42.0***	60.4	9.2	25	14.0
Judith	**38.3***	**40.8***	58.9	9.8	29	15.2
McGuire	30.7	34.4	59.7	9.4	29	15.6
Morgan	**34.4***		59.4	9.5	29	14.2
MT9409	**40.2***	**41.0***	59.0	9.6	28	13.9
MT9524	**37.3***	**41.7***	59.5	9.6	32	15.2
MTS9719	**41.4****	**43.0****	58.7	9.2	31	13.4
MTS9720	**39.7***		58.4	9.4	29	13.8
MTW9441 (hard white)	**34.6***	36.3	59.3	9.9	30	14.7
Neeley	**34.9***	**38.1***	58.9	9.3	28	14.9
Norstar	23.7	26.3	54.9	9.6	31	14.8
NuWest (hard white)	**36.5***	37.8	60.2	9.6	29	14.1
Promontory	**40.1***	**40.5***	60.8	9.6	31	13.3
Pronghorn	28.6	34.7	61.1	9.8	31	15.3
Quantum 542	**34.1***	**41.5***	59.9	9.8	30	14.3
Rampart	**37.8***	**41.1***	58.9	9.1	29	14.7
Redwin	31.6		59.7	9.3	28	15.3
Rocky	**34.7***	**40.1***	60.9	9.8	32	14.1
Tiber	**34.2***	**39.1***	58.5	9.1	32	15.2
Vanguard	**36.3***	37.1	59.1	9.2	29	15.2
Average	35.1	38.4	59.3	9.4	30	14.7
LSD (p=0.05)	7.8	4.9	2.1	0.2	1.7	-
CV%	13.6	11.1	2.2	1.6	3.6	-

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).

Broadview Dryland Winter Wheat (Exp. 993881)

Planted:	September 25, 1998
Harvested:	August 10, 1999
Fertility:	83-0-0, 72 lb/ac, preplant incorporated by cooperator, date unknown 11-52-00, 100 lb/ac, in-furrow, September 25, 1998
Herbicide:	none
Insecticide:	none
Previous Crop:	summer fallow
Precipitation:	not available

Table 2. Performance of 24 hard red and hard white winter wheat cultivars and experimental lines tested under dryland conditions near Forsyth, Montana during 1999. Cultivars listed alphabetically. (Exp. 993882).

Cultivar	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Grain Protein
	bu/ac	lb/bu	%	inches	%
Big Sky (MT9432)	57.0	62.5	10.3	33	8.4
Bighorn	55.3	60.7	10.3	30	7.1
Elkhorn	47.9	60.6	9.9	34	7.8
Erhardt	56.6	63.1	10.1	31	8.2
Halt	66.8**	61.5	10.0	29	7.3
Judith	62.3*	60.4	10.3	34	8.2
McGuire	52.9	62.2	10.6	33	7.9
Morgan	55.7	61.8	9.9	31	7.5
MT9409	62.6*	60.4	10.3	31	6.9
MT9524	61.3*	62.8	10.3	33	7.5
MTS9719	56.3	60.9	10.0	33	7.4
MTS9720	60.4*	60.8	10.1	31	7.1
MTW9441 (hard white)	56.4	61.8	10.4	31	7.5
Neeley	57.4	60.7	10.1	32	7.0
Norstar	49.8	61.1	10.3	38	8.5
NuWest (hard white)	59.7	60.8	10.4	31	6.9
Promontory	61.8*	61.6	9.8	32	8.1
Pronghorn	59.8	60.6	10.4	35	7.4
Quantum 542	63.8*	61.0	10.7	35	6.7
Rampart	51.9	60.7	10.2	32	7.7
Redwin	56.6	62.4	10.0	35	7.7
Rocky	57.4	61.3	10.4	34	7.8
Tiber	60.3	61.2	10.0	33	7.1
Vanguard	51.1	60.9	10.4	32	8.1
Average	57.4	61.3	10.2	33	7.6
LSD (p=0.05)	6.4	0.7	0.4	1.8	-
CV%	6.8	0.7	2.6	3.3	-

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

Forsyth Dryland Winter Wheat (Exp. 993882)

Planted:	September 23, 1998
Harvested:	July 21, 1999
Fertility:	16-20-00, 100 lb/ac, preplant incorporated by cooperator, date unknown 16-20-00, 100 lb/ac, in-furrow, September 23, 1999
Herbicide:	none
Insecticide:	none
Previous Crop:	summer fallow
Precipitation:	not available

Table 3. Performance of 24 hard red and hard white winter wheat cultivars and experimental lines tested under dryland conditions near Lodgegrass, Montana during 1999. Cultivars listed alphabetically. (Exp. 993883).

Cultivar	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Grain Protein
	bu/ac	lb/bu	%	inches	%
Big Sky (MT9432)	90.6*	63.6	9.3	45	10.1
Bighorn	84.9	63.1	8.6	34	9.9
Elkhorn	77.9	62.8	9.2	46	10.1
Erhardt	78.8	63.4	9.1	36	10.2
Halt	75.6	62.1	8.1	31	9.8
Judith	84.1	61.4	8.9	37	10.3
McGuire	67.0	62.6	8.8	37	10.0
Morgan	86.2	62.6	9.2	40	10.0
MT9409	88.1	60.9	9.0	37	9.9
MT9524	89.9*	63.3	10.0	45	10.2
MTS9719	78.4	61.5	9.9	38	10.2
MTS9720	90.2*	61.2	8.8	40	10.0
MTW9441 (hard white)	97.8*	60.9	13.8	42	10.3
Neeley	99.8**	63.2	9.9	41	10.3
Norstar	78.5	61.9	12.1	49	10.4
NuWest (hard white)	89.5	61.9	11.1	39	10.2
Promontory	92.2*	64.7	9.1	38	10.2
Pronghorn	84.4	63.4	8.3	42	10.1
Quantum 542	98.9*	63.2	9.6	42	10.3
Rampart	83.3	63.7	8.5	39	9.7
Redwin	71.0	61.5	12.1	29	10.3
Rocky	88.2	63.2	9.1	42	10.1
Tiber	83.0	63.0	10.4	45	10.2
Vanguard	82.3	63.6	8.6	41	9.9
Average	85.0	62.6	9.6	40	10.1
LSD (p=0.05)	10.1	1.3	1.8	8.8	-
CV%	7.3	1.2	11.4	13.5	-

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

Lodgegrass Dryland Winter Wheat (Exp. 993883)

Planted:	October 12, 1998
Harvested:	July 28, 1999
Fertility:	11-52-00, 120 lb/ac, in-furrow, October 12, 1998
Herbicide:	none
Insecticide:	none
Previous Crop:	summer fallow
Precipitation:	not available

Table 4. Performance of 24 hard red and hard white winter wheat cultivars and experimental lines tested under dryland conditions near Huntley, Montana during 1999. Cultivars listed alphabetically. (Exp. 993884).

Cultivar	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Grain Protein	Heading Date Julian	Heading Date Calendar
	bu/ac	lb/bu	%	inches	%		
Big Sky (MT9432)	67.5	61.2	8.9	39	15.7	156	Jun 5
Bighorn	67.1	61.0	8.3	32	16.2	157	Jun 6
Elkhorn	58.9	61.4	8.6	42	16.8	158	Jun 7
Erhardt	64.8	61.9	8.7	35	15.0	157	Jun 6
Halt	82.6**	60.1	8.6	30	15.3	152	Jun 1
Judith	69.9	58.0	8.9	38	16.3	156	Jun 5
McGuire	70.9	60.8	8.7	37	14.9	152	Jun 1
Morgan	64.6	61.0	8.7	35	17.0	159	Jun 8
MT9409	68.7	58.3	8.5	33	16.8	157	Jun 6
MT9524	68.9	60.7	8.8	39	17.1	157	Jun 6
MTS9719	63.6	58.8	8.5	38	16.1	158	Jun 7
MTS9720	62.3	56.2	8.1	35	16.4	158	Jun 7
MTW9441 (hard white)	63.4	60.5	9.1	37	16.6	158	Jun 7
Neeley	64.8	59.8	8.8	37	15.7	158	Jun 7
Norstar	55.9	61.3	9.3	48	15.8	161	Jun 10
NuWest (hard white)	71.4	61.3	9.2	36	15.8	156	Jun 5
Promontory	75.8*	61.8	8.8	34	16.5	156	Jun 5
Pronghorn	78.4*	61.0	9.2	40	15.2	152	Jun 1
Quantum 542	74.3	59.3	8.8	38	16.8	154	Jun 3
Rampart	63.4	61.1	8.8	37	17.1	156	Jun 5
Redwin	64.2	62.5	9.2	38	15.3	156	Jun 5
Rocky	73.3	61.1	8.6	37	15.9	154	Jun 3
Tiber	65.6	62.3	9.0	37	16.9	157	Jun 6
Vanguard	59.7	61.3	8.4	36	15.8	156	Jun 5
Average	67.5	60.5	8.8	37	16.1	156	Jun 5
LSD (p=0.05)	7.0	1.1	0.4	2.3	-	<1	
CV%	6.3	1.1	2.8	3.8	-	0.4	

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

Huntley Dryland Winter Wheat (Exp. 993884)

Planted:	September 18, 1998
Harvested:	July 22, 1999
Fertility:	18-46-00, 100 lb/ac, preplant incorporated, September 15, 1998 34-00-00, 88 lb/ac, broadcast, April 26,1999
Herbicide:	none
Insecticide:	none
Previous Crop:	summer fallow
Precipitation:	10.32 inches

Table 5. Performance of 24 hard red and hard white winter wheat cultivars and experimental lines tested under irrigated conditions near Huntley, Montana during 1999. Cultivars listed alphabetically. (Exp. 993880).

Cultivar	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Grain Protein	Heading Date Julian	Heading Date Calendar
	bu/ac	lb/bu	%	inches	%		
Big Sky (MT9432)	**126.8***	63.4	9.7	47	13.3	162	Jun 11
Bighorn	101.1	60.9	9.5	39	12.7	161	Jun 10
Elkhorn	93.4	61.3	9.5	53	14.7	162	Jun 11
Erhardt	104.3	61.7	9.7	43	14.3	162	Jun 11
Halt	119.2	61.8	9.1	37	13.5	154	Jun 3
Judith	118.5	60.0	9.8	44	13.1	162	Jun 11
McGuire	105.1	62.5	9.8	43	15.0	157	Jun 6
Morgan	108.2	60.5	9.6	45	13.1	164	Jun 13
MT9409	100.5	58.2	9.3	42	13.3	162	Jun 11
MT9524	120.9	63.3	9.8	50	13.5	160	Jun 9
MTS9719	89.3	58.4	9.2	46	12.9	165	Jun 14
MTS9720	92.0	56.7	8.8	43	13.8	165	Jun 14
MTW9441 (hard white)	**127.6***	61.2	9.7	47	13.1	165	Jun 14
Neeley	109.4	60.8	9.6	45	13.8	165	Jun 14
Norstar	71.1	60.1	9.9	59	13.9	167	Jun 16
NuWest (hard white)	**128.8***	61.2	9.9	46	13.2	162	Jun 11
Promontory	**139.2****	63.1	9.6	42	11.4	158	Jun 7
Pronghorn	**131.8***	63.7	10.2	47	12.9	152	Jun 1
Quantum 542	**129.9***	62.8	10.1	46	13.3	158	Jun 7
Rampart	106.9	61.7	9.3	46	15.2	163	Jun 12
Redwin	104.8	62.6	10.3	50	14.3	164	Jun 13
Rocky	122.7	63.3	9.9	48	13.4	157	Jun 6
Tiber	109.6	62.4	9.8	51	14.0	165	Jun 14
Vanguard	105.3	61.7	9.6	46	14.3	163	Jun 12
Average	111.1	61.8	9.7	46	13.6	162	Jun 11
LSD (p=0.05)	13.9	1.2	0.3	2.9	-	<1	
CV%	7.6	5.7	2.2	3.8	-	0.1	

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

Huntley Irrigated Winter Wheat (Exp. 993880)

Planted:	September 30, 1998
Harvested:	August 9, 1999
Fertility:	11-52-00, 120 lb/ac, preplant incorporated, September 30, 1998
	34-00-00, 88 lb/ac, broadcast, April 26,1999
Herbicide:	none
Insecticide:	none
Previous Crop:	spring wheat
Irrigation:	profile flooded, May 26, 1999
	profile flooded, June 18, 1999
Precipitation:	10.22 inches

Table 6. Grain yield[1/] of 24 hard red and hard white winter wheat cultivars and experimental lines tested at five locations in south central Montana during 1999. Cultivars listed by declining average yield. (Exps. 993880, 993881, 993882, 993883, 993884).

Cultivar	Location					Five Location Average
	Broadview Dryland	Forsyth Dryland	Huntley Dryland	Lodgegrass Dryland	Huntley Irrigated	
	bu/ac					
Promontory	40.1*	61.8*	75.8*	92.2*	139.2**	81.8**
Quantum 542	34.1*	63.8*	74.3	98.9*	129.9*	80.2*
NuWest (hard white)	36.5*	59.7	71.4	89.5	128.8*	77.2
Pronghorn	28.6	59.8	78.4*	84.4	131.8*	76.6
Halt	36.5*	66.8**	82.6**	75.6	119.2	76.2
MTW9441 (hard white)	34.6*	56.4	63.4	97.8*	127.6*	76.0
Big Sky (MT9432)	36.4*	57.0	67.5	90.6*	126.8*	75.7
MT9524	37.3*	61.3*	68.9	89.9*	120.9	75.7
Rocky	34.7*	57.4	73.3	88.2	122.7	75.3
Judith	38.3*	62.3*	69.9	84.1	118.5	74.6
Neeley	34.9*	57.4	64.8	99.8**	109.4	73.3
MT9409	40.2*	62.6*	68.7	88.1	100.5	72.0
Tiber	34.2*	60.3	65.6	83.0	109.6	70.6
Morgan	34.4*	55.7	64.6	86.2	108.2	69.8
MTS9720	39.7*	60.4*	62.3	90.2*	92.0	68.9
Rampart	37.8*	51.9	63.4	83.3	106.9	68.7
Bighorn	34.8*	55.3	67.1	84.9	101.1	68.6
Erhardt	34.9*	56.6	64.8	78.8	104.3	67.9
Vanguard	36.3*	51.1	59.7	82.3	105.3	66.9
MTS9719	41.4**	56.3	63.6	78.4	89.3	65.8
Redwin	31.6	56.6	64.2	71.0	104.8	65.7
McGuire	30.7	52.9	70.9	67.0	105.1	65.3
Elkhorn	29.6	47.9	58.9	77.9	93.4	61.5
Norstar	23.7	49.8	55.9	78.5	71.1	55.8
Average	35.1	57.4	67.5	85.0	111.1	71.2
LSD (p=0.05)	7.8	6.4	7.0	10.1	13.9	4.1
CV%	13.6	6.8	6.3	7.3	7.6	8.1

1/ Yields are based on 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).

Table 7. Performance of 24 hard red and hard white winter wheat cultivars and experimental lines tested across five locations in south central Montana during 1999. Cultivars listed alphabetically. (Exps. 993880, 993881, 993882, 993883, 993884).

Cultivar	1/ Grain Yield	Test Weight	Grain Moisture	Plant Height	2/ Grain Protein	Heading Date Julian	Heading Date Calendar
	bu/ac	lb/bu	%	inches	%		
Big Sky (MT9432)	75.7	61.9	9.5	39	12.6	159	Jun 8
Bighorn	68.6	61.1	9.2	32	12.1	159	Jun 8
Elkhorn	61.5	60.7	9.2	41	12.8	160	Jun 9
Erhardt	67.9	62.1	9.4	34	12.7	159	Jun 8
Halt	76.2	61.2	9.0	31	12.0	153	Jun 2
Judith	74.6	59.7	9.6	36	12.6	159	Jun 8
McGuire	65.3	61.6	9.4	36	12.7	155	Jun 4
Morgan	69.8	61.1	9.4	36	12.4	162	Jun 11
MT9409	72.0	59.3	9.4	34	12.2	159	Jun 8
MT9524	75.7	61.9	9.7	40	12.7	158	Jun 7
MTS9719	65.8	59.6	9.4	37	12.0	161	Jun 10
MTS9720	68.9	58.7	9.0	36	12.2	162	Jun 11
MTW9441 (hard white)	76.0	60.8	10.6	37	12.4	162	Jun 11
Neeley	73.3	60.7	9.5	37	12.3	162	Jun 11
Norstar	55.8	59.9	10.2	45	12.7	164	Jun 13
Nuwest (hard white)	77.2	61.1	10.0	36	12.0	159	Jun 8
Promontory	81.8**	62.4	9.4	35	11.9	157	Jun 6
Pronghorn	76.6	61.9	9.6	39	12.2	152	Jun 1
Quantum 542	80.2*	61.2	9.8	38	12.3	156	Jun 5
Rampart	68.7	61.2	9.2	37	12.9	160	Jun 9
Redwin	65.7	61.7	10.2	36	12.6	160	Jun 9
Rocky	75.3	62.0	9.6	39	12.3	156	Jun 5
Tiber	70.6	61.5	9.7	40	12.7	161	Jun 10
Vanguard	66.9	61.3	9.2	37	12.7	160	Jun 9
Average	71.2	61.0	9.5	37	12.4	159	Jun 8
LSD (p=0.05)	4.1	0.6	0.4	1.9	-	<1	
CV%	8.1	1.4	5.6	7.3	-	0.3	
Location Years	5	5	5	5	5	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.
* Indicates cultivars yielding equal to highest yielding cultivar based on Fisher's protected LSD (p=0.05).