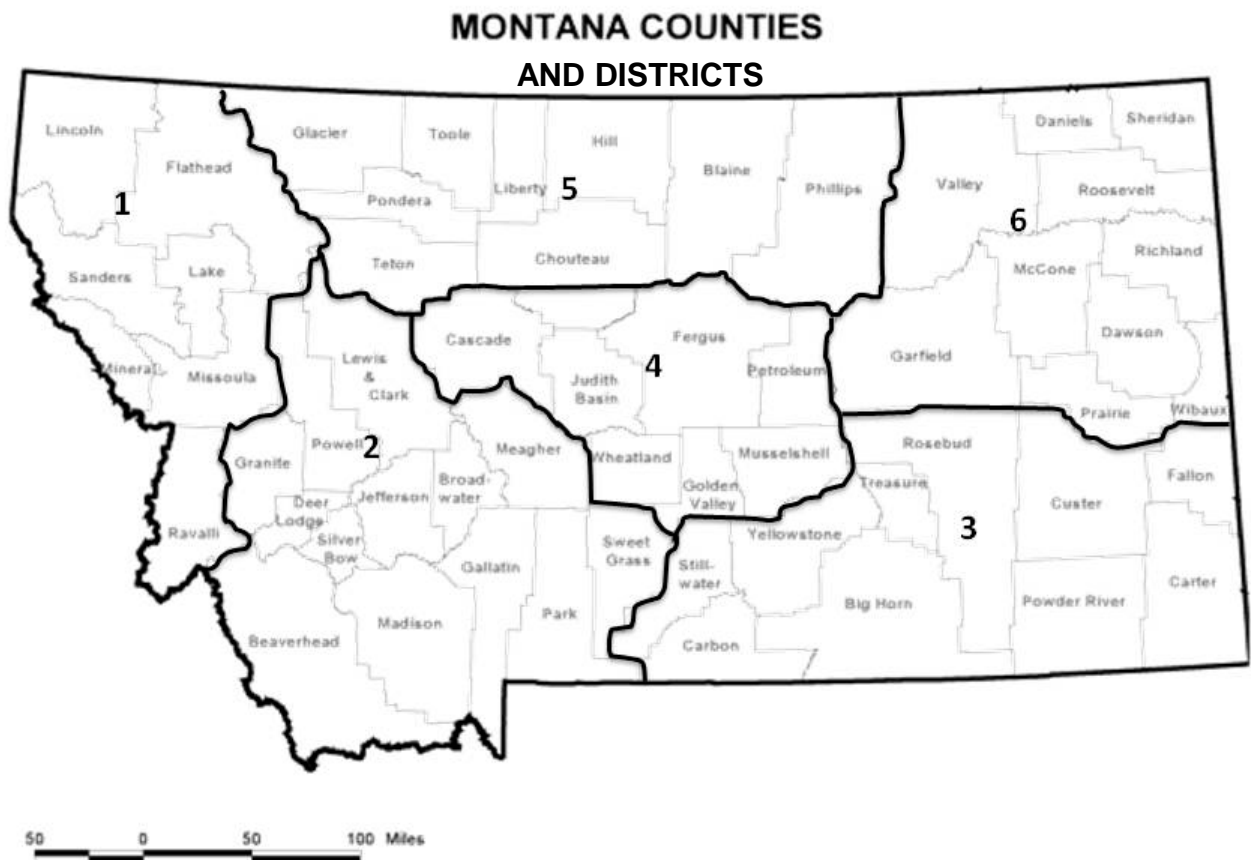


# 2011 SPRING WHEAT VARIETIES

## Performance Evaluation and Recommendations

Recommendations are made for the districts shown on the map below



by the Montana State University  
Agricultural Experiment Station

The information in this publication can also be found at a link on:

<http://plantsciences.montana.edu/crops>

Another variety selection tool is available at :

<http://www.sarc.montana.edu/php/varieties.html>

Revised February 2011

**RECOMMENDED  
HARD RED AND DURUM SPRING WHEAT VARIETIES  
FOR MONTANA BY DISTRICT**

Variety	District					
	1	2	3	4	5	6
<b><u>HARD RED SPRING WHEAT:</u></b>						
AP604 CL (P) +	D	D	D	D	D	D
Choteau +		DI	DI	DI	DI	DI
Conan */ (P)+		D	D	D	D	D
Corbin */ (P)+				D	D	
Freyr (P) +	DI	DI	DI	DI	DI	DI
Hank (P) +	DI	DI	DI	DI	DI	DI
Jedd (P) +	DI	DI	DI	DI	DI	DI
Kelby (P) +	D	I		D	D	
Kuntz (P) +		I	I			
McNeal	DI	DI	DI	DI	DI	DI
ONeal (P) +			D	D	D	
Outlook +	DI	DI	DI	DI	DI	DI
WestBred 926 (P)		DI	DI	DI		I
Vida +	D	D	D	D	D	D
Volt (P) +	I	I	I	I	I	I
WB Gunnison			D	D	D	D
<b><u>DURUM WHEAT:</u></b>						
AC Avonlea +		D		D	DI	DI
Alazada (P) +		DI		DI	DI	
Mountrail +		D		D	DI	DI

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I = Irrigated  
 D = Dryland  
 H = High rainfall  
 \*/ = Sawfly areas only  
 (P) = A Private Variety  
 + = A "Protected" variety under the Plant Variety Protection Act

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# SPRING WHEAT VARIETY PERFORMANCE SUMMARY IN MONTANA

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## INTRODUCTION

The agronomic characteristics of spring wheat varieties evaluated by the Montana Agricultural Experiment Station are compared in this publication with other varieties commonly grown in the state. The objective of this summary is to help farmers select the varieties which will perform best in their area. In this bulletin we use a comparable average to evaluate variety performance. Varieties recommended for production in the respective districts of Montana are designated by an asterisk. A brief description of each variety is given which may include a variety's particular advantages or disadvantages. The information was extracted from data collected and analyzed from the Advanced Spring Wheat and Statewide Durum Wheat nurseries. These reports are prepared by research personnel of the Montana Agricultural Experiment Station. Where available, up to ten years (2001-2010) of yield data are shown for the varieties. In some years data are not available because of hail, frost, or other unavoidable causes.

The comparable average for spring wheat is calculated by using a "10 year check mean" from a group of long term varieties including; Fortuna, McNeal, Reeder and Choteau. Variety means are adjusted by multiplying the actual 10 year check mean by the ratio of the individual variety mean compared to the check mean for the same years tested as illustrated below. All varieties are then directly comparable to each other when in the same nursery.

Illustration of Formula: (Vida - 8 years at Havre-dryland, page 10)

Check Varieties 10 Year Average = 37.7

Check Varieties Average Yield for last 8 years = 40.1

Variety (Vida) in question: Average Yield for last 8 years = 45.9

$$\frac{\text{Vida 8 year average yield}}{\text{Check varieties 8 year average yield}} \quad \text{or} \quad \frac{45.9}{40.1} = 1.14 (114\%)$$

To convert Vida yield to the 10 year comparable average:

$$1.14 (\text{Vida}) \times 37.7 (\text{Check varieties 10 yr. avg.}) = 43.1 \text{ bu/A for Vida}$$

The comparable averages for the durum wheats were calculated by using Mountrail as a single check variety.

The more years of production data available for any particular variety, the more reliable is the "comparable average figure." Averages using less than three years data may be unreliable in predicting future performance, and have been omitted from the tables.

## **SPRING WHEAT PRODUCTION AND CULTURAL PRACTICES**

Montana's spring wheat acreage during the past five years has ranged from 44 to 55 percent of the total wheat acreage planted. In 2010, spring wheat accounted for ~ 52% and durum 10% of the total wheat acreages.<sup>1</sup> Nationally, in 2010, Montana ranked third among the spring wheat and durum producing states.

The wheat stem sawfly, wheat rust diseases and leaf diseases including Septoria, remain threats to wheat growers in areas across Montana, and require the planting of resistant varieties.

Montana is recognized for production of high quality bread wheat. This reputation is essential in maintaining domestic and foreign markets. The export trade in recent years has accounted for about three-fourths of our wheat market.

Hard red spring wheat is grown in all areas of the state, with over 97% of the acreage on dryland.

The largest concentration of acreage is east of the Continental Divide along the northern tier of counties. The highest producing counties in 2009 were Roosevelt, Valley, and Daniels.

Over 98% of durum wheat is grown on dryland, and in 2009 the highest producing counties were Sheridan, Roosevelt and Daniels in northeastern Montana.

The following seeding rates and dates are general. The heavier seeding rate, where indicated, is applicable to plump seed of high test weight or seed having a kernel size larger than normal for most other varieties. The lighter rates are for seed whose test weight is below normal for wheat.

Crop	Seeds/lb	Dryland (lbs)	Irrigated (lbs)	Seeding Date
Spring Wheat	5,000	45 – 60 21 seeds/sq ft)	75 - 90 30 seeds/sq ft)	After April 1 or as soon as seedbed can be prepared.
Durum Wheat	1,000	60 - 65 16 seeds/sq ft)	75 - 90 23 seeds/sq ft)	After April 1 or as soon as seedbed can be prepared.

*The map on the cover shows the districts in the state for purposes of reference for specific areas of adaptation.*

<sup>1</sup> Montana Agricultural Statistics, 2010 . Montana Agricultural Statistics Service, Helena, MT (November 2010).

## **VARIETY TESTING PROCEDURES**

### **Locations**

In 2010, the Advanced Spring Wheat nursery was planted at 9 Montana sites; including Bozeman (dryland and irrigated – HAILED OUT), Kalispell (high rainfall), Havre (dryland), Sidney (dryland and irrigated), Huntley (dryland), Moccasin (dryland) and Conrad (dryland). The Montana statewide durum nursery was planted at Bozeman (dryland), Havre (dryland), Sidney (dryland and irrigated), Huntley (dryland), Moccasin (dryland) and Conrad (dryland). See page 25 for Research Center locations, soil types and miscellaneous nursery management information.

### **Experimental Design and Data Collection**

Varieties currently recommended, widely grown, recently released or owned (and entered on a fee basis) by private companies are evaluated for agronomic performance in the Advanced Spring Wheat and Statewide Durum nurseries. Also evaluated in these nurseries are experimental breeding lines tested against the check varieties. Nurseries are randomized separately at each location for statistical analysis.

Agronomic data collected throughout the growing season includes heading date, plant height, lodging, disease and insect reactions. Experimental plots are trimmed, measured and harvested with small plot combines. The grain is weighed for yield and test weight. One trait important to wheat growers is resistance to the wheat stem sawfly. The major mode of resistance is a solid versus hollow stemmed variety. To evaluate this trait we cut several stems of each variety and score them on a scale of 1=hollow, 2=2/5 solid, 3=3/5 solid, 4=4/5 solid and 5=solid. The cuts are made in the center of each internode, so there are 5 scores per stem. The five scores are added up to get a total number ranging from 5=very hollow up to 25=very solid. The most reliable solid stemmed varieties should have a total score of at least 18. Entries are submitted to the Cereal Quality Lab at MSU, Bozeman for protein, milling, baking and Asian noodle quality evaluation as needed. Data is analyzed and summarized for each location and overall comparisons are made to determine which varieties and/or experimental lines look promising for Montana producers. When sufficient data is collected and analyzed, promising varieties and/or lines are submitted to the MAES wheat variety release and recommendation committee.

## **WHEAT RECOMMENDATION PROCEDURE FOLLOWED BY THE MAES**

Recommendation of spring wheat varieties is determined on a yearly basis by the Montana Agricultural Experiment Station (MAES) Wheat Variety Release Committee. This 16 member committee is composed of one breeder, one cereal or forage quality scientist, one plant pathologist, one entomologist, one weed scientist, one cropping systems specialist, six Research Center agronomists, one manager from both the Montana Foundation Seed program and the Montana Seed Growers Association, one Montana Wheat and Barley Committee member and one representative from the Montana Agricultural Experiment Advisory Board.

A variety is eligible for recommendation when a minimum of 16 location-years of performance data is obtained from the MAES statewide spring wheat performance trials. Test results must indicate that the variety is equal to or superior in overall merit to specified check cultivars and has end-use quality equal to or exceeding currently recommended varieties. For varieties originating from private companies, recommendation is considered at the request of the company when adequate data is available.

Recommendations of varieties are considered on a case by case basis. Yield performance of a variety is an important criteria, but also considered are test weight, grain protein content, disease and pest resistance and end-use quality data. In general, yield needs to be at least equal to currently recommended varieties in a particular district, unless the variety is being recommended for a specific purpose; such as, sawfly resistance.

If a serious defect in the variety is identified during performance testing, the variety will not be recommended. Examples of defects resulting in non-recommendation include: high probability of low test weight, low grain protein, low baking quality, etc. Lack of variety recommendation by MAES may occur due to a decision by the originating company not to test the variety in statewide performance trials. In this case the lack of recommendation is due to inadequate or no data rather than a specific varietal defect.

**HARD RED SPRING WHEAT  
DISTRICT 1  
KALISPELL - High Rainfall**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											TEN YEAR COMPARABLE AVERAGE <sup>1</sup>	
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YRS	
FORTUNA	106.8	85.7	74.4	100.7	74.8	41.4	51.6	24.4	78.3	86.3	10	72.4
MCNEAL*	121.5	102.0	78.5	86.8	43.6	51.3	52.9	35.2	77.8	84.2	10	73.4
OUTLOOK* +	142.5	114.1	70.5	94.7	61.0	63.0	55.8	23.0	71.2	89.0	10	78.5
REEDER +	138.0	109.5	87.4	92.4	92.4	75.1	62.8	64.0	99.9	103.2	10	92.5
CONAN (P)+	104.3	91.6	79.7	99.0	81.4	56.5	46.1	23.1	63.3	77.2	10	72.2
HANK* (P)+	135.5	91.9	72.6	103.2	71.5	74.0	55.9	46.1	89.6	88.9	10	82.9
CHOTEAU +	113.8	98.7	77.9	88.6	71.4	74.2	47.2	23.7	92.1	95.0	10	78.3
CHECK AVE	123.2	99.1	77.3	95.1	70.9	62.2	53.2	34.2	81.8	89.1	10	78.6
VIDA* +	0.0	0.0	91.6	101.7	72.4	54.5	64.3	24.8	91.9	99.2	8	83.7
FREYR* (P) +	0.0	0.0	0.0	101.9	84.3	68.5	54.1	35.2	81.6	96.2	7	84.3
KELBY* (P) +	0.0	0.0	0.0	89.1	0.0	77.9	46.8	46.9	80.0	98.4	6	83.1
KUNTZ (P) +	0.0	0.0	0.0	0.0	0.0	67.5	50.5	29.4	81.1	94.3	5	79.2
CORBIN (P) +	116.9	94.2	76.2	89.6	0.0	44.8	53.0	41.2	87.0	95.0	9	76.7
VOLT* (P) +	0.0	0.0	0.0	0.0	95.2	85.2	59.1	48.4	75.4	113.6	6	95.8
ONEAL (P) +	0.0	0.0	0.0	104.6	64.7	58.8	55.1	43.9	94.3	70.6	7	79.5
JEDD* (P) +	0.0	0.0	0.0	0.0	61.2	64.5	54.8	52.7	95.3	71.1	6	80.3
AP604 CL* (P) +	0.0	0.0	0.0	0.0	0.0	0.0	53.9	57.6	97.2	97.8	4	93.3
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	105.2	112.6	2	
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	0.0	0.0	51.2	0.0	72.5	83.8	3	72.8

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (178 = JUNE 27)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	60.4	10	178	10	41.1	9	15.2
MCNEAL*	10	58.1	10	179	10	34.2	9	15.5
OUTLOOK* +	10	57.4	10	181	10	34.3	9	15.3
REEDER +	10	60.4	10	177	10	35.7	9	15.3
CONAN (P)+	10	60.1	10	177	10	32.4	9	15.3
HANK* (P)+	10	57.5	10	176	10	31.7	9	14.9
CHOTEAU +	10	59.7	10	177	10	32.4	9	15.5
CHECK AVE	10	59.1	10	178	10	34.5	9	15.3
VIDA* +	8	59.6	8	178	8	34.3	8	15.2
FREYR* (P) +	7	60.8	7	177	7	34.7	7	15.1
KELBY* (P) +	6	60.9	6	176	6	31.0	6	15.5
KUNTZ (P) +	5	60.6	5	179	5	30.3	5	14.7
CORBIN (P) +	9	60.6	9	176	9	33.6	8	15.3
VOLT* (P) +	6	61.7	6	181	6	32.8	6	13.8
ONEAL (P) +	7	59.7	7	178	7	33.6	7	15.2
JEDD* (P) +	6	60.9	6	176	6	28.0	6	14.5
AP604 CL* (P) +	4	61.6	4	176	4	34.6	4	15.1
SY TYRA (P) +	2	60.3	2	178	2	28.8	2	14.0
WB GUNNISON (P) +	3	60.1	3	177	3	32.6	3	14.8

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

**HARD RED SPRING WHEAT  
DISTRICT 2  
BOZEMAN DRYLAND**

2001-2010 <sup>2</sup> GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES										EIGHT YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2009	YRS	
FORTUNA	69.0	50.5	41.7	81.4	56.5	53.3	40.5	63.6	8	57.1
MCNEAL*	78.2	69.6	39.8	85.3	56.4	47.3	42.7	64.6	8	60.5
OUTLOOK * +	80.2	72.8	42.7	87.4	65.0	54.9	43.0	72.9	8	64.9
REEDER +	80.1	63.3	44.5	85.4	60.7	65.4	46.4	72.1	8	64.7
CONAN */ (P)+	73.6	68.9	37.8	81.7	57.2	55.2	41.0	58.7	8	59.3
HANK * (P)+	77.9	78.6	41.9	89.0	67.5	56.8	44.7	69.7	8	65.8
CHOTEAU * +	78.2	73.6	37.7	90.0	56.6	59.3	39.8	73.9	8	63.6
CHECK AVE	76.7	68.2	40.9	85.7	60.0	56.0	42.6	67.9	8	62.3
VIDA * +	0.0	0.0	48.3	97.5	68.8	64.8	47.7	78.7	6	71.5
FREYR * (P) +	0.0	0.0	0.0	83.0	58.6	61.5	36.8	60.1	5	59.8
KELBY * (P) +	0.0	0.0	0.0	79.1	0.0	47.7	50.1	49.3	4	55.8
KUNTZ (P) +	0.0	0.0	0.0	0.0	0.0	54.6	42.7	61.0	3	59.2
CORBIN (P) +	73.2	71.7	40.2	92.0	0.0	60.8	40.8	67.1	7	63.4
VOLT (P) +	0.0	0.0	0.0	0.0	65.5	61.4	41.7	79.0	4	68.0
ONEAL (P) +	0.0	0.0	0.0	91.5	62.0	63.3	45.9	71.9	5	66.7
JEDD * (P) +	0.0	0.0	0.0	0.0	63.3	57.7	44.9	69.5	4	64.7
AP604 CL * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	41.9	49.8	2	
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.6	1	
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	0.0	0.0	43.5	64.1	2	

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (184 = JULY 3)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	8	60.6	8	182	9	39.4	8	15.1
MCNEAL*	8	58.1	8	184	9	32.5	8	15.3
OUTLOOK * +	8	57.7	8	185	9	32.8	8	14.8
REEDER +	8	60.0	8	182	9	33.6	8	15.5
CONAN */ (P)+	8	58.7	8	182	9	30.9	8	15.7
HANK * (P)+	8	56.8	8	181	9	30.7	8	15.5
CHOTEAU * +	8	58.9	8	182	9	31.6	8	15.6
CHECK AVE	8	58.7	8	182	9	33.1	8	15.4
VIDA * +	6	58.5	6	183	7	32.9	6	15.2
FREYR * (P) +	5	59.6	5	182	6	34.1	5	14.9
KELBY * (P) +	4	60.9	4	180	5	30.6	4	16.2
KUNTZ (P) +	3	58.8	3	182	4	30.3	3	14.4
CORBIN (P) +	7	59.9	7	181	8	32.7	7	15.0
VOLT (P) +	4	59.7	4	185	5	32.1	4	15.3
ONEAL (P) +	5	59.2	5	183	6	33.0	5	15.5
JEDD * (P) +	4	60.2	4	180	5	27.9	4	14.7
AP604 CL * (P) +	2	59.7	2	180	3	31.6	2	15.8
SY TYRA (P) +	1	60.3	1	182	2	28.2	1	14.2
WB GUNNISON (P) +	2	60.7	2	181	3	31.5	2	15.2

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

<sup>2</sup> The 2008 and 2010 nurseries were hailed out and not harvested in Bozeman



**HARD RED SPRING WHEAT  
DISTRICT 2  
BOZEMAN IRRIGATED**

2001-2010 <sup>2</sup> GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES										EIGHT YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2009	YRS	
FORTUNA	73.5	72.1	63.5	100.6	70.0	55.6	37.7	62.6	8	67.0
MCNEAL*	92.0	88.1	65.3	102.9	82.5	33.0	41.3	68.9	8	71.8
OUTLOOK* +	92.7	73.6	74.3	104.2	86.4	48.4	54.4	80.9	8	76.9
REEDER +	90.5	73.4	74.7	97.2	83.6	56.2	57.0	82.6	8	76.9
CONAN (P)+	80.1	84.1	68.9	89.9	78.4	63.7	52.2	60.0	8	72.2
HANK* (P)+	93.5	99.5	74.5	115.3	91.9	60.6	56.2	79.2	8	83.8
CHOTEAU* +	92.8	93.8	70.4	103.2	87.4	54.8	54.1	80.3	8	79.6
CHECK AVE	87.9	83.5	70.2	101.9	82.9	53.2	50.4	73.5	8	75.4
VIDA +	0.0	0.0	80.0	107.9	87.2	53.7	58.0	81.4	6	81.7
FREYR* (P) +	0.0	0.0	0.0	100.9	84.8	64.4	57.5	65.7	5	77.8
KELBY* (P) +	0.0	0.0	0.0	90.2	0.0	49.5	59.1	51.1	4	67.6
KUNTZ* (P) +	0.0	0.0	0.0	0.0	0.0	53.9	59.5	64.8	3	75.9
CORBIN (P) +	80.5	86.5	71.2	96.3	0.0	74.5	49.5	65.0	7	75.9
VOLT* (P) +	0.0	0.0	0.0	0.0	90.2	78.6	60.1	87.2	4	91.7
ONEAL (P) +	0.0	0.0	0.0	110.0	85.6	58.0	51.2	80.6	5	80.3
JEDD* (P) +	0.0	0.0	0.0	0.0	91.3	65.5	52.9	72.1	4	81.8
AP604 CL (P) +	0.0	0.0	0.0	0.0	0.0	0.0	50.4	58.0	2	
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.0	1	
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	0.0	0.0	43.5	70.2	2	

**2000-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (180 = JUNE 29)		PLANT HEIGHT (INCHES)		PROTEIN %	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	8	61.7	8	182	7	40.3	8	14.9
MCNEAL*	8	60.1	8	183	7	35.8	8	14.9
OUTLOOK* +	8	59.2	8	184	7	36.0	8	14.6
REEDER +	8	61.2	8	182	7	36.5	8	15.4
CONAN (P)+	8	60.5	8	181	7	33.1	8	15.1
HANK* (P)+	8	59.0	8	180	7	32.0	8	14.8
CHOTEAU* +	8	60.6	8	181	7	33.7	8	15.1
CHECK AVE	8	60.3	8	182	7	35.4	8	15.0
VIDA +	6	59.7	6	183	5	35.2	6	15.2
FREYR* (P) +	5	61.3	5	181	4	36.3	5	14.7
KELBY* (P) +	4	61.4	4	179	3	32.6	4	15.4
KUNTZ* (P) +	3	60.7	3	181	2	31.6	3	14.2
CORBIN (P) +	7	61.3	7	180	6	34.9	7	14.8
VOLT* (P) +	4	62.8	4	185	3	33.2	4	14.3
ONEAL (P) +	5	60.6	5	183	4	35.6	5	15.1
JEDD* (P) +	4	62.3	4	180	3	29.5	4	14.5
AP604 CL (P) +	2	61.2	2	179	1	37.1	2	15.9
SY TYRA (P) +	1	61.3	1	180	-	-	1	13.7
WB GUNNISON (P) +	2	61.6	2	179	1	33.2	2	14.9

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

<sup>2</sup> The 2008 and 2010 nurseries were hailed out and not harvested in Bozeman

**HARD RED SPRING WHEAT  
DISTRICT 3  
HUNTLEY DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YRS	
FORTUNA	25.4	11.4	37.7	31.7	36.3	41.3	54.7	51.4	45.6	62.9	10	39.8
MCNEAL*	35.6	9.3	36.0	39.1	39.0	57.1	55.9	65.9	47.2	72.5	10	45.8
OUTLOOK * +	29.3	9.8	42.5	39.3	45.0	56.5	63.4	69.6	47.9	74.8	10	47.8
REEDER +	32.7	13.8	40.6	32.8	43.4	52.5	61.4	69.0	51.1	68.5	10	46.6
CONAN */ (P)+	26.3	11.0	35.6	28.3	39.6	41.7	55.4	58.4	40.4	71.8	10	40.8
HANK * (P)+	26.2	11.9	42.3	29.5	44.4	47.3	61.4	64.6	55.3	80.7	10	46.4
CHOTEAU * +	28.1	9.8	37.2	28.7	34.9	53.5	61.9	59.5	45.7	74.6	10	43.4
CHECK AVE	29.1	11.0	38.8	32.8	40.4	50.0	59.1	62.6	47.6	72.2	10	44.4
VIDA * +	0.0	0.0	42.3	34.3	38.2	54.0	67.2	67.8	57.1	75.5	8	48.0
FREYR * (P) +	0.0	0.0	0.0	33.3	44.9	49.8	55.0	61.7	47.3	68.7	7	43.9
KELBY (P) +	0.0	0.0	0.0	33.6	0.0	37.9	40.1	55.6	36.2	68.9	6	37.2
KUNTZ (P) +	0.0	0.0	0.0	0.0	0.0	49.9	57.1	60.8	50.5	74.4	5	44.5
CORBIN (P) +	27.1	13.1	37.8	17.9	0.0	51.2	62.7	65.8	48.0	72.8	9	43.6
VOLT (P) +	0.0	0.0	0.0	0.0	48.8	49.3	63.7	67.7	44.6	78.6	6	47.1
ONEAL * (P) +	0.0	0.0	0.0	35.2	42.5	52.3	60.9	63.8	55.9	74.5	7	46.8
JEDD * (P) +	0.0	0.0	0.0	0.0	42.4	46.9	60.6	65.6	50.0	75.9	6	45.6
AP604 CL * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	58.0	67.3	48.1	73.0	4	45.2
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.6	77.0	2	
WB GUNNISON * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	60.4	0.0	49.5	73.5	3	45.5

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (166 = JUNE 15)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	59.6	10	165	10	36.0	10	13.6
MCNEAL*	10	58.8	10	167	10	31.5	10	13.4
OUTLOOK * +	10	58.7	10	168	10	31.6	10	13.1
REEDER +	10	60.1	10	165	10	30.9	10	14.0
CONAN */ (P)+	10	59.6	10	165	10	28.7	10	14.3
HANK * (P)+	10	58.5	10	165	10	28.5	10	13.9
CHOTEAU * +	10	59.6	10	166	10	28.7	10	14.4
CHECK AVE	10	59.3	10	166	10	30.8	10	13.8
VIDA * +	8	59.0	8	166	8	31.2	8	13.2
FREYR * (P) +	7	60.2	7	165	7	32.9	7	13.4
KELBY (P) +	6	60.4	6	164	6	27.7	6	15.1
KUNTZ (P) +	5	60.2	5	166	5	28.6	5	12.9
CORBIN (P) +	9	60.2	9	164	9	30.1	9	14.2
VOLT (P) +	6	61.0	6	166	6	29.0	6	13.4
ONEAL * (P) +	7	59.4	7	166	7	30.7	7	13.0
JEDD * (P) +	6	60.2	6	165	6	26.3	6	13.4
AP604 CL * (P) +	4	61.0	4	164	4	33.0	4	13.6
SY TYRA (P) +	2	60.5	2	166	2	27.9	2	13.2
WB GUNNISON * (P) +	3	60.0	3	164	3	28.9	3	14.0

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

**HARD RED SPRING WHEAT  
DISTRICT 3  
HUNTLEY IRRIGATED**

VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YRS	TEN YEAR
												COMPARABLE AVERAGE <sup>1,2</sup>
FORTUNA	99.2	107.4	79.4	108.9	62.7	70.3	69.6	104.2	84.0	74.3	10	86.0
MCNEAL*	110.6	118.5	88.1	114.4	78.1	89.2	83.2	84.8	75.8	87.7	10	93.0
OUTLOOK * +	117.0	119.0	88.9	116.2	89.8	94.0	87.4	86.4	101.7	90.9	10	99.1
REEDER +	116.0	125.5	85.5	110.5	72.4	77.6	75.8	103.5	102.7	91.5	10	96.1
CONAN (P)+	101.5	109.5	77.5	113.4	73.7	70.5	85.6	99.0	92.9	87.8	10	91.1
HANK * (P)+	107.0	123.0	85.6	123.3	85.8	92.2	97.9	99.4	107.2	103.4	10	102.5
CHOTEAU * +	114.9	119.0	86.6	128.7	83.0	87.9	91.7	111.8	107.7	93.8	10	102.5
CHECK AVE	109.5	117.4	84.5	116.5	77.9	83.1	84.5	98.5	96.0	89.9	10	95.8
VIDA * +	0.0	0.0	98.6	117.8	86.4	88.2	99.3	95.2	105.3	86.4	8	101.8
FREYR * (P) +	0.0	0.0	0.0	115.4	86.3	81.4	90.3	101.8	102.0	89.4	7	98.8
KELBY (P) +	0.0	0.0	0.0	108.8	0.0	69.7	0.0	98.4	85.0	90.7	5	89.6
KUNTZ * (P) +	0.0	0.0	0.0	0.0	0.0	97.3	0.0	92.1	96.3	93.8	4	99
CORBIN (P) +	100.7	119.2	77.2	94.4	0.0	88.3	93.2	103.3	100.2	79.4	9	93.2
VOLT * (P) +	0.0	0.0	0.0	0.0	90.9	91.4	0.0	0.0	0.0	97.8	3	106.9
ONEAL (P) +	0.0	0.0	0.0	127.9	89.5	93.3	0.0	104.8	108.4	87.4	6	104.2
JEDD * (P) +	0.0	0.0	0.0	0.0	90.8	94.6	0.0	120.7	101.4	95.4	5	108.2
AP604 CL (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	106.2	0.0	1	
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (166 = JUNE 15)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	62.0	10	167	10	43.5	10	13.1
MCNEAL*	10	62.1	10	168	10	38.0	10	12.2
OUTLOOK * +	10	61.1	10	169	10	39.1	10	12.1
REEDER +	10	62.5	10	165	10	39.8	10	12.9
CONAN (P)+	10	61.4	10	165	10	35.1	10	13.1
HANK * (P)+	10	60.8	10	165	10	35.0	10	12.3
CHOTEAU * +	10	62.3	10	167	10	37.0	10	12.5
CHECK AVE	10	61.7	10	167	10	38.2	10	12.6
VIDA * +	8	61.5	8	167	8	38.4	8	12.5
FREYR * (P) +	7	62.2	7	166	7	39.5	7	12.7
KELBY (P) +	5	62.8	5	164	5	34.6	5	13.6
KUNTZ * (P) +	4	62.2	4	166	4	34.6	4	12.0
CORBIN (P) +	9	62.0	9	164	9	37.0	9	12.7
VOLT * (P) +	3	63.6	3	167	3	33.8	3	12.2
ONEAL (P) +	6	62.2	6	167	6	37.9	6	12.0
JEDD * (P) +	5	62.7	5	166	5	32.2	5	12.4
AP604 CL (P) +	1	62.5	1	164	1	39.4	1	11.9
SY TYRA (P) +	0		0		0		0	
WB GUNNISON (P) +	0		0		0		0	

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

<sup>2</sup>The 2007-2010 Huntley irrigated data is from the "offstation" spring wheat nursery grown there

**HARD RED SPRING WHEAT  
DISTRICT 4  
MOCCASIN DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											NINE YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2003	2004	2005	2006	2007	2008	2009	2010	YRS	
FORTUNA	40.4	18.1	37.1	25.7	32.1	34.5	28.8	26.2	38.1	9	31.2
MCNEAL*	47.5	20.3	36.9	24.3	34.2	43.0	28.3	33.9	40.8	9	34.4
OUTLOOK * +	42.3	16.6	39.5	26.0	31.5	44.6	30.3	27.9	44.4	9	33.7
REEDER +	43.6	18.4	37.9	27.2	34.5	42.0	28.7	30.5	41.2	9	33.8
CONAN */(P)+	40.3	17.8	39.3	25.3	32.8	37.7	25.0	29.6	41.1	9	32.1
HANK *(P)+	45.6	21.4	41.5	29.2	37.2	42.3	27.6	31.1	42.8	9	35.4
CHOTEAU * +	38.3	15.0	35.6	26.8	33.9	43.0	23.1	24.4	40.2	9	31.1
CHECK AVE	42.6	18.2	38.2	26.4	33.7	41.0	27.4	29.1	41.2	9	33.1
VIDA * +	0.0	17.0	39.1	25.8	35.5	44.3	27.2	34.3	41.5	8	34.3
FREYR *(P) +	0.0	0.0	39.8	24.0	33.7	39.0	24.7	29.6	37.5	7	31.9
KELBY *(P) +	0.0	0.0	30.7	0.0	38.1	40.2	29.0	25.5	45.4	6	32.8
KUNTZ (P) +	0.0	0.0	0.0	0.0	38.6	41.4	26.5	29.1	38.0	5	33.3
CORBIN */(P) +	37.3	16.3	35.3	0.0	33.5	41.7	21.9	26.6	37.6	8	30.5
VOLT (P) +	0.0	0.0	0.0	32.0	32.2	40.0	30.0	28.2	38.4	6	33.4
ONEAL *(P) +	0.0	0.0	44.6	28.5	29.6	40.6	27.5	31.2	43.9	7	34.3
JEDD *(P) +	0.0	0.0	0.0	27.0	39.2	46.0	25.2	26.4	41.4	6	34.2
AP604 CL *(P) +	0.0	0.0	0.0	0.0	0.0	41.5	23.5	27.4	33.6	4	30.1
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.1	38.9	2	
WB GUNNISON *(P) +	0.0	0.0	0.0	0.0	0.0	41.9	0.0	30.6	41.4	3	33.8

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (183 = JULY 2)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	9	57.7	9	181	9	34.9	9	15.6
MCNEAL*	9	56.6	9	182	9	31.4	9	15.6
OUTLOOK * +	9	55.7	9	183	9	29.7	9	15.7
REEDER +	9	57.9	9	181	9	30.4	9	15.8
CONAN */(P)+	9	57.7	9	181	9	28.9	9	15.4
HANK *(P)+	9	54.8	9	180	9	29.3	9	15.5
CHOTEAU * +	9	57.5	9	181	9	28.7	9	15.3
CHECK AVE	9	56.9	9	181	9	30.4	9	15.5
VIDA * +	8	56.5	8	182	8	30.0	8	15.1
FREYR *(P) +	7	57.7	7	181	7	32.3	7	15.3
KELBY *(P) +	6	58.3	6	179	6	28.6	6	16.0
KUNTZ (P) +	5	57.8	5	181	5	28.6	5	14.1
CORBIN */(P) +	8	56.8	8	180	8	29.5	8	15.9
VOLT (P) +	6	59.5	6	182	6	29.4	6	14.4
ONEAL *(P) +	7	57.9	7	182	7	31.0	7	16.0
JEDD *(P) +	6	57.7	6	180	6	25.8	6	15.7
AP604 CL *(P) +	4	57.7	4	179	4	31.0	4	15.3
SY TYRA (P) +	2	58.4	2	181	2	26.9	2	16.0
WB GUNNISON *(P) +	3	56.9	3	180	3	29.5	3	15.9

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white  
+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

**HARD RED SPRING WHEAT  
DISTRICT 5  
HAVRE DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											TEN YEAR COMPARABLE AVERAGE <sup>1</sup>	
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YRS	
FORTUNA	16.7	28.5	10.8	42.0	48.2	34.0	32.1	44.9	46.3	48.7	10	35.2
MCNEAL*	18.9	36.3	13.9	40.8	51.4	27.4	34.8	47.4	42.4	48.8	10	36.2
OUTLOOK * +	22.9	44.5	16.2	49.0	58.3	31.8	35.5	48.7	44.3	56.2	10	40.7
REEDER +	22.5	34.9	12.4	40.9	51.2	28.8	35.6	51.3	49.0	55.2	10	38.2
CONAN */ (P)+	20.4	33.7	13.5	43.3	55.5	31.9	35.8	45.9	43.3	51.1	10	37.5
HANK * (P)+	20.5	37.8	10.4	45.0	55.6	33.3	34.5	48.0	46.7	56.2	10	38.8
CHOTEAU * +	19.3	34.9	13.1	42.5	55.7	32.1	36.1	43.4	40.7	54.8	10	37.3
CHECK AVE	20.2	35.8	12.9	43.4	53.7	31.3	34.9	47.1	44.7	53.0	10	37.7
VIDA * +	0.0	0.0	14.3	51.7	58.3	34.3	42.3	53.4	53.8	59.3	8	43.1
FREYR * (P) +	0.0	0.0	0.0	40.4	49.5	30.7	33.7	44.4	43.2	46.2	7	35.3
KELBY * (P) +	0.0	0.0	0.0	38.2	0.0	29.3	37.5	49.6	44.0	47.3	6	36.4
KUNTZ (P) +	0.0	0.0	0.0	0.0	0.0	26.7	31.5	42.4	44.4	44.4	5	33.8
CORBIN */ (P) +	20.1	34.8	9.2	48.7	0.0	29.4	42.8	46.8	45.9	52.8	9	38.5
VOLT (P) +	0.0	0.0	0.0	0.0	52.8	27.5	35.3	41.3	42.5	49.0	6	35.4
ONEAL * (P) +	0.0	0.0	0.0	55.0	57.6	31.0	34.5	52.1	48.6	59.2	7	41.4
JEDD * (P) +	0.0	0.0	0.0	0.0	60.3	31.7	34.4	48.5	43.3	52.6	6	38.5
AP604 CL * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	36.3	46.0	42.1	52.3	4	37.1
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	51.7	2	
WB GUNNISON * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	38.4	0.0	45.4	62.8	3	41.7

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (177 = JUNE 26)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	58.0	10	177	10	29.9	10	15.6
MCNEAL*	10	56.5	10	179	10	26.2	10	16.2
OUTLOOK * +	10	56.7	10	180	10	26.5	10	15.6
REEDER +	10	58.0	10	178	10	26.9	10	15.9
CONAN */ (P)+	10	58.5	10	178	10	25.4	10	15.9
HANK * (P)+	10	56.5	10	176	10	25.0	10	16.1
CHOTEAU * +	10	57.2	10	178	10	25.4	10	16.2
CHECK AVE	10	57.4	10	178	10	26.5	10	15.9
VIDA * +	8	57.4	8	179	8	27.1	8	15.5
FREYR * (P) +	7	58.3	7	178	7	27.3	7	15.4
KELBY * (P) +	6	59.5	6	176	6	24.6	6	16.2
KUNTZ (P) +	5	57.4	5	179	5	25.1	5	15.2
CORBIN */ (P) +	9	58.1	9	177	9	26.2	9	16.1
VOLT (P) +	6	58.9	6	180	6	25.2	6	15.4
ONEAL * (P) +	7	58.3	7	179	7	25.6	7	16.1
JEDD * (P) +	6	58.7	6	176	6	22.5	6	15.7
AP604 CL * (P) +	4	58.6	4	175	4	26.7	4	16.1
SY TYRA (P) +	2	57.4	2	178	2	23.6	2	15.2
WB GUNNISON * (P) +	3	58.9	3	177	3	25.3	3	15.1

\* = Recommended variety, \*/ = Recommended in wheat stem sawfly areas only, (P) = Private variety, (HW) = hard white

+ = Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

**HARD RED SPRING WHEAT  
DISTRICT 5  
CONRAD DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											TEN YEAR COMPARABLE AVERAGE <sup>1</sup>	
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YRS	
FORTUNA	14.1	42.8	49.6	58.0	51.0	43.7	32.9	44.5	62.8	55.0	10	45.4
MCNEAL*	13.4	41.5	49.5	57.5	54.3	51.3	36.6	39.0	74.7	58.4	10	47.6
OUTLOOK* +	15.2	43.0	48.8	60.2	51.9	63.8	33.6	41.2	82.0	42.8	10	48.3
REEDER +	17.1	49.1	53.9	60.7	53.3	62.0	35.0	36.8	78.7	57.7	10	50.4
CONAN*/(P)+	15.1	40.8	45.9	58.0	49.7	53.1	36.2	49.1	62.2	61.2	10	47.1
HANK*(P)+	13.7	42.0	48.9	60.0	51.0	59.6	33.1	34.7	75.3	65.7	10	48.4
CHOTEAU* +	14.2	45.2	59.5	63.8	50.5	67.3	37.8	40.7	75.0	81.2	10	53.5
CHECK AVE	14.7	43.5	50.9	59.7	51.7	57.3	35.0	40.9	72.9	60.3	10	48.7
VIDA* +	0.0	0.0	55.2	63.6	55.0	64.7	37.6	53.4	85.5	60.7	8	54.0
FREYR*(P) +	0.0	0.0	0.0	62.0	54.7	55.6	33.5	40.3	66.2	44.4	7	46.0
KELBY*(P) +	0.0	0.0	0.0	50.9	0.0	58.8	39.7	39.5	60.6	43.9	6	43.8
KUNTZ (P) +	0.0	0.0	0.0	0.0	0.0	56.8	37.0	31.8	72.4	59.2	5	47.0
CORBIN*/(P) +	12.1	45.2	48.7	62.4	0.0	56.2	37.0	49.8	72.5	69.2	9	50.7
VOLT (P) +	0.0	0.0	0.0	0.0	51.5	58.3	34.5	28.5	74.7	56.5	6	46.5
ONEAL*(P) +	0.0	0.0	0.0	62.6	52.6	64.7	37.0	49.8	85.4	59.8	7	53.1
JEDD*(P) +	0.0	0.0	0.0	0.0	53.8	61.2	39.8	38.1	68.2	60.2	6	49.2
AP604 CL*(P) +	0.0	0.0	0.0	0.0	0.0	0.0	36.6	35.3	60.7	58.3	4	44.5
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.6	69.6	2	
WB GUNNISON*(P) +	0.0	0.0	0.0	0.0	0.0	0.0	39.3	0.0	67.7	73.8	3	52.3

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (184 = JULY 3)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	60.5	10	182	10	36.6	10	14.1
MCNEAL*	10	59.8	10	183	10	31.0	10	13.9
OUTLOOK* +	10	58.4	10	183	10	31.0	10	14.2
REEDER +	10	60.3	10	181	10	31.2	10	14.2
CONAN*/(P)+	10	60.2	10	182	10	28.7	10	14.4
HANK*(P)+	10	58.7	10	180	10	30.0	10	14.2
CHOTEAU* +	10	60.2	10	182	10	29.3	10	14.5
CHECK AVE	10	59.7	10	182	10	31.1	10	14.2
VIDA* +	8	59.7	8	183	8	31.0	8	13.8
FREYR*(P) +	7	60.9	7	181	7	31.9	7	14.4
KELBY*(P) +	6	62.0	6	180	6	27.7	6	15.1
KUNTZ (P) +	5	60.8	5	182	5	28.0	5	13.7
CORBIN*/(P) +	9	60.6	9	180	9	30.6	9	14.3
VOLT (P) +	6	62.4	6	184	6	28.9	6	13.9
ONEAL*(P) +	7	60.3	7	183	7	31.3	7	14.2
JEDD*(P) +	6	61.0	6	181	6	25.8	6	13.8
AP604 CL*(P) +	4	61.7	4	180	4	30.4	4	14.7
SY TYRA (P) +	2	60.6	2	182	2	26.2	2	13.4
WB GUNNISON*(P) +	3	60.8	3	180	3	29.3	3	13.7

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

**HARD RED SPRING WHEAT  
DISTRICT 6  
SIDNEY DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YRS	
FORTUNA	40.1	35.5	57.4	60.3	42.0	49.0	49.2	30.2	39.7	43.2	10	44.7
MCNEAL*	48.2	43.4	60.7	68.3	45.7	52.7	53.8	34.0	45.0	39.4	10	49.1
OUTLOOK* +	54.8	44.3	69.0	67.5	46.4	57.4	55.7	34.2	44.7	46.7	10	52.1
REEDER +	54.3	52.5	67.6	68.0	50.2	59.7	52.1	36.5	44.5	47.4	10	53.3
CONAN*/(P)+	44.4	39.5	55.7	59.1	44.6	46.0	48.8	36.3	37.4	38.2	10	45.0
HANK*(P)+	44.9	39.4	63.3	66.6	48.0	55.0	53.6	40.0	42.8	44.0	10	49.8
CHOTEAU* +	55.4	42.8	61.2	61.9	46.1	52.3	52.1	31.5	39.8	45.6	10	48.9
CHECK AVE	48.9	42.5	62.1	64.6	46.2	53.2	52.2	34.7	42.0	43.5	10	49.0
VIDA* +	0.0	0.0	73.0	71.1	51.0	60.6	56.2	34.2	49.5	53.2	8	55.2
FREYR*(P) +	0.0	0.0	0.0	64.6	47.9	55.0	51.4	36.6	43.9	43.2	7	49.9
KELBY (P) +	0.0	0.0	0.0	63.6	0.0	50.4	49.3	42.6	42.4	39.7	6	48.6
KUNTZ (P) +	0.0	0.0	0.0	0.0	0.0	58.4	51.6	40.7	45.9	39.5	5	51.3
CORBIN (P) +	42.4	40.3	60.1	62.3	0.0	54.4	55.7	32.6	39.2	47.2	9	47.9
VOLT (P) +	0.0	0.0	0.0	0.0	49.3	51.1	53.5	39.5	39.8	46.0	6	50.3
ONEAL (P) +	0.0	0.0	0.0	71.6	49.5	54.3	51.0	40.4	46.8	48.7	7	52.8
JEDD*(P) +	0.0	0.0	0.0	0.0	48.7	53.2	57.7	37.9	42.3	46.1	6	51.6
AP604 CL*(P) +	0.0	0.0	0.0	0.0	0.0	0.0	54.1	30.5	43.5	45.5	4	49.3
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	45.3	2	54.6
WB GUNNISON*(P) +	0.0	0.0	0.0	0.0	0.0	0.0	51.2	0.0	36.3	41.8	3	46.0

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (170 = June 19)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	60.2	10	173	10	32.5	10	13.9
MCNEAL*	10	59.4	10	175	10	28.3	10	14.0
OUTLOOK* +	10	59.4	10	175	10	28.6	10	13.7
REEDER +	10	60.8	10	172	10	27.6	10	14.0
CONAN*/(P)+	10	60.8	10	172	10	25.9	10	14.0
HANK*(P)+	10	58.8	10	171	10	26.0	10	13.5
CHOTEAU* +	10	60.5	10	173	10	26.5	10	14.4
CHECK AVE	10	60.0	10	173	10	27.9	10	13.9
VIDA* +	8	60.0	8	174	8	28.0	8	13.5
FREYR*(P) +	7	61.0	7	172	7	29.4	7	13.9
KELBY (P) +	6	61.4	6	171	6	26.3	6	14.8
KUNTZ (P) +	5	61.1	5	173	5	27.2	5	13.1
CORBIN (P) +	9	60.2	9	171	9	27.2	9	13.9
VOLT (P) +	6	61.7	6	174	6	26.2	6	12.8
ONEAL (P) +	7	60.4	7	174	7	27.8	7	13.3
JEDD*(P) +	6	61.7	6	170	6	24.3	6	13.1
AP604 CL*(P) +	4	61.1	4	171	4	27.6	4	14.4
SY TYRA (P) +	2	61.1	2	173	2	24.5	2	12.9
WB GUNNISON*(P) +	3	60.7	3	172	3	26.8	3	13.9

\* =Recommended variety, \*/ = recommended in wheat stem sawfly areas only, (P) =Private variety, (HW) = hard white

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable

**HARD RED SPRING WHEAT  
DISTRICT 6  
SIDNEY IRRIGATED**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YRS	
FORTUNA	28.2	37.4	77.5	66.4	60.3	60.3	40.3	78.8	75.5	68.2	10	59.3
MCNEAL *	62.6	56.7	107.5	83.4	67.3	69.5	46.4	107.1	95.3	66.2	10	76.2
OUTLOOK * +	66.9	49.7	104.1	84.2	75.9	69.4	42.6	103.8	96.3	87.2	10	78.0
REEDER +	66.8	52.0	102.5	88.8	62.6	83.7	44.1	90.8	95.7	85.0	10	77.2
CONAN (P)+	56.7	47.3	88.3	76.1	59.6	72.1	37.5	88.1	82.7	73.3	10	68.2
HANK * (P)+	59.2	53.3	113.5	87.6	74.7	69.1	40.3	101.5	99.2	65.3	10	76.4
CHOTEAU * +	55.0	60.6	107.3	76.0	55.8	71.3	35.5	95.6	94.8	79.4	10	73.1
CHECK AVE	56.5	51.0	100.1	80.4	65.2	70.8	41.0	95.1	91.4	74.9	10	72.6
VIDA +	0.0	0.0	105.9	90.5	49.9	77.4	35.7	93.4	96.0	68.0	8	72.4
FREYR * (P) +	0.0	0.0	0.0	82.3	72.8	76.6	31.9	104.8	91.0	85.4	7	76.3
KELBY (P) +	0.0	0.0	0.0	76.8	0.0	67.9	30.6	90.6	88.3	74.0	6	68.6
KUNTZ (P) +	0.0	0.0	0.0	0.0	0.0	72.5	30.8	97.1	95.2	78.7	5	72.8
CORBIN (P) +	48.9	55.1	94.6	70.6	0.0	67.4	29.1	96.2	93.4	61.6	9	67.8
VOLT * (P) +	0.0	0.0	0.0	0.0	81.2	61.0	42.9	99.1	96.9	80.8	6	76.5
ONEAL (P) +	0.0	0.0	0.0	87.6	77.4	69.5	40.3	103.7	100.5	67.6	7	76.5
JEDD * (P) +	0.0	0.0	0.0	0.0	71.3	70.4	37.1	106.6	82.5	51.0	6	69.4
AP604 CL (P) +	0.0	0.0	0.0	0.0	0.0	0.0	27.9	89.2	90.2	71.3	4	66.9
SY TYRA (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.4	76.8	2	
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	0.0	0.0	42.1	0.0	86.5	77.1	3	72.1

2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (173 = JUNE 22)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	60.2	10	177	10	36.7	10	14.1
MCNEAL *	10	60.3	10	178	10	32.5	10	13.8
OUTLOOK * +	10	60.1	10	178	10	32.7	10	13.7
REEDER +	10	61.5	10	176	10	32.5	10	14.3
CONAN (P)+	10	61.1	10	177	10	29.6	10	13.9
HANK * (P)+	10	59.4	10	175	10	29.2	10	13.9
CHOTEAU * +	10	60.9	10	176	10	29.8	10	14.0
CHECK AVE	10	60.5	10	177	10	31.9	10	14.0
VIDA +	8	59.8	8	177	8	31.7	8	13.6
FREYR * (P) +	7	61.1	7	176	7	32.7	7	13.7
KELBY (P) +	6	61.7	6	175	6	27.8	6	14.9
KUNTZ (P) +	5	60.7	5	176	5	28.8	5	13.4
CORBIN (P) +	9	60.7	9	175	9	29.9	9	13.5
VOLT * (P) +	6	61.6	6	180	6	30.4	6	13.2
ONEAL (P) +	7	59.8	7	177	7	33.1	7	13.7
JEDD * (P) +	6	60.8	6	175	6	25.6	6	13.8
AP604 CL (P) +	4	61.7	4	174	4	29.2	4	13.8
SY TYRA (P) +	2	61.6	2	176	2	27.3	2	12.8
WB GUNNISON (P) +	3	61.6	3	176	3	30.0	3	13.3

+ =Protected under the Plant Variety Protection Act

<sup>1</sup>Comparable averages using less than three years data are not reliable



## DURUM WHEAT DISTRICT 2 BOZEMAN DRYLAND

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES										EIGHT YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001 <sup>3</sup>	2002	2003	2004	2005	2006	2007	2009	YEARS	
MOUNTRAIL * +	83.8	60.4	41.9	61.8	48.5	57.1	44.5	83.2	8	60.2
CHECK AVE	83.8	60.4	41.9	61.8	48.5	57.1	44.5	83.2	8	60.2
VIC	76.3	52.2	42.5	52.1	48.7	0.0	0.0	0.0	5	55.2
MONROE	71.9	52.6	42.5	58.2	48.4	0.0	0.0	0.0	5	55.5
KYLE	74.4	47.9	39.6	54.5	46.0	55.8	0.0	0.0	6	54.1
MUNICH +	79.3	60.1	41.8	58.1	48.5	0.0	0.0	0.0	5	58.4
BEN +	79.9	56.2	41.8	59.2	49.1	0.0	0.0	0.0	5	58.1
MAIER +	81.2	62.7	41.5	61.1	50.6	57.0	0.0	0.0	6	60.3
PLAZA +	73.6	58.9	34.1	63.7	49.3	50.7	0.0	0.0	6	56.2
LEBSOCK +	76.6	61.7	41.2	62.5	49.5	0.0	0.0	0.0	5	59.2
AC AVONLEA * +	76.4	59.7	40.6	62.5	48.6	56.1	0.0	0.0	6	58.5
ALZADA * (P)+	76.4	59.1	42.2	74.0	56.5	54.4	46.9	62.5	8	59.0
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	55.9	42.8	64.6	3	53.2
GRENORA +	0.0	0.0	0.0	0.0	0.0	58.4	43.4	78.5	3	58.7
DIVIDE +	0.0	0.0	0.0	0.0	0.0	56.6	40.3	70.1	3	54.4
DILSE +	0.0	0.0	38.4	61.2	52.0	57.6	0.0	70.8	5	57.6
ALKABO +	0.0	0.0	0.0	0.0	0.0	55.6	46.2	73.6	3	57.1
PIERCE +	0.0	0.0	40.8	57.3	47.6	59.1	44.6	71.4	6	57.3

### 2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (185 = JULY 4)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	8	58.9	8	185	8	36.5	7	15.4
CHECK AVE	8	58.9	8	185	8	36.5	7	15.4
VIC	5	60.4	5	183	5	40.2	5	15.8
MONROE	5	59.1	5	181	5	38.1	5	15.3
KYLE	6	59.3	6	186	6	42.3	5	15.6
MUNICH +	5	59.1	5	183	5	34.9	5	15.6
BEN +	5	60.3	5	183	5	38.2	5	15.6
MAIER +	6	59.5	6	184	6	35.5	5	16.2
PLAZA +	6	58.8	6	185	6	28.2	5	15.2
LEBSOCK +	5	60.1	5	182	5	35.7	5	15.4
AC AVONLEA * +	6	59.6	6	183	6	38.0	5	16.1
ALZADA * (P)+	8	59.4	8	181	8	29.3	7	15.2
STRONGFIELD	3	59.6	3	184	3	35.7	2	16.4
GRENORA +	3	59.8	3	184	3	33.9	2	15.6
DIVIDE +	3	60.2	3	185	3	37.7	2	15.6
DILSE +	5	60.6	5	185	5	36.4	4	16.5
ALKABO +	3	60.4	3	184	3	36.0	2	15.6
PIERCE +	6	60.5	6	184	6	38.1	5	15.1

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not very reliable

<sup>3</sup> The 2001 durum nursery at Bozeman was irrigated with 7 inches of water

**DURUM WHEAT  
DISTRICT 3  
HUNTLEY DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES												TEN YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YEARS	
MOUNTRAIL +	33.6	6.6	30.3	32.7	38.3	39.0	73.7	62.1	55.9	82.8	10	45.5
CHECK AVE	33.6	6.6	30.3	32.7	38.3	39.0	73.7	62.1	55.9	82.8	10	45.5
VIC	31.9	8.5	28.9	27.7	41.7	0.0	0.0	0.0	0.0	0.0	5	44.6
MONROE	31.1	14.7	31.8	26.9	42.6	0.0	0.0	0.0	0.0	0.0	5	47.3
KYLE	34.5	4.9	34.7	32.3	32.9	30.8	0.0	0.0	0.0	0.0	6	42.9
MUNICH +	34.3	10.5	32.6	29.9	39.4	0.0	0.0	0.0	0.0	0.0	5	47.2
BEN +	29.4	11.0	28.7	31.1	42.5	0.0	0.0	0.0	0.0	0.0	5	45.9
MAIER +	29.9	11.2	30.2	32.7	38.0	33.2	0.0	0.0	0.0	0.0	6	44.1
PLAZA +	32.2	8.2	30.4	31.0	40.6	34.5	0.0	0.0	0.0	0.0	6	44.6
LEB SOCK +	29.0	9.3	35.0	29.8	43.3	0.0	0.0	63.5	0.0	0.0	6	46.9
AC AVONLEA +	34.8	10.6	32.2	28.8	44.2	38.3	0.0	0.0	0.0	0.0	6	47.6
ALZADA (P)+	33.5	15.1	34.3	29.3	46.2	31.2	68.7	62.0	47.0	74.2	10	44.2
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	31.8	69.4	61.2	55.1	84.2	5	43.8
GRENORA +	0.0	0.0	0.0	0.0	0.0	35.3	74.2	60.8	54.8	78.3	5	44.0
DIVIDE +	0.0	0.0	0.0	0.0	0.0	37.4	71.2	58.6	53.5	84.3	5	44.3
DILSE +	0.0	0.0	29.6	28.4	39.9	31.2	0.0	59.9	39.9	0.0	6	40.3
ALKABO +	0.0	0.0	0.0	0.0	0.0	31.5	71.9	63.3	49.2	91.2	5	44.6
PIERCE +	0.0	0.0	31.4	29.1	39.6	34.5	64.2	56.3	49.5	80.8	8	42.3

2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (164 = JUNE 13)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL +	10	59.3	8	167	10	33.2	8	14.2
CHECK AVE	10	59.3	8	167	10	33.2	8	14.2
VIC	5	60.2	5	166	5	36.7	4	13.8
MONROE	5	60.0	5	163	5	36.6	4	14.2
KYLE	6	60.0	6	168	6	38.0	5	13.9
MUNICH +	5	59.7	5	166	5	32.1	4	14.1
BEN +	5	60.6	5	166	5	35.8	4	14.5
MAIER +	6	60.0	6	166	6	33.0	5	14.6
PLAZA +	6	58.7	6	167	6	29.3	5	13.8
LEB SOCK +	6	60.9	5	165	6	32.9	4	13.8
AC AVONLEA +	6	60.7	6	166	6	35.9	5	14.4
ALZADA (P)+	10	59.9	8	164	10	28.2	8	13.8
STRONGFIELD	5	59.9	3	168	5	31.9	4	14.4
GRENORA +	5	59.7	3	166	5	30.1	4	14.2
DIVIDE +	5	59.7	3	167	5	32.8	4	13.7
DILSE +	6	60.0	5	167	6	32.3	5	14.8
ALKABO +	5	60.0	3	167	5	32.0	4	13.6
PIERCE +	8	60.4	6	166	8	34.0	7	14.3

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not reliable

**DURUM WHEAT  
DISTRICT 4  
MOCCASIN DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES									SEVEN YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2003	2005	2006	2007	2009	2010	YEARS	
MOUNTRAIL * +	32.3	18.8	23.0	31.5	29.8	26.9	41.8	7	29.2
CHECK AVE	32.3	18.8	23.0	31.5	29.8	26.9	41.8	7	29.2
VIC	29.5	12.5	20.9	0.0	0.0	0.0	0.0	3	24.8
MONROE	29.2	15.0	20.9	0.0	0.0	0.0	0.0	3	25.6
KYLE	30.7	15.1	22.7	34.4	0.0	0.0	0.0	4	28.4
MUNICH +	30.5	12.3	21.7	0.0	0.0	0.0	0.0	3	25.4
BEN +	28.7	13.9	22.3	0.0	0.0	0.0	0.0	3	25.5
MAIER +	29.8	12.8	23.7	32.7	0.0	0.0	0.0	4	27.4
PLAZA +	29.5	11.6	24.2	35.5	0.0	0.0	0.0	4	27.8
LEBSOCK+	29.6	12.1	25.4	0.0	0.0	0.0	0.0	3	26.4
AC AVONLEA * +	33.9	14.8	24.0	33.0	0.0	0.0	0.0	4	29.2
ALZADA * (P)+	35.5	13.8	30.3	31.8	35.4	26.0	44.8	7	31.1
STRONGFIELD	0.0	0.0	0.0	38.7	29.7	29.8	42.8	4	31.62
GRENORA +	0.0	0.0	0.0	39.0	30.1	26.5	39.9	4	30.39
DIVIDE +	0.0	0.0	0.0	37.1	33.1	26.9	41.3	4	31.04
DILSE +	0.0	9.5	22.8	31.9	0.0	23.4	0.0	4	25.5
ALKABO +	0.0	0.0	0.0	37.0	29.0	29.1	44.4	4	31.3
PIERCE +	0.0	14.1	21.7	33.5	26.5	23.8	41.1	6	27.3

2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (185 = JULY 4)		PLANT HEIGHT (INCHES)		PROTEIN %	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	7	58.3	6	182	8	29.0	7	15.1
CHECK AVE	7	58.3	6	182	8	29.0	7	15.1
VIC	3	59.3	4	181	4	32.5	3	15.2
MONROE	3	57.5	4	178	4	32.8	3	14.9
KYLE	4	59.4	5	184	5	33.9	4	14.9
MUNICH +	3	57.5	4	180	4	28.0	3	14.8
BEN +	3	59.4	4	181	4	31.5	3	14.6
MAIER +	4	58.9	5	181	5	28.5	4	14.9
PLAZA +	4	57.9	5	183	5	25.4	4	14.8
LEBSOCK+	3	59.9	4	180	4	30.1	3	13.9
AC AVONLEA * +	4	59.6	5	180	5	31.5	4	14.4
ALZADA * (P)+	7	59.0	6	179	8	26.0	7	13.7
STRONGFIELD	4	59.0	2	183	4	29.4	4	15.1
GRENORA +	4	59.5	2	181	4	28.2	4	13.8
DIVIDE +	4	59.3	2	183	4	30.8	4	14.7
DILSE +	4	59.1	4	183	4	28.4	4	14.7
ALKABO +	4	60.8	2	181	4	30.0	4	14.1
PIERCE +	6	60.1	4	181	6	30.5	6	14.7

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not reliable

## DURUM WHEAT DISTRICT 5 HAVRE DRYLAND

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES												
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YEARS	TEN YEAR
												COMPARABLE AVERAGE <sup>1</sup>
MOUNTRAIL * +	18.9	39.5	11.6	44.3	46.7	25.8	36.5	39.8	41.1	58.0	10	36.2
CHECK AVE	18.9	39.5	11.6	44.3	46.7	25.8	36.5	39.8	41.1	58.0	10	36.2
VIC	19.1	35.3	10.9	35.7	44.6	0.0	0.0	0.0	0.0	0.0	5	32.7
MONROE	16.9	33.7	7.1	43.4	47.8	0.0	0.0	0.0	0.0	0.0	5	33.5
KYLE	20.5	36.7	12.5	49.9	46.0	30.2	0.0	0.0	0.0	0.0	6	38.0
MUNICH +	17.0	38.7	10.6	40.4	44.9	0.0	0.0	0.0	0.0	0.0	5	34.1
BEN +	15.8	35.9	8.4	41.3	41.2	0.0	0.0	0.0	0.0	0.0	5	32.1
MAIER +	15.7	39.0	10.0	43.5	48.5	29.9	0.0	0.0	0.0	0.0	6	36.2
PLAZA +	19.1	38.0	12.4	41.8	50.3	29.6	0.0	0.0	0.0	0.0	6	37.1
LEBSOCK+	16.3	35.2	10.5	46.7	46.6	0.0	0.0	40.9	0.0	0.0	6	35.4
AC AVONLEA * +	21.4	40.3	8.1	44.7	49.9	31.2	0.0	0.0	0.0	0.0	6	37.9
ALZADA * (P)+	18.9	39.2	9.1	47.7	46.2	30.6	44.7	45.2	39.5	58.4	10	38.0
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	31.2	37.8	46.6	45.8	67.9	5	41.3
GRENORA +	0.0	0.0	0.0	0.0	0.0	29.7	37.0	41.4	42.8	57.7	5	37.6
DIVIDE +	0.0	0.0	0.0	0.0	0.0	27.1	37.6	39.1	44.7	57.0	5	37.0
DILSE +	0.0	0.0	11.1	41.4	48.6	25.2	0.0	40.8	42.0	0.0	6	36.2
ALKABO +	0.0	0.0	0.0	0.0	0.0	27.1	35.0	40.5	41.4	60.7	5	36.8
PIERCE +	0.0	0.0	11.6	40.6	41.9	25.3	32.8	38.8	36.7	50.3	8	33.1

### 2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (180 = JUNE 29)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	10	57.9	8	180	10	27.6	9	16.3
CHECK AVE	10	57.9	8	180	10	27.6	9	16.3
VIC	5	59.4	5	179	5	29.3	4	15.9
MONROE	5	57.9	5	176	5	28.4	4	16.4
KYLE	6	59.2	6	181	6	31.2	5	15.9
MUNICH +	5	57.6	5	180	5	25.7	4	16.4
BEN +	5	59.1	5	179	5	29.6	4	16.4
MAIER +	6	58.7	6	180	6	27.4	5	16.4
PLAZA +	6	58.6	6	180	6	25.3	5	15.4
LEBSOCK+	6	59.9	5	179	6	26.4	5	15.5
AC AVONLEA * +	6	58.8	6	179	6	28.8	5	16.1
ALZADA * (P)+	10	57.9	8	176	10	24.5	9	15.6
STRONGFIELD	5	58.7	3	179	5	28.2	5	16.5
GRENORA +	5	58.1	3	179	5	25.8	5	15.7
DIVIDE +	5	58.3	3	178	5	28.0	5	15.8
DILSE +	6	58.9	5	181	6	27.8	6	16.4
ALKABO +	5	58.6	3	177	5	27.5	5	15.9
PIERCE +	8	58.9	6	179	8	28.0	8	15.9

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not reliable

**DURUM WHEAT  
DISTRICT 5  
CONRAD DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES												TEN YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YEARS	
MOUNTRAIL * +	15.0	49.5	39.2	61.8	47.9	63.2	35.3	36.8	74.9	78.4	10	50.2
CHECK AVE	15.0	49.5	39.2	61.8	47.9	63.2	35.3	36.8	74.9	78.4	10	50.2
VIC	12.8	37.7	30.6	52.5	50.6	0.0	0.0	0.0	0.0	0.0	5	43.3
MONROE	12.3	37.6	34.5	53.8	49.3	0.0	0.0	0.0	0.0	0.0	5	44.1
KYLE	14.4	51.0	33.1	57.1	50.1	61.1	0.0	0.0	0.0	0.0	6	48.4
MUNICH +	11.5	44.4	38.3	59.4	49.1	0.0	0.0	0.0	0.0	0.0	5	47.7
BEN +	12.1	40.6	35.6	54.5	45.7	0.0	0.0	0.0	0.0	0.0	5	44.3
MAIER +	12.7	43.6	46.0	57.8	54.5	60.1	0.0	0.0	0.0	0.0	6	49.9
PLAZA +	13.8	43.4	39.1	60.7	50.2	58.3	0.0	0.0	0.0	0.0	6	48.2
LEB SOCK +	13.1	42.6	33.6	57.4	50.5	0.0	0.0	38.8	0.0	0.0	6	47.3
AC AVONLEA * +	16.1	47.8	42.5	62.3	55.4	65.9	0.0	0.0	0.0	0.0	6	52.6
ALZADA * (P)+	15.6	44.6	42.2	64.6	59.8	64.2	43.5	46.3	67.7	72.5	10	52.1
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	64.8	39.4	50.7	94.0	92.5	5	59.4
GRENORA +	0.0	0.0	0.0	0.0	0.0	63.0	39.7	41.6	72.8	89.5	5	53.3
DIVIDE +	0.0	0.0	0.0	0.0	0.0	62.7	36.2	41.4	68.3	77.8	5	49.8
DILSE +	0.0	0.0	31.5	62.2	47.3	60.7	0.0	39.7	70.0	0.0	6	48.3
ALKABO +	0.0	0.0	0.0	0.0	0.0	64.1	41.3	40.3	67.5	83.4	5	51.6
PIERCE +	0.0	0.0	37.7	56.7	50.9	63.4	32.1	40.6	70.5	71.0	8	48.5

2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (183 = JULY 2)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	10	60.0	8	182	10	33.5	8	14.3
CHECK AVE	10	60.0	8	182	10	33.5	8	14.3
VIC	5	61.2	5	181	5	35.8	4	14.6
MONROE	5	60.2	5	179	5	34.2	4	15.1
KYLE	6	60.7	6	183	6	38.4	4	14.3
MUNICH +	5	60.0	5	181	5	31.5	4	14.4
BEN +	5	61.4	5	182	5	34.8	4	14.3
MAIER +	6	61.3	6	182	6	31.4	4	14.9
PLAZA +	6	59.6	6	182	6	27.6	4	14.6
LEB SOCK +	6	61.6	5	181	6	32.9	5	14.4
AC AVONLEA * +	6	60.5	6	181	6	33.9	4	15.6
ALZADA * (P)+	10	60.6	8	179	10	28.0	8	14.2
STRONGFIELD	5	60.9	3	182	5	33.7	4	14.4
GRENORA +	5	60.9	3	181	5	31.8	4	14.3
DIVIDE +	5	61.1	3	182	5	33.9	4	14.2
DILSE +	6	61.5	5	182	6	31.5	4	15.2
ALKABO +	5	61.5	3	181	5	32.7	4	14.1
PIERCE +	8	61.6	6	181	8	33.7	6	14.9

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not reliable

**DURUM WHEAT  
DISTRICT 5  
CONRAD IRRIGATED**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES									SEVEN YEAR COMPARABLE
VARIETY	2001	2002	2003	2004	2005	2006	2007	YEARS	AVERAGE <sup>1</sup>
MOUNTRAIL * +	47.4	88.9	83.8	98.5	54.5	79.3	86.6	7	77.0
CHECK AVE	47.4	88.9	83.8	98.5	54.5	79.3	86.6	7	77.0
VIC	37.8	71.5	64.5	80.1	44.1	0.0	0.0	5	61.5
MONROE	40.6	65.1	63.2	51.8	48.3	0.0	0.0	5	55.5
KYLE	45.2	79.1	57.0	84.9	43.9	79.1	0.0	6	66.3
MUNICH +	50.1	92.6	73.8	97.3	46.8	0.0	0.0	5	74.4
BEN +	43.6	72.8	73.3	84.4	46.4	0.0	0.0	5	66.1
MAIER +	45.3	85.4	79.2	91.8	51.9	78.2	0.0	6	73.5
PLAZA +	44.1	100.5	65.8	101.8	52.9	85.7	0.0	6	76.7
LEB SOCK +	42.3	83.3	72.8	90.7	50.1	0.0	0.0	5	70.0
AC AVONLEA * +	48.1	91.5	76.5	95.1	50.3	85.1	0.0	6	76.0
ALZADA * (P)+	49.0	93.6	82.1	91.2	55.3	81.1	83.4	7	76.5
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	76.6	85.6	2	
GRENORA +	0.0	0.0	0.0	0.0	0.0	83.7	88.4	2	
DIVIDE +	0.0	0.0	0.0	0.0	0.0	83.0	78.9	2	
DILSE +	0.0	0.0	76.9	87.3	46.6	75.9	0.0	4	69.9
ALKABO +	0.0	0.0	0.0	0.0	0.0	75.1	87.8	2	
PIERCE +	0.0	0.0	80.3	89.7	51.8	84.9	89.8	5	75.8

**2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES**

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (183 = JULY 2)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	7	61.9	7	181	7	36.1	7	12.6
CHECK AVE	7	61.9	7	181	7	36.1	7	12.6
KYLE	5	62.3	5	181	5	39.8	5	13.9
VIC	5	61.8	5	178	5	37.2	5	13.8
MONROE	6	61.8	6	183	6	40.8	6	13.5
MUNICH +	5	61.5	5	180	5	34.5	5	13.6
BEN +	5	62.5	5	181	5	37.2	5	13.7
MAIER +	6	62.8	6	180	6	33.5	6	13.4
PLAZA +	6	61.6	6	181	6	30.0	6	12.9
LEB SOCK +	5	62.2	5	180	5	35.7	5	13.7
AC AVONLEA * +	6	62.2	6	180	6	36.5	6	13.7
ALZADA * (P)+	7	62.5	7	179	7	30.9	7	13.3
STRONGFIELD	2	62.5	2	183	2	36.1	2	13.0
GRENORA +	2	61.9	2	181	2	34.2	2	12.9
DIVIDE +	2	62.7	2	182	2	37.1	2	13.1
DILSE +	4	62.5	4	182	4	35.9	4	13.8
ALKABO +	2	62.7	2	182	2	36.6	2	12.8
PIERCE +	5	63.0	5	182	5	38.3	5	13.2

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not reliable

**DURUM WHEAT  
DISTRICT 6  
SIDNEY DRYLAND**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES												TEN YEAR COMPARABLE AVERAGE <sup>1</sup>
VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YEARS	
MOUNTRAIL * +	58.2	36.9	53.9	54.2	52.2	34.4	51.9	31.5	29.8	57.3	10	46.0
CHECK AVE	58.2	36.9	53.9	54.2	52.2	34.4	51.9	31.5	29.8	57.3	10	46.0
VIC	41.8	35.5	50.4	48.8	46.8	0.0	0.0	0.0	0.0	0.0	5	40.3
MONROE	35.8	34.6	49.3	52.7	50.4	0.0	0.0	0.0	0.0	0.0	5	40.1
KYLE	53.83	37.8	51.0	54.8	50.9	29.5	0	0.0	0.0	0.0	6	44.1
MUNICH +	49.1	34.7	49.8	58.9	47.8	0.0	0.0	0.0	0.0	0.0	5	43.3
BEN +	48.0	35.4	52.3	53.7	52.2	0.0	0.0	0.0	0.0	0.0	5	43.5
MAIER +	45.6	37.3	55.2	59.4	50.8	32.2	0.0	0.0	0.0	0.0	6	44.6
PLAZA +	50.8	36.8	51.4	56.3	48.6	28.8	0.0	0.0	0.0	0.0	6	43.3
LEBSOCK +	50.5	38.2	53.3	50.9	54.3	0.0	0.0	30.8	0.0	0.0	6	44.6
AC AVONLEA * +	50.4	34.5	53.8	61.9	47.1	33.8	0.0	0.0	0.0	0.0	6	44.7
ALZADA (P)+	31.5	42.2	54.7	54.3	45.7	33.3	41.6	34.9	28.4	51.9	10	41.9
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	31.6	42.3	35.0	30.6	59.5	5	44.7
GRENORA +	0.0	0.0	0.0	0.0	0.0	32.4	48.8	32.4	30.0	58.3	5	45.4
DIVIDE +	0.0	0.0	0.0	0.0	0.0	32.9	39.7	32.2	27.8	56.1	5	42.4
DILSE +	0.0	0.0	52.6	53.8	49.7	34.2	0.0	32.5	26.9	0.0	6	44.9
ALKABO +	0.0	0.0	0.0	0.0	0.0	35.8	47.6	32.1	27.3	55.9	5	44.6
PIERCE +	0.0	0.0	52.7	54.0	47.6	34.4	46.5	29.7	27.3	55.6	8	43.9

2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (173 = JUNE 22)		PLANT HEIGHT (INCHES)		PROTEIN %	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	10	60.1	7	174	10	28.5	7	13.4
CHECK AVE	10	60.1	7	174	10	28.5	7	13.4
VIC	5	61.2	5	173	5	30.8	2	14.5
MONROE	5	60.0	5	171	5	28.8	2	14.4
KYLE	6	60.8	6	175	6	33.2	3	13.3
MUNICH +	5	59.6	5	173	5	26.2	2	14.0
BEN +	5	61.3	5	173	5	29.0	2	14.3
MAIER +	6	60.8	6	174	6	27.8	3	14.1
PLAZA +	6	59.7	6	175	6	25.0	3	13.4
LEBSOCK +	6	61.5	5	173	6	28.5	3	13.6
AC AVONLEA * +	6	60.6	6	173	6	29.1	3	13.8
ALZADA (P)+	10	60.2	7	171	10	24.9	7	13.4
STRONGFIELD	5	59.7	2	175	5	30.3	5	14.3
GRENORA +	5	60.0	2	174	5	28.6	5	13.4
DIVIDE +	5	60.5	2	174	5	29.7	5	13.0
DILSE +	6	60.5	5	174	6	29.0	4	13.5
ALKABO +	5	60.9	2	174	5	28.6	5	13.4
PIERCE +	8	60.5	5	174	8	28.9	6	13.5

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not reliable

**DURUM WHEAT  
DISTRICT 6  
SIDNEY IRRIGATED**

2001-2010 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	YEARS	TEN YEAR
												COMPARABLE AVERAGE <sup>1</sup>
MOUNTRAIL * +	56.3	70.5	125.3	62.4	61.2	88.3	55.7	109.1	99.9	61.2	10	79.0
CHECK AVE	56.3	70.5	125.3	62.4	61.2	88.3	55.7	109.1	99.9	61.2	10	79.0
VIC	49.8	66.6	109.3	53.3	49.1	0.0	0.0	0.0	0.0	0.0	5	69.0
MONROE	54.8	66.0	100.0	53.4	62.4	0.0	0.0	0.0	0.0	0.0	5	70.8
KYLE	29.0	65.7	89.3	61.5	64.6	73.5	0.0	0.0	0.0	0.0	6	65.3
MUNICH +	54.0	67.8	123.0	64.1	66.6	0.0	0.0	0.0	0.0	0.0	5	78.9
BEN +	58.4	66.2	112.3	74.7	65.0	0.0	0.0	0.0	0.0	0.0	5	79.2
MAIER +	56.3	72.1	117.6	56.9	51.1	78.5	0.0	0.0	0.0	0.0	6	73.6
PLAZA +	57.7	64.4	118.4	56.1	58.8	67.6	0.0	0.0	0.0	0.0	6	72.0
LEB SOCK +	53.2	62.1	112.5	60.1	71.2	0.0	0.0	77.7	0.0	0.0	6	71.2
AC AVONLEA * +	48.2	60.8	106.0	66.7	48.2	81.5	0.0	0.0	0.0	0.0	6	70.0
ALZADA (P)+	46.4	64.9	100.6	64.6	65.7	63.1	25.7	86.5	77.3	27.0	10	62.2
STRONGFIELD	0.0	0.0	0.0	0.0	0.0	69.3	43.2	89.1	101.9	59.3	5	69.2
GRENORA +	0.0	0.0	0.0	0.0	0.0	83.4	54.3	82.8	106.6	70.5	5	75.8
DIVIDE +	0.0	0.0	0.0	0.0	0.0	86.1	47.4	94.1	104.7	73.2	5	77.3
DILSE +	0.0	0.0	110.8	70.3	54.8	84.4	0.0	93.7	98.1	0.0	6	74.1
ALKABO +	0.0	0.0	0.0	0.0	0.0	87.2	45.9	109.1	96.7	59.4	5	76.0
PIERCE +	0.0	0.0	115.5	65.3	70.9	88.4	41.6	82.2	100.5	71.2	8	75.7

2001-2010 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (177 = JUNE 26)		PLANT HEIGHT (INCHES)		PROTEIN %	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	10	61.2	7	179	10	34.8	7	13.4
CHECK AVE	10	61.2	7	179	10	34.8	7	13.4
VIC	5	61.3	5	178	5	38.1	2	13.6
MONROE	5	60.7	5	175	5	36.1	2	13.6
KYLE	6	60.9	6	180	6	42.4	3	13.7
MUNICH +	5	60.6	5	177	5	32.2	2	13.1
BEN +	5	61.9	5	178	5	37.0	2	13.1
MAIER +	6	61.5	6	178	6	35.1	3	13.8
PLAZA +	6	61.0	6	179	6	30.4	3	12.9
LEB SOCK +	6	62.0	5	177	6	34.2	3	13.0
AC AVONLEA * +	6	61.1	6	177	6	36.2	3	14.0
ALZADA (P)+	10	59.5	7	175	10	28.8	7	13.9
STRONGFIELD	5	60.7	2	178	5	34.0	5	14.0
GRENORA +	5	61.0	2	176	5	31.7	5	13.7
DIVIDE +	5	61.6	2	179	5	35.6	5	13.4
DILSE +	6	61.7	5	178	6	34.4	4	13.6
ALKABO +	5	61.9	2	177	5	33.4	5	13.3
PIERCE +	8	61.9	5	178	8	36.0	6	13.5

\* Recommended variety, (P) private variety, + Protected under the Plant Variety Protection Act

<sup>1</sup> Comparable averages when using less than three years data are not reliable



**SPRING WHEAT VARIETY**

**Agronomic Characteristics**

Variety	Origin	Year Released	Milling <sup>1/</sup>	Baking <sup>1/</sup>	Plant Height	Maturity	Lodging	Shattering
<b>HARD RED</b>								
Amidon	North Dakota	1988	5	4	Tall	Medium	M	M
AP604 CL	AgriPro Associates	2007	4	4	Semidwarf	Early	R	-
Choteau	Montana	2003	4	4	Semidwarf	Medium	R	R
Conan	WestBred, LLC.	1997	3	3	Semidwarf	Medium	R	-
Corbin	WestBred, LLC.	2006	3	3	Semidwarf	Early	R	-
Freyr	AgriPro Wheat	2004	3	3	Semidwarf	l-early	R	-
Hank	WestBred, LLC.	1999	3	5	Semidwarf	Early	R	R
Jedd	WestBred, LLC.	2008	3	3	Semidwarf	Early	R	-
Kelby	AgriPro Wheat	2006	3	3	Semidwarf	Early	R	-
Kuntz	AgriPro Wheat	2007	3	3	Semidwarf	Med-early	R	-
McNeal	Montana	1995	3	5	Semidwarf	Mid-Late	R	R
Norpro	AgriPro Wheat	2000	3	4	Semidwarf	Medium	R	R
ONeal	WestBred, LLC.	2008	4	4	Semidwarf	Medium	R	-
Outlook	Montana	2003	3	4	Semidwarf	Mid-Late	R	R
Reeder	North Dakota	1999	4	4	Semidwarf	Med-early	MR	-
Scholar	Montana	1998	5	4	Med-Tall	Mid-Late	MR	-
Sy Tyra	Syngenta Seeds	2010	3	3	Semidwarf	Med-early	R	-
Vida	Montana	2005	4	4	Semidwarf	Mid-late	MR	R
Volt	WestBred, LLC.	2008	3	2	Semidwarf	Mid-late	R	-
WB Gunnison	WestBred, LLC.	2011	3	3	Semidwarf	Early	R	-

<sup>1/</sup> Superior = 5, Inferior = 1; Legend: R = Resistant , MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, - = unknown

**HARD RED SPRING WHEAT VARIETY  
Disease Reaction**

Variety	Stripe rust	Leaf rust	Stem rust	Leaf spot Complex
Amidon	-	R	R	M
AP640 CL	-	MS	R	MR
Choteau	MS	-	R	MR
Conan	R	R	R	MR
Corbin	R	-	-	-
Fortuna	S	R	R	S
Freyr	MR	MR	MR	R
Hank	MR	R	R	MR
Jedd	MS	-	-	-
Kelby	MS	R	R	R
Kuntz	MS	MR	R	-
McNeal	S	MS	MR	R
Norpro	S	MR	R	S
ONeal	S	-	-	MR
Outlook	MS	MR	R	MR
Reeder	MR	MR	R	MR
Scholar	MR	MR	R	S
SY Tyra	-	-	-	-
Vida	MR	MR	MS	MR
Volt	R	-	-	R
WB Gunnison	MR	-	-	-

R = Resistant , MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, - = unknown

## DURUM VARIETY

Variety	Origin	Agronomic Characteristics			Disease Reaction			
		Year Released	Maturity	Plant Height	Stripe Rust	Leaf Rust	Stem Rust	Leaf Spot Complex
AC Avonlea	AG Canada	1999	Medium	Medium	-	R	R	MS
Alzada	WestBred, LLC.	2004	Early	Semidwarf	R	R	-	MS
Alkabo	North Dakota	2005	Medium	Medium	-	R	R	MR
Ben	North Dakota	1996	Medium	Medium	MS	R	R	R
Dilse	North Dakota	2002	Late	Medium	-	R	R	MS
Divide	North Dakota	2005	Medium	Medium	-	R	R	MR
Grenora	North Dakota	2005	M Early	M tall	-	R	R	MR
Kyle	AG Canada	1984	Medium	Tall	-	MR	R	MS
Lebsock	North Dakota	1999	Medium	Medium	-	R	R	MS
Maier	North Dakota	1999	Med-late	Medium	-	R	R	MS
Monroe	North Dakota	1985	Early	Tall	MS	R	R	MS
Mountrail	North Dakota	1999	Late	Medium	-	R	R	MS
Munich	North Dakota	1995	Medium	Medium	-	R	R	-
Pierce	North Dakota	2001	Medium	Medium	-	R	R	MS
Plaza	North Dakota	1999	Late	Semidwarf	-	R	R	MR
Strongfield	AG Canada	2004	Medium	Medium	-	R	R	R
Vic	North Dakota	1979	Mid-Early	Tall	MR	MR	R	MR

R = Resistant , MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, - = unknown

2009-2010 Stem solidness, sawfly damage and grain yields under sawfly pressure

STEM SOLIDNESS					
VARIETY	BOZEMAN			MOCCASIN	AVE
	2009 DRY	2009 IRR	2010 DRY	2010	
FORTUNA	19.8	15.6	17.7	19.5	18.2
MCNEAL	5.4	6.4	7.1	7.3	6.6
REEDER	5.4	5.3	6.3	7.9	6.2
OUTLOOK	6.1	6.5	7.1	8.4	7.0
CHOTEAU	23.4	21.2	20.1	24.1	22.2
VIDA	8.1	9.0	13	9.6	9.9
HANK	6.5	5.5	8.1	9.3	7.4
CONAN	8.7	7.3	10.1	11.5	9.4
CORBIN	8.4	6.8	9.4	10.9	8.9
VOLT	5.9	5.4	8.8	7.4	6.9
ONEAL	5.5	5.7	8.4	7.8	6.9
JEDD	6.9	5.9	7.8	9.9	7.6
FREYR	6.4	5.8	9.5	8.3	7.5
KELBY	5.6	5.5	6.1	8.7	6.5
KUNTZ	6.2	5.5	6.3	8.1	6.5
MOTT	14.2	15.9	17	16	15.8

2010 SAWFLY DAMAGE (% STEMS CUT)							
	LORING	TURNER	NO.HAVRE	MOCC NO-TILL	DENTON	GERALDINE	AVE
FORTUNA	11.7	8.3	2.3	1.7	1.3	1.3	4.4
MCNEAL	20.0	25	7.0	4.0	2.3	7.8	11.0
REEDER	10.3	16.7	10.0	5.3	7.0	6.3	9.3
OUTLOOK	13.3	21.7	6.7	5.7	5.0	8.7	10.2
CHOTEAU	8.3	13.3	3.7	1.3	2.7	2.3	5.3
VIDA	10.0	18.3	6.7	2.0	1.3	3.3	6.9
HANK	5.0	8.3	6.7	7.7	9.0	12.7	8.2
CONAN	1.0	3.7	1.0	1.7	1.0	3.0	1.9
CORBIN	5.3	10.3	1.0	1.7	1.0	2.3	3.6
VOLT	15.0	21.7	13.3	15.0	21.7	27.7	19.1
JEDD	2.3	3.7	2.3	4.0	4.7	9.3	4.4
KELBY	3.7	8.7	3.7	5.3	8.3	4.0	5.6
MOTT	1.0	3.7	1.0	1.0	0.7	2.7	1.7

2010 GRAIN YIELDS (BU/AC)							
VARIETY	LORING	TURNER	NO.HAVRE	MOCC NO-TILL	DENTON	GERALDINE	AVE
FORTUNA	26.4	24.4	55.5	34.1	31.9	35.4	34.6
MCNEAL	29.3	32.7	55.0	29.8	30.2	25.6	33.8
REEDER	32.9	30.9	49.5	28.1	27.9	27.6	32.8
OUTLOOK	28.6	26.9	50.9	32.8	31.8	30.7	33.6
CHOTEAU	29.6	32.6	56.9	26.5	37.0	32.0	35.8
VIDA	36.9	25.6	55.4	30.4	36.4	34.9	36.6
HANK	30.2	36.5	55.3	27.3	24.1	24.7	33.0
CONAN	22.8	31.4	51.5	31.8	32.0	31.7	33.5
CORBIN	30.5	32.7	58.6	31.1	35.1	35.9	37.3
VOLT	34.7	27.2	50.7	23.7	22.2	23.3	30.3
ONEAL	36.3	37.1	59.6	33.0	37.5	35.3	39.8
JEDD	36.2	41.5	60.9	28.8	30.9	27.5	37.6
FREYR	26.1	31.6	48.8	25.1	25.5	24.3	30.2
KELBY	35.1	32.9	42.6	24.9	24.1	30.1	31.6
KUNTZ	30.1	32.4	50.5	21.8	20.6	20.2	29.3
MOTT	32.8	30.3	51.2	32.9	32.5	33.2	35.5

**NURSERY MANAGEMENT INFORMATION FOR THE 2010 ADVANCED SPRING WHEAT NURSERY**

<b>DISTRICT</b>	<b>Bozeman irrigated 2</b>	<b>Bozeman dryland 2</b>	<b>Havre 5</b>	<b>Sidney dryland 6</b>	<b>Sidney irrigated 6</b>	<b>Kalispell 1</b>	<b>Moccasin 4</b>	<b>Huntley dryland 3</b>	<b>Conrad dryland 5</b>
<b>Location:</b>									
Latitude °N	45° 41'	45° 41'	48° 30'	47° 40'	47° 40'	48° 10'	47° 03'	45° 55'	48° 18.4'
Longitude °W	111° 00'	111° 00'	109° 48'	104° 08'	104° 08'	114° 15'	109° 57'	108° 15'	111° 55.5'
Elevation (ft)	4772	4772	2689	2200	1950	2890	4300	3200	3700
<b>Precipitation:</b>									
Avg. moisture (in.) <sup>1</sup>	16.05	16.05	11.92	13.91	13.91	20.16	15.30	13.31	11.35
2009-10 moisture (in.)	17.35	17.35	14.61	20.43	20.91	21.14	17.65	16.19	15.52
2009-10 Moisture(Apr.-July)	9.96	9.96	9.69	13.05	12.09	12.2	8.54	8.74	11.14
Avg. moisture (Apr.-July)	8.38	8.38	6.75	8.07	8.07	9.16	8.55	6.95	7.05
Irrigation water applied (in.)	0.00				flood				
<b>Previous Crop:</b>									
2007	fallow	fallow	Fallow	Sm.grains	Sm.grains	alfalfa	-	-	-
2008	Winter wheat	Winterwheat	Oilseed	Safflower	Sugarbeets	alfalfa	Barley	-	-
2009	fallow	Fallow	ChemFallow	Fallow	Safflower	alfalfa	Chem.fallow	Chem.fallow	Fallow
<b>Soil Type:</b>									
Series	Amsterdam	Amsterdam	Joplin	Williams	Savage	Creston	Judith-Danvers	Fort Collins	Scobey
Texture <sup>2</sup>	SiL	SiL	CL	CL	SiC	SiL	CL	SiL	CL
<b>Fertilization:</b>									
Available N (lb/ac)	133	133	141	89	75	-	-	-	125/52/20
Applied N-P-K (actual lb/ac)	90/0/0	90/0/0	70/40/25	0	36/92/0	97/30/120/24	66 lb N	50/0/0	120/20/20
Planting date	4/25/10	4/26/10	4/21/10	4/21/10	5/12/10	4/23/10	4/12/10	3/29/10	4/5/10
Harvest date	HAILED OUT	HAILED OUT	9/8/10	8/11/10	8/25/10	9/29/10	8/19/10	8/12/10	9/26/10

<sup>1</sup> Moisture September- August, Sidney is October- September

<sup>2</sup> C= clay, L= loam, Sa=sand, Si=silt or silty, F=fine and VF=veryfine

**ADDITIONAL DESCRIPTIVE INFORMATION ON  
SPRING WHEAT VARIETIES  
*Hard Red Spring Wheats***

**AMIDON** - An awned, standard height hard red spring wheat cooperatively developed and released by North Dakota Agricultural Experiment Station and United States Department of Agriculture (USDA) in 1988. It was developed from the cross SU-28-1\*2/3/Lew//Tioga\*2/RL6043 and tested as ND606. It is similar to Stoa in heading date and plant height with a tendency to greater lodging. It is resistant to leaf rust and stem rust, with a leaf spotting rating better than Stoa and Len. Shattering resistance and test weight have been rated as satisfactory. Amidon has been yielding consistently more than Stoa when yields were below 30 bu/A. Amidon has exhibited an intermediate level of stem solidness. Amidon has a higher protein than Newana, and overall milling and baking qualities are equal to or better than Newana. The kernel characteristics do not meet spring wheat classing requirements of the Federal Grain Inspection Service.

**AP604 CL** - AP604 CL was developed and released to AgriPro Associates in 2007. It is a CLEARFIELD (CL) wheat derived from a cross between two CL lines, AP601 CL and AP602 CL. AP604 CL contains patented traits and will be managed under a Stewardship Agreement. AP604 CL is a white chaffed, hollow stemmed wheat with an intermediate semi dwarf height. AP604 CL heads 3 days earlier than Reeder and yields competitively on dryland locations across Montana. In disease nurseries in North Dakota, AP604 CL shows moderate resistance to foliar diseases but shows moderate susceptibility to leaf rust and fusarium head blight. Test weight and protein are good and it exhibits acceptable milling and baking quality. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**CHOTEAU** – Developed and released by the Montana Agricultural Experiment Station in 2003. Choteau was derived from the cross of MT 9401/MT 9328. Choteau is a semidwarf hard red spring wheat with solid stems conferring tolerance to the wheat stem sawfly. The spike is lax and tapered with white awns and glumes. Kernels are red, ovate with a medium crease and brush. Choteau is resistant to the prevalent race of stem rust in Montana. Choteau has good grain protein and acceptable milling and baking quality. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**CONAN** - Developed and released by WestBred, LLC. in 1999. Conan was selected from the cross WestBred Rambo x WestBred 906R. Conan is a sawfly tolerant, white chaffed, semidwarf, hard red spring wheat. The spike is mid-dense, strap shaped and awned. The seeds are elliptical with rounded cheeks. The brush is long and collared. Conan is similar to WestBred Rambo in yield, but is 2 to 4 days earlier, .5 to .9 percentage points higher in protein, and has good milling and baking qualities. Conan is resistant to the prevalent races of stripe rust and leaf rust, and has shown good tolerance to Septoria and Tan spot. This variety is protected under the Plant Variety Protection Act.

**CORBIN** - Developed and released by WestBred, LLC in 2006. Corbin is a hard red spring wheat derived from the cross Border x Conan. This line is best adapted to the wheat stem sawfly areas of Montana. Corbin is a one gene semi-dwarf with moderately strong straw. Disease/sawfly ratings for Corbin show it to be moderately resistant to stripe rust and similar to Conan for sawfly tolerance. The head is strap shaped, lax, awned and inclined at maturity. The plant color is green and the leaves and stem have slight waxy coating. The chaff color is white. The glume is acuminate and the shoulders are elevated. The seed is red and elliptical with rounded cheeks. The brush is large with medium length hair and collared. The embryo is mid-sized, the crease is mid-wide and mid-deep. Milling and baking quality is acceptable for the market class being grown in Montana, as determined by the MSU Quality Lab. This variety is protected under the Plant Variety Protection Act.

**FORTUNA** - Developed from the cross, Rescue-Chinook x (Frontana x Kenya 58-Newthatch), made at North Dakota Agricultural Experiment Station with the Crops Research Division of USDA cooperating. A joint North Dakota-Montana release was made in 1966. Fortuna is beardless with white chaff and straw. It is a solid-stemmed variety, resistant to the wheat stem sawfly. Fortuna is susceptible to Septoria and black chaff fungus. It is a relatively high yielding variety with superior milling properties, and has acceptable baking properties.

**FREYR** - Developed from the cross “Sonja/Vance/3/Sumai3/Dalen” and released by AgriPro in 2003. It is a white chaffed, hollow stemmed, hard red spring variety. Freyr has exhibited consistently high yields across Montana in 2004 and 2005 testing. It is intermediate in height, similar to Reeder, with moderately strong straw strength. Maturity is medium-early, similar to Reeder and two days earlier than McNeal. Test weight is very good. Protein is medium averaging 0.2% below McNeal. Freyr has the best rating available for fusarium head blight (scab) at moderately resistant. It is moderately resistant to the prevalent races of stem, leaf and stripe rust. It has good tolerance to leaf spotting diseases, such as tan spot and septoria. Freyr has acceptable overall breadmaking quality. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**HANK** – Developed by WestBred, LLC. and released in 2000. Hank was derived from the cross of WestBred 926/WestBred 936. Hank is an early maturing white chaffed, awned, semidwarf hard red spring wheat. Seed of Hank is elliptical and long with rounded cheeks. The brush is large with long hair and the crease is medium in depth and width. Hank is resistant to stem rust, leaf rust, stripe rust and powdery mildew and has shown good tolerance to Dry Land Root Rot. Hank has good straw strength and is tolerant to shattering. Hank is tolerant to races of the Hessian fly found in the PNW region. Hank is susceptible to damage by the wheat stem sawfly. Hank is tolerant to the wild oat herbicide ‘Avenge’. The milling and baking qualities of Hank are acceptable. Hank is protected under the Plant Variety Protection Act (Certificate # 200000191).

**JEDD** – Jedd was developed by WestBred, LLC from the cross ‘4\*Hank/SWP965-001/Teal11A’ and released in 2008. Jedd contains two patented genes (L1B S653N and L1D S653N) that confer tolerance to the BASF grass herbicide “Beyond” (imazimox). Jedd is semidwarf with good lodging resistance and is medium in heading and maturity. Jedd yields well and has good test weight. Jedd is moderately susceptible to races of stripe rust in western Montana and has good tolerance to Hessian fly biotypes in Washington, but the reaction is unknown for Montana biotypes. Jedd has average grain protein and acceptable milling and baking quality. Application for the Plant Variety Protection Act will be submitted.

**KELBY** – Kelby was developed by AgriPro and released to AgriPro Associates in 2006. Kelby was derived from the cross ‘N97-00117/3/n92-0098//Sumai 3/Dalen’. It is a hollow stemmed, semidwarf, hard red spring wheat. Kelby is an early heading spring wheat and maintains a good test weight across locations. Kelby has the Asian background (Sumai 3) for fusarium head blight resistance giving it an intermediate scab tolerance. It is resistant to stem and leaf rust and shows good tolerance to leaf spotting diseases. It shows moderate susceptibility to stripe rust. Kelby is susceptible to damage by the wheat stem sawfly. Grain protein of Kelby is good and the milling and baking quality is acceptable. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**KUNTZ** – Kuntz was developed by AgriPro and released to AgriPro Associates in 2007. Kuntz was derived from the cross 'N97-0214/3/N93-0338//Sumai3/Dalen'. It is a hollow stemmed, semidwarf, hard red spring wheat with very good straw strength. Kuntz has the Asian background (Sumai 3) for fusarium head blight resistance giving it an intermediate scab tolerance. Maturity of Kuntz is medium-early, similar to Reeder and two days earlier than McNeal. Test weight is average compared to other check varieties and the protein averages slightly lower than checks. Kuntz is resistant to stem rust, moderately resistant to leaf rust and shows good tolerance to leaf spotting diseases. It shows moderate susceptibility to stripe rust and is susceptible to damage by the wheat stem sawfly. Milling and baking quality of Kuntz is fair. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**McNEAL** - Developed from the cross RS6880/Glenman made by the Montana Agricultural Experiment Station. It was released in March 1995. McNeal is a semidwarf, hard red spring wheat with red chaff and tan straw. The spike is awned and mid-dense. The glumes are reddish brown with some white on the outer edges of the lemma and palea. Kernels are red, ovate, medium length with a short brush. The cheeks are slightly rounded with a medium crease. Under Montana growing conditions McNeal is moderately resistant to lodging. It is moderately resistant to prevalent races of stem rust and wheat streak mosaic virus. McNeal is moderately susceptible to leaf rust and stripe rust. It is susceptible to Russian wheat aphid and the wheat stem sawfly. Under some climatic conditions one white chaffed plant per 2,000 plants may appear in the field. McNeal's milling and baking qualities are acceptable by industry.

**NORPRO** - Developed from the cross "Norseman/2369//Dalen" and released in 2000 by AgriPro Wheat. Norpro is a hard red spring wheat that is white chaffed, awned and hollow stemmed. In Montana State tests during the 2002-4 seasons, Norpro exhibited good yielding ability especially under irrigation. It is a semidwarf with very good lodging resistance. It has medium maturity and good test weight. It has resistance to stem rust and moderate resistance to leaf rust. It has very good tolerance to foliar diseases. Protein levels have been slightly lower (.3%) than McNeal. Norpro has acceptable breadmaking quality. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**ONEAL**- ONeal is a hard red spring wheat developed by WestBred, LLC from the cross 'McNeal/WestBred 906R' and was released in 2008. ONeal is a hollow stemmed, semidwarf wheat with red chaff. ONeal heads about the same as McNeal and one day later than Choteau. ONeal is susceptible to stripe rust. Test weight of ONeal is average with grain protein, milling and baking traits similar to McNeal. Application for the Plant Variety Protection Act will be submitted.

**OUTLOOK** – Developed from the cross of PI372129/Amidon//Amidon/3/MT 9312 and released by the Montana Agricultural Experiment Station in 2003. It is a semidwarf hard red spring wheat with good resistance to the Russian wheat aphid and has been one of the highest yielding wheats in our Advanced spring wheat nursery across Montana from 2000-2003. Outlook has middense, erect, tapering heads with red awns and glumes. Outlook shows good resistance to prevalent races of stem rust in Montana. Outlook has acceptable milling and baking quality. Outlook is protected under the Plant Variety Protection Act (Certificate # 200400008) and can only be sold or advertised by variety name as a class of certified seed.



**REEDER** - Developed by the North Dakota Agricultural Experiment Station, the cross involved a relative of 'Stoa', a NDSU experimental line and germplasm from a breeding program in Brazil. Reeder was released in 1999. Reeder is an awned, semidwarf hard red spring wheat. Reeder yields well especially in northeastern Montana and western North Dakota. Reeder has resistance to the upper midwest races of stem and leaf rust. Milling and baking qualities are acceptable. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**SCHOLAR** - Developed from the cross, MT8808/'Marberg', made by the Montana Agricultural Experiment Station. Scholar was released in 1998. It is a good yielding hard red spring wheat with moderate resistance to the wheat stem sawfly. Scholar is awned with white chaff and straw and is intermediate in height. Scholar has good resistance to Septoria and stem rust, is moderately resistant to leaf rust, and moderately susceptible to stripe rust. Scholar has good milling and baking qualities. This variety is protected under the Plant Variety Protection Act.

**SY TYRA** - a hard red spring wheat bred by Montana State University and developed for release by Syngenta Seeds, Inc. It originated from a marker assisted backcross project with the final cross as "Choteau/4\*Norpro". It has a semi-solid stem which confers some tolerance to the wheat stem sawfly. Yield performance has been very good statewide. Test weight has been very high averaging one pound heavier than Choteau. It has medium maturity similar to Reeder. It is a short semidwarf with very good straw strength. Protein levels have been slightly lower (.3%) than Vida. Overall milling and baking characteristics are acceptable. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**VIDA** - Vida was derived from the cross of Scholar/Reeder made in 1998 by the Montana Agricultural Experiment Station. Vida was released in 2005. Vida is a high yielding hard red spring with moderate resistance to leaf and stripe rust but is moderately susceptible to stem rust. Vida is a semidwarf wheat with white glumes and awns. Kernels are red, ovate with rounded cheeks and a mid-deep crease. Vida has good milling and baking characteristics. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**VOLT** – Volt is a hard red spring wheat developed by Dr. Peter Franck with the plant breeding company, PZO Pflanzenzucht Oberlimpurg, in Germany and has been thoroughly tested by WestBred, LLC and released in 2008. Volt is a high yielding semidwarf wheat under irrigated conditions with good tolerance to stripe rust and fusarium head blight. Volt heads four days later than Hank. Volt is a hollow stemmed wheat susceptible to wheat stem sawfly damage. Volt has fair milling and baking quality. Application for the Plant Variety Protection Act will be submitted.

**WB GUNNISON** - Hard Red Spring Wheat developed by WestBred from the cross Conan/Agawam and released in 2011. WB-Gunnison is being released as a high quality hard red spring wheat that is intended to replace Conan and Corbin acres. For the 3 year period 2008 - 2010, (22 locations), the average per acre yield of WB-Gunnison in the MSU Intrastate Trials is 55.5 bushels, compared to Conan at 51.3 bushels and Corbin at 55.7 bushels. The average test weight has been 60.6 lbs, which is .5 pounds heavier than Conan and .6 lbs heavier than Corbin. Protein levels have averaged 13.8%, which is .4 percentage points lower than Conan and .2 percentage points lower than Corbin. The average plant height of WB-Gunnison is 30 inches, which is similar to Conan and Corbin. The average heading date of WB-Gunnison is similar to Corbin and 1 day earlier than Conan. Milling and baking quality data indicate that WB-Gunnison has acceptable quality. Disease/sawfly ratings for WB-Gunnison show it to be MR to stripe rust. WB-Gunnison is a hollow stemmed variety, but has high yields under wheat stem sawfly pressure due to relative non-preference in small plot nursery trials.

## **Durum Wheats**

**AC AVONLEA** - Released by Ag Canada in 1997. AC Avonlea has medium maturity, straw strength and height. It has good resistance to stem and leaf rusts. It has a good overall durum milling and processing quality. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**ALKABO** - Was selected from the cross D901247/D89263 and released by the North Dakota Agricultural Experiment Station in cooperation with the USDA-ARS in 2005. It is a standard height variety with medium maturity and is day length-sensitive. It has white culm, midlong spikes with white awns and glumes. It is resistant to races of leaf and stem rust found in North Dakota. It has moderate resistance to tan spot and Fusarium head blight. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**ALZADA** - Developed from the cross 'Mohawk/Kofa' and released in 2004 by WestBred, LLC. Alzada was tested extensively by WestBred, LLC trials in Arizona and in irrigated and dryland Pacific Northwest locations prior to testing in the Montana State University statewide trials. Alzada is an early, non-daylength sensitive durum that produces yields combined with very high quality grain when grown in northern durum areas. Alzada is a semidwarf variety with excellent straw strength, good tolerance to sawfly and a good foliar disease package. Alzada has medium protein levels and with strong gluten characteristics, Alzada produces a bright yellow semolina from which high quality durum products can be made. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**BEN** - Developed from the cross of D8024/Monroe by the North Dakota Agricultural Experiment Station. Ben is a high-yielding, high-test weight, stiffed-strawed variety. It is a day length-sensitive durum. Ben has long erect spikes, is awned, mid-dense and oblong. Ben is a medium tall, medium maturing variety. It has three per 10,000 plants which are taller than the average height of the crop. Depending on the environment Ben may have one per 1000 bronze-colored chaffed plants in a field. Ben is resistant to stem rust, leaf rust and tan spot. It is moderately resistant to Fusarium head blight. Ben is protected under the Plant Variety Protection Act of 1994 and can only be sold or advertised by variety name as a class of certified seed.

**DILSE** – Was selected from the cross 'Maier'/D88273 and released by the North Dakota Agricultural Experiment Station in cooperation with the USDA-ARS in 2002. It is a standard height, late-maturing variety that is day length-sensitive. It has white culm, midlong spikes with white awns and glumes. It is resistant to races of leaf and stem rust found in North Dakota. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**DIVIDE** - Was selected from the cross "Ben'/'Belzer' and released by the North Dakota Agricultural Experiment Station in cooperation with the USDA-ARS in 2005. It is a standard height variety with medium maturity and is day length-sensitive. It has white culm, midlong spikes with white awns and glumes. It is resistant to races of leaf and stem rust found in North Dakota. It has moderate resistance to tan spot and Fusarium head blight. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**GRENORA** -Was selected from the cross D901260/D901419 and released by the North Dakota Agricultural Experiment Station in cooperation with the USDA-ARS in 2005. It is a tall standard height variety with medium to early maturity and is day length-sensitive. It has white culm, midlong spikes with white awns and glumes. It is resistant to races of leaf and stem rust found in North Dakota. It has moderate resistance to tan spot and Fusarium head blight. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**KYLE** - Developed from the cross of Wakooma/2/(DT322, Blue Giant/4\*Lakota)/3/Wakooma/2/(DT320, Blue Giant/2\*Lakota) by Agriculture Canada Research Station, Swift Current, Saskatchewan. It was released in 1984. Kyle has a white glumes, glabrous spike, with long spreading awns that turn black at maturity. It has medium-sized kernels. Kyle is resistant to prevalent races of leaf and stem rust. It is moderately susceptible to tan spot and septoria leaf spot and susceptible to loose smut.

**LEBSOCK** – Lebsock was released in 1999 by the North Dakota Agricultural Experiment Station. It has good yield, high test weight and a high semolina extract. Lebsock is a stiff-strawed durum with medium height and maturity with day length sensitivity. It is resistant to stem and leaf rust and moderately resistant to Tan spot and is moderately susceptible to Fusarium head blight. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**MAIER** – The North Dakota Agricultural Experiment Station released Maier durum wheat in 1999. Maier is a late maturing, stiff-strawed, day length sensitive durum with a medium height. Maier has a good semolina extraction with strong gluten. Maier is resistant to stem and leaf rust diseases. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**MONROE** - Developed from the cross of (D6771/Rugby)/Vic by the North Dakota Agriculture Experiment Station. It was released in 1985. It is early maturing with white chaff. The kernels are large. Monroe is resistant to prevalent races of stem rust and moderately resistant to prevalent races of leaf rust. The combination of earliness and high yield makes Monroe well suited for growing in all durum areas of the state.

**MOUNTRAIL** – Developed from the cross D8479/Renville made by the North Dakota Agricultural Experiment Station which was released in 1999. Mountrail is a medium height, late maturing, stiff-strawed, day-length sensitive durum wheat. It is resistant to both leaf and stem rusts, but only moderately resistant to Tan spot and moderately susceptible to Fusarium head blight. Mountrail has a high semolina extract with strong gluten. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**MUNICH** - Developed from the cross D8030/D8016 by the North Dakota Agricultural Experiment Station and released in 1995. It is a day length sensitive durum wheat. Munich is a strong gluten durum variety. It is resistant to leaf rust and stem rust and moderately susceptible to Fusarium head blight. This variety is protected under the Plant Variety Protection act and can only be sold or advertised by variety name as a class of certified seed.

**PIERCE** - Was selected from the cross D86117/D88289 and released by the North Dakota Agricultural Experiment Station in cooperation with the USDA-ARS in 2001. It is a standard height variety with medium maturity and is day length-sensitive. It has white culm, midlong lax spikes with white awns and glumes. It is resistant to races of leaf and stem rust found in North Dakota and is moderately susceptible to Fusarium head blight. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**PLAZA** – Derived from the cross, DT606/D8291, and released in 1999 by the North Dakota Agricultural Experiment Station. It is a late maturing semi-dwarf durum. Plaza has an average protein with strong gluten. It is resistant to leaf and stem rusts. This variety is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

**STRONGFIELD** – Released by Ag Canada in 2004. Strongfield is medium in height and maturity. It shows good resistance to leaf and stem rusts prevalent across the Canadian plains, but only moderately resistant to common bunt. It exhibits good end use qualities with a high protein, low grain cadmium concentration, high yellow pigment and a moderately strong gluten content.

**VIC** - Developed from the cross, Edmore/Ward, by the North Dakota Agricultural Experiment Station cooperatively with Agricultural Research, Science and Education Administration, USDA. This variety was released to growers in 1979. It is a standard height, day length-sensitive spring durum. It has white awns and glumes. Vic is resistant to stem rust and moderately resistant to leaf rust and blackpoint. The milling, processing and cooking properties of this variety are satisfactory.

\* The asterisk is used as a part of the formulation to indicate the number of backcrosses of parents constituting the variety.

## **PLANT VARIETY PROTECTION (PVP)**

The developer of a new distinct variety may obtain protection (essentially a patent) for that variety if he/she chooses to do so, provided the variety meets the requirements of the Plant Variety Protection Act of 1970. This Act permits the owner or developer of a variety to prohibit others from selling, sexually multiplying, using for propagation for seed, or using to produce a hybrid, seed of his variety.

Two options, for plant variety protection, are available to the developer of the variety. Under the first option, the developer of the variety or his/her agent may sell either certified or uncertified seed of the variety. If the developer of the variety has reason to believe that anyone is infringing on his/her rights, he/she may resort to civil action.

The other option ("certification option") for protecting a variety utilizes the provision of Title V of the Federal Seed Act. A variety protected in this manner may be sold by variety name only as a class of certified seed.

It is the responsibility of the seller to inform the buyer if the variety is protected. Each container of seed sold should be labeled with a tag indicating the type of protection which the owner has. Under the first option, the label will state: "Unauthorized Propagation Prohibited - U.S. Protected Variety."

If the owner of the variety has chosen the other option for variety protection, the label will state, "Unauthorized Propagation Prohibited - To be Sold by Variety Name Only as a Class of Certified Seed - U.S. Protected Variety."

PLEASE NOTE: Varieties protected under the 1994 PVP act no longer can be sold without permission of the variety owner (the farmer exemption has been excluded)'

A complete listing of all protected varieties is available in the "Official Journal of the Plant Variety Protection Office" which may be obtained upon request from:

Plant Variety Protection Office  
Warehouse Division, AMS  
U.S. Dept. of Agriculture  
National Agricultural Library  
Beltsville, MD 20705

Phone: (301) 504-5518

Internet: <http://www.ams.usda.gov/science/pvpo/pvpindex.htm>

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