2013
SPRING WHEAT VARIETIES

Performance Evaluation and Recommendations

Recommendations are made for the districts shown on the map below

by the
Montana 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 2013

TABLE OF CONTENTS

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

	District					
HARD RED SPRING WHEAT	**1**	**2**	**3**	**4**	**5**	**6**
AP604 CL (P) +	D	D	D	D	D	D
Brennan (P) +	D				D	I
Choteau +		DI	DI	DI	DI	DI
Corbin */ (P)+				D	D	
Duclair +	D	D	D	D	D	D
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	
SY Tyra (P) +	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 (P) +			D	D	D	D
WB9879CLP (P) + */		D	D	D	D	D
DURUM WHEAT						
AC Avonlea +		D		D	DI	DI
Alazada (P) +		DI		DI	DI	
Mountrail +		D		D	DI	DI

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

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, Conan, Choteau and Vida. 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: (Duclair - 4 years at Havre-dryland, page 11)

Check Varieties 10 Year Average = 39.8
Check Varieties Average Yield for last 4 years = 43.1
Variety (Duclair) in question: Average Yield for last 4 years = 42.9

$$\frac{\textit{Duclair 4 year average yield}}{\textit{Check varieties 4 year average yield}} \text{ or } \frac{42.9}{43.1} = .995\ (.99\ \%)$$

To convert Duclair yield to the 10 year comparable average:
.995 (Duclair) x 39.8 (Check varieties 10 yr. avg.) = 39.6 bu/A for Duclair

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 2012, spring wheat accounted for 48 % and durum 7.8 % of the total wheat acreages.[1] Nationally, in 2012, Montana ranked second 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 2012 were Roosevelt, Valley, and Toole.

Over 98% of durum wheat is grown on dryland, and in 2012 the highest producing counties were Sheridan, Daniels and Roosevelt 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	Average No. seeds/lb	Dryland (lbs)	Irrigated (lbs)	Seeding Date
Spring Wheat	15,000	45 – 60 (15-21 seeds/sq ft)	75 - 90 (26– 30 seeds/sq ft)	After April 1or as soon as seedbed can be prepared.
Durum Wheat	11,000	60 - 65 (15-16 seeds/sq ft)	75 - 90 (19 - 23 seeds/sq ft)	After April 1or 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.

1 Montana Agricultural Statistics, 2012. Montana Agricultural Statistics Service, Helena, MT (November 2012).

VARIETY TESTING PROCEDURES

Locations

In 2012, the Advanced Spring Wheat nursery was planted at 9 Montana sites; including Bozeman (dryland and irrigated), 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 collllected 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 stems. To evaluate this trait we cut several stems of each variety and score each internode 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

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE AVERAGE[1,2]
VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	
FORTUNA	74.4	100.7	74.8	41.4	51.6	24.4	78.3	86.3	24.3	59.1	10	61.5
MCNEAL*	78.5	86.8	43.6	51.3	52.9	35.2	77.8	84.2	22.7	56.4	10	58.9
REEDER +	87.4	92.4	92.4	75.1	62.8	64.0	99.9	103.2	45.0	63.7	10	78.6
CONAN (P)+	79.7	99.0	81.4	56.5	46.1	23.1	63.3	77.2	12.4	31.3	10	57.0
CHOTEAU +	77.9	88.6	71.4	74.2	47.2	23.7	92.1	95.0	23.8	43.1	10	63.7
VIDA * +	91.6	101.7	72.4	54.5	64.3	24.8	91.9	99.2	19.9	53.4	10	67.4
CHECK AVE	81.6	94.9	72.6	58.8	54.1	32.5	83.9	90.9	24.7	51.2	10	64.5
OUTLOOK +	70.5	94.7	61.0	63.0	55.8	23.0	71.2	89.0	0.0	0.0	8	59.9
DUCLAIR * +	0.0	0.0	0.0	0.0	0.0	0.0	90.4	101.2	31.3	57.0	4	72.1
HANK * (P)+	72.6	103.2	71.5	74.0	55.9	46.1	89.6	88.9	20.1	0.0	9	67.6
CORBIN (P) +	76.2	89.6	0.0	44.8	53.0	41.2	87.0	95.0	18.3	43.9	9	61.9
VOLT * (P) +	0.0	0.0	95.2	85.2	59.1	48.4	75.4	113.6	45.1	88.2	8	84.0
ONEAL (P) +	0.0	104.6	64.7	58.8	55.1	43.9	94.3	70.6	18.1	37.0	9	62.6
JEDD * (P) +	0.0	0.0	61.2	64.5	54.8	52.7	95.3	71.1	6.9	17.2	8	58.3
KELBY * (P) +	0.0	89.1	0.0	77.9	46.8	46.9	80.0	98.4	34.1	59.5	8	70.0
KUNTZ (P) +	0.0	0.0	0.0	67.5	50.5	29.4	81.1	94.3	26.2	0.0	6	65.3
AP604 CL * (P) +	0.0	0.0	0.0	0.0	53.9	57.6	97.2	97.8	29.9	32.4	6	70.5
BRENNAN * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	95.3	99.0	38.2	61.6	4	75.7
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	105.2	112.6	29.8	40.3	4	74.1
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	51.2	0.0	72.5	83.8	22.9	54.3	5	60.3
WB9879CLP (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.3	18.9	48.9	3	59.6

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

	TEST WEIGHT (LB/BU)		HEADING DATE (178 = JUNE 27)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
VARIETY	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	59.5	10	180	10	47.8	10	15.3
MCNEAL*	10	56.8	10	181	10	39.6	10	15.5
REEDER +	10	59.8	10	179	10	41.3	10	15.4
CONAN (P)+	10	58.3	10	179	10	37.1	10	15.3
CHOTEAU +	10	58.0	10	179	10	37.9	10	15.7
VIDA * +	10	58.3	10	180	10	39.8	10	15.5
CHECK AVE	10	58.5	10	180	10	40.6	10	15.5
OUTLOOK +	8	55.8	8	182	8	39.6	8	15.6
DUCLAIR * +	4	57.8	4	178	4	38.9	4	15.5
HANK * (P)+	9	55.9	9	178	9	36.6	9	15.1
CORBIN (P) +	9	59.0	9	178	9	38.6	9	15.5
VOLT * (P) +	8	60.7	8	182	8	37.8	8	14.2
ONEAL (P) +	9	58.0	9	180	9	38.1	9	15.4
JEDD * (P) +	8	57.6	8	178	8	31.2	8	14.8
KELBY * (P) +	8	60.3	8	177	8	36.5	8	15.3
KUNTZ (P) +	6	59.8	6	180	6	35.5	6	14.9
AP604 CL * (P) +	6	59.2	6	177	6	39.4	6	14.8
BRENNAN * (P) +	4	61.0	4	177	4	34.7	4	14.7
SY TYRA * (P) +	4	57.1	4	179	4	34.1	4	14.3
WB GUNNISON (P) +	5	59.4	5	178	5	37.3	5	14.9
WB9879CLP (P) +	3	56.3	3	179	3	37.0	3	15.9

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

+ =Protected under the Plant Variety Protection Act

[1]Comparable averages using less than three years data are not reliable

[2] The 2011 and 2012 advanced spring wheat nurseries at Kalispell were severely infested with the orange wheat blossom midge and stripe rust data should be used with caution

HARD RED SPRING WHEAT
DISTRICT 2
BOZEMAN DRYLAND

2003-2012[2] GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES										EIGHT YEAR COMPARABLE AVERAGE[1]
VARIETY	2003	2004	2005	2006	2007	2009	2011	2012	YRS	
FORTUNA	41.7	81.4	56.5	53.3	40.5	63.6	43.0	46.1	8	53.3
MCNEAL*	39.8	85.3	56.4	47.3	42.7	64.6	51.7	54.4	8	55.3
REEDER +	44.5	85.4	60.7	65.4	46.4	72.1	50.3	55.4	8	60.0
CONAN (P)+	37.8	81.7	57.2	55.2	41.0	58.7	37.5	45.0	8	51.8
CHOTEAU * +	37.7	90.0	56.6	59.3	39.8	73.9	50.1	54.2	8	57.7
VIDA * +	48.3	97.5	68.8	64.8	47.7	78.7	55.5	64.7	8	65.7
CHECK AVE	41.6	86.9	59.4	57.6	43.0	68.6	48.0	53.3	8	57.3
OUTLOOK +	42.7	87.4	65.0	54.9	43.0	72.9	0.0	0.0	6	58.7
DUCLAIR * +	0.0	0.0	0.0	0.0	0.0	71.2	52.3	55.4	3	60.3
HANK * (P)+	41.9	89.0	67.5	56.8	44.7	69.7	50.0	0.0	7	59.4
CORBIN (P) +	40.2	92.0	0.0	60.8	40.8	67.1	50.4	58.2	7	58.8
VOLT (P) +	0.0	0.0	65.5	61.4	41.7	79.0	53.5	56.6	6	62.1
ONEAL (P) +	0.0	91.5	62.0	63.3	45.9	71.9	52.1	59.6	7	61.3
JEDD * (P) +	0.0	0.0	63.3	57.7	44.9	69.5	52.4	53.3	6	59.2
KELBY * (P) +	0.0	79.1	0.0	47.7	50.1	49.3	42.5	53.2	6	51.6
KUNTZ (P) +	0.0	0.0	0.0	54.6	42.7	61.0	49.2	0.0	4	54.7
AP604 CL * (P) +	0.0	0.0	0.0	0.0	41.9	49.8	49.0	51.7	4	51.8
BRENNAN (P) +	0.0	0.0	0.0	0.0	0.0	51.9	45.1	55.5	3	51.4
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	65.6	58.2	62.2	3	62.7
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	43.5	64.1	49.1	56.6	4	57.4
WB9879CLP */ (P) +	0.0	0.0	0.0	0.0	0.0	0.0	48.7	57.6	2	

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

	TEST WEIGHT (LB/BU)		HEADING DATE (184 = JULY 3)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
VARIETY	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	8	60.7	8	184	9	38.1	8	15.2
MCNEAL*	8	58.1	8	186	9	31.7	8	15.3
REEDER +	8	60.0	8	184	9	32.7	8	15.3
CONAN (P)+	8	58.8	8	184	9	29.9	8	15.6
CHOTEAU * +	8	59.2	8	184	9	30.6	8	15.5
VIDA * +	8	58.9	8	185	9	31.9	8	15.0
CHECK AVE	8	59.3	8	185	9	32.5	8	15.3
OUTLOOK +	6	57.8	6	187	7	31.8	6	14.5
DUCLAIR * +	3	58.8	3	182	4	32.0	3	14.9
HANK * (P)+	7	57.5	7	183	8	29.8	7	15.1
CORBIN (P) +	7	60.2	7	183	8	31.7	7	14.9
VOLT (P) +	6	60.3	6	188	7	31.1	6	14.8
ONEAL (P) +	7	59.4	7	186	8	32.0	7	15.3
JEDD * (P) +	6	60.5	6	182	7	26.8	6	14.6
KELBY * (P) +	6	60.8	6	182	7	29.0	6	15.9
KUNTZ (P) +	4	59.4	4	184	5	29.4	4	14.0
AP604 CL * (P) +	4	60.4	4	182	5	30.8	4	15.7
BRENNAN (P) +	3	60.6	3	182	4	27.7	3	15.9
SY TYRA * (P) +	3	60.6	3	185	4	27.8	3	14.0
WB GUNNISON (P) +	4	60.0	4	183	5	29.7	4	14.9
WB9879CLP */ (P) +	2	59.1	2	185	3	31.3	2	15.3

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

+ =Protected under the Plant Variety Protection Act

[1]Comparable averages using less than three years data are not reliable

[2] The 2008 and 2010 nurseries were hailed out and not harvested in Bozeman

HARD RED SPRING WHEAT
DISTRICT 2
BOZEMAN IRRIGATED

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES

VARIETY	2003	2004	2005	2006	2007	2009	2011	2012	YRS	EIGHT YEAR COMPARABLE AVERAGE[1]
FORTUNA	63.5	100.6	70.0	55.6	37.7	62.6	57.8	60.1	8	63.5
MCNEAL*	65.3	102.9	82.5	33.0	41.3	68.9	71.2	89.8	8	69.4
REEDER +	74.7	97.2	83.6	56.2	57.0	82.6	68.7	82.8	8	75.3
CONAN (P)+	68.9	89.9	78.4	63.7	52.2	60.0	60.1	72.1	8	68.2
CHOTEAU * +	70.4	103.2	87.4	54.8	54.1	80.3	72.5	97.2	8	77.5
VIDA +	80.0	107.9	87.2	53.7	58.0	81.4	66.9	91.9	8	78.4
CHECK AVE	70.4	100.3	81.5	52.8	50.1	72.6	66.2	82.3	8	72.0
OUTLOOK +	74.3	104.2	86.4	48.4	54.4	80.9	0.0	0.0	6	75.5
DUCLAIR +	0.0	0.0	0.0	0.0	0.0	74.9	72.9	91.5	3	77.9
HANK * (P)+	74.5	115.3	91.9	60.6	56.2	79.2	70.0	0.0	7	79.9
CORBIN (P) +	71.2	96.3	0.0	74.5	49.5	65.0	70.3	94.0	7	75.9
VOLT * (P) +	0.0	0.0	90.2	78.6	60.1	87.2	73.8	97.6	6	86.6
ONEAL (P) +	0.0	110.0	85.6	58.0	51.2	80.6	70.9	83.8	7	76.9
JEDD * (P) +	0.0	0.0	91.3	65.5	52.9	72.1	75.3	94.2	6	80.2
KELBY * (P) +	0.0	90.2	0.0	49.5	59.1	51.1	54.4	86.5	6	66.3
KUNTZ * (P) +	0.0	0.0	0.0	53.9	59.5	64.8	77.7	0.0	4	76.3
AP604 CL (P) +	0.0	0.0	0.0	0.0	50.4	58.0	64.4	94.5	4	71.0
BRENNAN (P) +	0.0	0.0	0.0	0.0	0.0	55.7	62.8	88.1	3	67.3
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	69.0	80.7	95.7	3	80.0
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	43.5	70.2	71.3	80.6	4	70.6
WB9879CLP (P) +	0.0	0.0	0.0	0.0	0.0	0.0	69.3	100.1	2	

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	AVE	HEADING DATE (180 = JUNE 29) YEARS	AVE	PLANT HEIGHT (INCHES) YEARS	AVE	PROTEIN % YEARS	AVE
FORTUNA	8	61.3	8	184	7	40.5	8	15.1
MCNEAL*	8	59.7	8	185	7	35.5	8	15.0
REEDER +	8	61.0	8	184	7	36.1	8	15.3
CONAN (P)+	8	60.2	8	183	7	32.5	8	15.1
CHOTEAU * +	8	60.1	8	183	7	33.5	8	15.2
VIDA +	8	59.4	8	185	7	35.0	8	15.0
CHECK AVE	8	60.3	8	184	7	35.5	8	15.1
OUTLOOK +	6	58.8	6	186	5	35.6	6	14.4
DUCLAIR +	3	59.7	3	181	2	34.3	3	14.8
HANK * (P)+	7	58.7	7	182	6	31.8	7	14.8
CORBIN (P) +	7	61.3	7	183	6	34.4	7	15.0
VOLT * (P) +	6	62.2	6	188	5	33.2	6	14.2
ONEAL (P) +	7	60.0	7	185	6	35.0	7	15.0
JEDD * (P) +	6	61.5	6	183	5	28.8	6	14.4
KELBY * (P) +	6	61.4	6	182	5	31.4	6	15.3
KUNTZ * (P) +	4	60.7	4	183	3	31.6	4	14.1
AP604 CL (P) +	4	61.9	4	181	3	34.7	4	15.8
BRENNAN (P) +	3	61.5	3	181	2	30.2	3	15.4
SY TYRA * (P) +	3	61.4	3	183	2	30.1	3	13.4
WB GUNNISON (P) +	4	61.1	4	183	3	32.0	4	14.2
WB9879CLP (P) +	2	60.7	2	184	2	33.9	2	14.8

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

+ =Protected under the Plant Variety Protection Act

[1]Comparable averages using less than three years data are not reliable

[2] The 2008 and 2010 nurseries were hailed out and not harvested in Bozeman

HARD RED SPRING WHEAT
DISTRICT 3
HUNTLEY DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	TEN YEAR COMPARABLE AVERAGE[1]
FORTUNA	37.7	31.7	36.3	41.3	54.7	51.4	45.6	62.9	46.8	52.4	10	46.1
MCNEAL*	36.0	39.1	39.0	57.1	55.9	65.9	47.2	72.5	39.9	55.2	10	50.8
REEDER +	40.6	32.8	43.4	52.5	61.4	69.0	51.1	68.5	52.5	61.5	10	53.3
CONAN (P)+	35.6	28.3	39.6	41.7	55.4	58.4	40.4	71.8	45.9	56.3	10	47.3
CHOTEAU * +	37.2	28.7	34.9	53.5	61.9	59.5	45.7	74.6	54.0	54.1	10	50.4
VIDA * +	42.3	34.3	38.2	54.0	67.2	67.8	57.1	75.5	54.7	60.0	10	55.1
CHECK AVE	38.2	32.5	38.6	50.0	59.4	62.0	47.9	70.9	49.0	56.6	10	50.5
OUTLOOK +	42.5	39.3	45.0	56.5	63.4	69.6	47.9	74.8	0.0	0.0	8	55.5
DUCLAIR * +	0.0	0.0	0.0	0.0	0.0	0.0	40.9	72.4	56.7	61.7	4	52.2
HANK * (P)+	42.3	29.5	44.4	47.3	61.4	64.6	55.3	80.7	51.4	0.0	9	53.7
CORBIN (P) +	37.8	17.9	0.0	51.2	62.7	65.8	48.0	72.8	50.0	62.4	9	50.7
VOLT (P) +	0.0	0.0	48.8	49.3	63.7	67.7	44.6	78.6	54.9	58.0	8	54.1
ONEAL * (P) +	0.0	35.2	42.5	52.3	60.9	63.8	55.9	74.5	41.4	58.3	9	52.4
JEDD * (P) +	0.0	0.0	42.4	46.9	60.6	65.6	50.0	75.9	47.1	53.5	8	51.4
KELBY (P) +	0.0	33.6	0.0	37.9	40.1	55.6	36.2	68.9	47.3	55.5	8	44.2
KUNTZ (P) +	0.0	0.0	0.0	49.9	57.1	60.8	50.5	74.4	49.8	0.0	6	51.0
AP604 CL * (P) +	0.0	0.0	0.0	0.0	58.0	67.3	48.1	73.0	57.5	61.1	6	53.3
BRENNAN (P) +	0.0	0.0	0.0	0.0	0.0	0.0	43.2	66.4	56.0	59.3	4	50.6
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	51.6	77.0	43.9	53.4	4	50.8
WB GUNNISON * (P) +	0.0	0.0	0.0	0.0	60.4	0.0	49.5	73.5	49.1	50.2	5	50.3
WB9879CLP */ (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.5	51.8	61.2	3	52.2

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	TEST WEIGHT (LB/BU) AVE	HEADING DATE (166 = JUNE 15) YEARS	HEADING DATE (166 = JUNE 15) AVE	PLANT HEIGHT (INCHES) YEARS	PLANT HEIGHT (INCHES) AVE	PROTEIN (%) YEARS	PROTEIN (%) AVE
FORTUNA	10	60.7	10	166	10	38.6	10	13.0
MCNEAL*	10	59.5	10	168	10	33.4	10	12.6
REEDER +	10	60.9	10	166	10	33.2	10	13.1
CONAN (P)+	10	60.6	10	166	10	30.8	10	13.5
CHOTEAU * +	10	60.5	10	167	10	31.0	10	13.5
VIDA * +	10	59.8	10	167	10	33.1	10	12.5
CHECK AVE	10	60.3	10	167	10	33.4	10	13.0
OUTLOOK +	8	59.6	8	169	8	33.7	8	12.5
DUCLAIR * +	4	59.7	4	165	4	32.6	4	12.7
HANK * (P)+	9	59.2	9	166	9	30.5	9	12.9
CORBIN (P) +	9	61.0	9	166	9	32.6	9	13.1
VOLT (P) +	8	62.0	8	167	8	31.0	8	12.5
ONEAL * (P) +	9	60.2	9	167	9	32.5	9	12.3
JEDD * (P) +	8	61.0	8	166	8	28.0	8	12.6
KELBY (P) +	8	61.6	8	165	8	29.5	8	14.0
KUNTZ (P) +	6	60.8	6	167	6	30.5	6	12.2
AP604 CL * (P) +	6	62.0	6	165	6	35.1	6	12.8
BRENNAN (P) +	4	61.4	4	165	4	29.9	4	14.0
SY TYRA * (P) +	4	60.3	4	167	4	29.1	4	12.6
WB GUNNISON * (P) +	5	60.6	5	165	5	30.4	5	13.0
WB9879CLP */ (P) +	3	61.0	3	167	3	31.6	3	12.8

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

[1]Comparable averages using less than three years data are not reliable

HARD RED SPRING WHEAT
DISTRICT 3
HUNTLEY IRRIGATED

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											TEN YEAR COMPARABLE
VARIETY	2003	2004	2005	2006	2007	2008	2009	2011	2012	YRS	AVERAGE[1,2]
FORTUNA	79.4	108.9	62.7	70.3	69.6	104.2	84.0	55.5	94.7	9	81.0
MCNEAL*	88.1	114.4	78.1	89.2	83.2	84.8	75.8	55.1	107.8	9	86.3
REEDER +	85.5	110.5	72.4	77.6	75.8	103.5	102.7	65.9	100.7	9	88.3
CONAN (P)+	77.5	113.4	73.7	70.5	85.6	99.0	92.9	62.3	0.0	8	84.4
CHOTEAU * +	86.6	128.7	83.0	87.9	91.7	111.8	107.7	69.6	112.5	9	97.7
VIDA * +	98.6	117.8	86.4	88.2	99.3	95.2	105.3	64.1	108.7	9	95.9
CHECK AVE	85.9	115.6	76.1	80.6	84.2	99.8	94.7	62.1	87.4	9	87.4
OUTLOOK +	88.9	116.2	89.8	94.0	87.4	86.4	101.7	67.8	106.2	9	93.2
DUCLAIR +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.9	112.2	2	
HANK * (P)+	85.6	123.3	85.8	92.2	97.9	99.4	107.2	71.2	116.0	9	97.6
CORBIN (P) +	77.2	94.4	0.0	88.3	93.2	103.3	100.2	65.7	108.4	8	89.9
VOLT * (P) +	0.0	0.0	90.9	91.4	0.0	0.0	0.0	66.0	109.0	4	102.0
ONEAL (P) +	0.0	127.9	89.5	93.3	0.0	104.8	108.4	64.4	116.4	7	99.9
JEDD * (P) +	0.0	0.0	90.8	94.6	0.0	120.7	101.4	68.8	111.1	6	102.5
KELBY (P) +	0.0	108.8	0.0	69.7	0.0	98.4	85.0	60.6	108.3	6	85.9
KUNTZ * (P) +	0.0	0.0	0.0	97.3	0.0	92.1	96.3	65.0	0.0	4	90.9
AP604 CL (P) +	0.0	0.0	0.0	0.0	0.0	0.0	106.2	65.5	112.5	3	101.7
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.7	121.2	2	
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	113.5	1	

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

	TEST WEIGHT (LB/BU)		HEADING DATE (166 = JUNE 15)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
VARIETY	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	9	62.0	9	167	9	43.8	9	13.6
MCNEAL*	9	62.2	9	168	9	38.2	9	12.5
REEDER +	9	62.6	9	166	9	40.4	9	13.3
CONAN (P)+	8	60.2	8	163	8	35.0	8	13.4
CHOTEAU * +	9	62.6	9	167	9	37.1	9	12.9
VIDA * +	9	61.7	9	168	9	38.8	9	12.8
CHECK AVE	9	60.9	9	164	9	38.3	9	12.8
OUTLOOK +	9	61.5	9	170	9	39.2	9	12.3
DUCLAIR +	2	66.0	2	176	2	40.3	2	13.2
HANK * (P)+	9	60.5	9	166	9	35.3	9	12.9
CORBIN (P) +	8	62.1	8	166	8	37.7	8	13.2
VOLT * (P) +	4	64.9	4	173	4	35.4	4	13.2
ONEAL (P) +	7	62.3	7	169	7	38.9	7	12.5
JEDD * (P) +	6	62.9	6	168	6	32.8	6	13.0
KELBY (P) +	6	63.5	6	167	6	34.3	6	14.1
KUNTZ * (P) +	4	61.5	4	164	4	34.1	4	12.1
SY TYRA * (P) +	2	63.2	2	167	2	34.6	2	12.8
WB GUNNISON (P) +	1	63.3	1	165	1	35.7	1	15.2
WB9879CLP (P) +	2	62.6	2	168	2	39.7	2	13.5

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

+ =Protected under the Plant Variety Protection Act

[1]Comparable averages using less than three years data are not reliable

[2] The 2007-2012 Huntley irrigated data is from the "offstation" spring wheat nursery grown on station

HARD RED SPRING WHEAT
DISTRICT 4
MOCCASIN DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	TEN YEAR COMPARABLE AVERAGE[1]
FORTUNA	18.1	37.1	25.7	32.1	34.5	28.8	26.2	38.1	22.7	21.6	10	28.5
MCNEAL*	20.3	36.9	24.3	34.2	43.0	28.3	33.9	40.8	24.4	23.9	10	31.0
REEDER +	18.4	37.9	27.2	34.5	42.0	28.7	30.5	41.2	25.4	24.4	10	31.0
CONAN (P)+	17.8	39.3	25.3	32.8	37.7	25.0	29.6	41.1	22.8	23.1	10	29.4
CHOTEAU * +	15.0	35.6	26.8	33.9	43.0	23.1	24.4	40.2	24.2	18.9	10	28.5
VIDA * +	17.0	39.1	25.8	35.5	44.3	27.2	34.3	41.5	25.6	24.2	10	31.4
CHECK AVE	17.8	37.6	25.9	33.8	40.8	26.9	29.8	40.5	24.2	22.7	10	30.0
OUTLOOK +	16.6	39.5	26.0	31.5	44.6	30.3	27.9	44.4	0.0	0.0	8	30.9
DUCLAIR * +	0.0	0.0	0.0	0.0	0.0	0.0	29.0	42.1	27.7	21.8	4	30.9
HANK * (P)+	21.4	41.5	29.2	37.2	42.3	27.6	31.1	42.8	26.1	0.0	9	32.4
CORBIN */ (P) +	16.3	35.3	0.0	33.5	41.7	21.9	26.6	37.6	26.4	21.2	9	28.5
VOLT (P) +	0.0	0.0	32.0	32.2	40.0	30.0	28.2	38.4	24.2	26.0	8	30.8
ONEAL * (P) +	0.0	44.6	28.5	29.6	40.6	27.5	31.2	43.9	25.5	22.0	9	31.2
JEDD * (P) +	0.0	0.0	27.0	39.2	46.0	25.2	26.4	41.4	24.8	21.7	8	30.9
KELBY * (P) +	0.0	30.7	0.0	38.1	40.2	29.0	25.5	45.4	19.9	26.9	8	29.9
KUNTZ (P) +	0.0	0.0	0.0	38.6	41.4	26.5	29.1	38.0	24.1	0.0	6	30.3
AP604 CL * (P) +	0.0	0.0	0.0	0.0	41.5	23.5	27.4	33.6	24.3	24.4	6	28.4
BRENNAN (P) +	0.0	0.0	0.0	0.0	0.0	0.0	25.5	40.6	21.3	25.2	4	28.8
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	30.1	38.9	24.6	19.0	4	28.8
WB GUNNISON * (P) +	0.0	0.0	0.0	0.0	41.9	0.0	30.6	41.4	26.2	30.2	5	32.3
WB9879CLP */ (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.3	25.3	15.2	3	28.1

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	AVE	HEADING DATE (183 = JULY 2) YEARS	AVE	PLANT HEIGHT (INCHES) YEARS	AVE	PROTEIN (%) YEARS	AVE
FORTUNA	10	57.9	10	182	10	33.6	10	15.7
MCNEAL*	10	56.7	10	183	10	30.0	10	15.8
REEDER +	10	58.1	10	182	10	28.7	10	15.8
CONAN (P)+	10	57.8	10	181	10	27.3	10	15.5
CHOTEAU * +	10	57.6	10	182	10	27.2	10	15.4
VIDA * +	10	56.8	10	183	10	28.6	10	15.2
CHECK AVE	10	57.5	10	182	10	29.2	10	15.6
OUTLOOK +	8	55.8	8	184	8	28.2	8	15.8
DUCLAIR * +	4	55.6	4	180	4	28.6	4	15.7
HANK * (P)+	9	54.8	9	180	9	27.9	9	15.7
CORBIN */ (P) +	9	57.2	9	181	9	28.3	9	15.9
VOLT (P) +	8	59.5	8	183	8	28.1	8	14.6
ONEAL * (P) +	9	57.9	9	183	9	29.4	9	16.1
JEDD * (P) +	8	58.0	8	181	8	25.1	8	15.9
KELBY * (P) +	8	58.7	8	180	8	27.2	8	15.9
KUNTZ (P) +	6	58.0	6	182	6	27.2	6	14.4
AP604 CL * (P) +	6	58.0	6	181	6	29.7	6	15.4
BRENNAN (P) +	4	58.8	4	181	4	27.4	4	15.5
SY TYRA * (P) +	4	58.6	4	182	4	25.6	4	15.7
WB GUNNISON * (P) +	5	57.4	5	182	5	28.5	5	15.3
WB9879CLP */ (P) +	3	57.8	3	183	3	27.5	3	15.6

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

[1]**Comparable averages using less than three years data are not reliable**

HARD RED SPRING WHEAT
DISTRICT 5
HAVRE DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE AVERAGE[1]
VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	
FORTUNA	10.8	42.0	48.2	34.0	32.1	44.9	46.3	48.7	39.8	32.7	10	37.9
MCNEAL*	13.9	40.8	51.4	27.4	34.8	47.4	42.4	48.8	37.1	33.2	10	37.7
REEDER +	12.4	40.9	51.2	28.8	35.6	51.3	49.0	55.2	42.0	31.4	10	39.8
CONAN (P)+	13.5	43.3	55.5	31.9	35.8	45.9	43.3	51.1	42.7	34.4	10	39.8
CHOTEAU * +	13.1	42.5	55.7	32.1	36.1	43.4	40.7	54.8	38.7	30.5	10	38.8
VIDA * +	14.3	51.7	58.3	34.3	42.3	53.4	53.8	59.3	43.8	35.4	10	44.7
CHECK AVE	13.0	43.5	53.4	31.4	36.1	47.7	45.9	53.0	40.7	32.9	10	39.8
OUTLOOK +	16.2	49.0	58.3	31.8	35.5	48.7	44.3	56.2	0.0	0.0	8	41.7
DUCLAIR * +	0.0	0.0	0.0	0.0	0.0	0.0	41.2	53.6	42.8	33.9	4	39.6
HANK * (P)+	10.4	45.0	55.6	33.3	34.5	48.0	46.7	56.2	41.5	0.0	9	40.5
CORBIN */ (P) +	9.2	48.7	0.0	29.4	42.8	46.8	45.9	52.8	45.0	32.1	9	40.8
VOLT (P) +	0.0	0.0	52.8	27.5	35.3	41.3	42.5	49.0	49.9	27.9	8	38.0
ONEAL * (P) +	0.0	55.0	57.6	31.0	34.5	52.1	48.6	59.2	46.9	34.1	9	43.3
JEDD * (P) +	0.0	0.0	60.3	31.7	34.4	48.5	43.3	52.6	40.7	33.9	8	40.3
KELBY * (P) +	0.0	38.2	0.0	29.3	37.5	49.6	44.0	47.3	41.2	35.9	8	38.8
KUNTZ (P) +	0.0	0.0	0.0	26.7	31.5	42.4	44.4	44.4	41.8	0.0	6	36.1
AP604 CL * (P) +	0.0	0.0	0.0	0.0	36.3	46.0	42.1	52.3	40.3	30.1	6	38.3
BRENNAN * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	55.1	53.3	36.9	38.3	4	42.3
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	43.9	51.7	40.7	26.4	4	37.5
WB GUNNISON * (P) +	0.0	0.0	0.0	0.0	38.4	0.0	45.4	62.8	45.3	33.3	5	42.9
WB9879CLP */ (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.0	39.9	30.4	3	39.1

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

	TEST WEIGHT (LB/BU)		HEADING DATE (177 = JUNE 26)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
VARIETY	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	58.0	10	177	9	32.2	10	15.4
MCNEAL*	10	55.9	10	179	9	27.8	10	16.0
REEDER +	10	57.5	10	178	9	28.5	10	15.7
CONAN (P)+	10	58.2	10	178	9	26.9	10	15.6
CHOTEAU * +	10	56.6	10	178	9	26.9	10	15.9
VIDA * +	10	56.9	10	179	9	28.7	10	15.3
CHECK AVE	10	57.2	10	178	9	28.5	10	15.7
OUTLOOK +	8	56.1	8	180	8	28.0	8	15.5
DUCLAIR * +	4	55.8	4	177	3	28.8	4	16.1
HANK * (P)+	9	55.9	9	176	8	26.4	9	16.0
CORBIN */ (P) +	9	57.5	9	177	8	27.8	9	15.9
VOLT (P) +	8	58.6	8	180	7	27.0	8	15.3
ONEAL * (P) +	9	57.8	9	179	8	27.3	9	15.9
JEDD * (P) +	8	58.3	8	177	7	23.8	8	15.5
KELBY * (P) +	8	59.1	8	176	7	26.3	8	16.0
KUNTZ (P) +	6	56.8	6	179	5	26.8	6	15.0
AP604 CL * (P) +	6	57.8	6	175	5	28.5	6	16.0
BRENNAN * (P) +	4	58.6	4	177	3	26.3	4	15.9
SY TYRA * (P) +	4	56.7	4	179	3	24.9	4	15.2
WB GUNNISON * (P) +	5	58.0	5	177	4	27.1	5	15.1
WB9879CLP */ (P) +	3	56.5	3	178	2	26.5	3	16.0

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

+ =Protected under the Plant Variety Protection Act

[1]Comparable averages using less than three years data are not reliable

HARD RED SPRING WHEAT
DISTRICT 5
CONRAD DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE
VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	AVERAGE[1]
FORTUNA	49.6	58.0	51.0	43.7	32.9	44.5	62.8	55.0	62.6	62.6	10	52.3
MCNEAL*	49.5	57.5	54.3	51.3	36.6	39.0	74.7	58.4	66.8	74.5	10	56.3
REEDER +	53.9	60.7	53.3	62.0	35.0	36.8	78.7	57.7	69.4	74.2	10	58.2
CONAN (P)+	45.9	58.0	49.7	53.1	36.2	49.1	62.2	61.2	62.1	70.2	10	54.8
CHOTEAU * +	59.5	63.8	50.5	67.3	37.8	40.7	75.0	81.2	80.6	75.0	10	63.2
VIDA * +	55.2	63.6	55.0	64.7	37.6	53.4	85.5	60.7	66.4	79.9	10	62.2
CHECK AVE	52.3	60.3	52.3	57.0	36.0	43.9	73.1	62.4	68.0	72.8	10	57.8
OUTLOOK +	48.8	60.2	51.9	63.8	33.6	41.2	82.0	42.8	0.0	0.0	8	56.1
DUCLAIR * +	0.0	0.0	0.0	0.0	0.0	0.0	77.5	79.7	78.2	74.3	4	64.8
HANK * (P)+	48.9	60.0	51.0	59.6	33.1	34.7	75.3	65.7	58.8	0.0	9	55.7
CORBIN */ (P) +	48.7	62.4	0.0	56.2	37.0	49.8	72.5	69.2	68.9	78.6	9	59.7
VOLT (P) +	0.0	0.0	51.5	58.3	34.5	28.5	74.7	56.5	72.5	81.0	8	56.8
ONEAL * (P) +	0.0	62.6	52.6	64.7	37.0	49.8	85.4	59.8	64.9	79.7	9	61.2
JEDD * (P) +	0.0	0.0	53.8	61.2	39.8	38.1	68.2	60.2	56.8	71.6	8	55.8
KELBY * (P) +	0.0	50.9	0.0	58.8	39.7	39.5	60.6	43.9	67.1	72.2	8	52.8
KUNTZ (P) +	0.0	0.0	0.0	56.8	37.0	31.8	72.4	59.2	69.2	0.0	6	55.4
AP604 CL * (P) +	0.0	0.0	0.0	0.0	36.6	35.3	60.7	58.3	63.3	72.7	6	53.1
BRENNAN * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	60.2	46.3	72.2	70.8	4	52.2
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	80.6	69.6	68.1	82.1	4	62.9
WB GUNNISON * (P) +	0.0	0.0	0.0	0.0	39.3	0.0	67.7	73.8	65.2	71.2	5	58.7
WB9879CLP */ (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.2	62.5	76.5	3	61.0

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

	TEST WEIGHT (LB/BU)		HEADING DATE (184 = JULY 3)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
VARIETY	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
FORTUNA	10	60.7	10	183	10	38.7	10	13.8
MCNEAL*	10	59.7	10	184	10	32.7	10	13.6
REEDER +	10	60.1	10	182	10	33.0	10	14.1
CONAN (P)+	10	59.9	10	183	10	30.4	10	14.1
CHOTEAU * +	10	60.1	10	183	10	31.1	10	14.0
VIDA * +	10	59.6	10	184	10	32.7	10	13.5
CHECK AVE	10	60.0	10	183	10	33.1	10	13.9
OUTLOOK +	8	58.1	8	184	8	32.6	8	14.0
DUCLAIR * +	4	59.4	4	181	4	31.7	4	13.9
HANK * (P)+	9	58.0	9	181	9	31.0	9	14.0
CORBIN */ (P) +	9	60.3	9	182	9	32.1	9	13.9
VOLT (P) +	8	62.0	8	185	8	30.5	8	13.5
ONEAL * (P) +	9	60.1	9	184	9	32.8	9	13.9
JEDD * (P) +	8	60.4	8	182	8	27.2	8	13.4
KELBY * (P) +	8	61.7	8	181	8	29.0	8	14.7
KUNTZ (P) +	6	60.5	6	183	6	29.3	6	13.4
AP604 CL * (P) +	6	61.3	6	181	6	31.9	6	14.3
BRENNAN * (P) +	4	61.1	4	181	4	27.7	4	14.7
SY TYRA * (P) +	4	60.5	4	183	4	27.6	4	12.8
WB GUNNISON * (P) +	5	60.4	5	182	5	30.4	5	13.4
WB9879CLP */ (P) +	3	60.1	3	184	3	30.9	3	14.1

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

+ =Protected under the Plant Variety Protection Act

[1]Comparable averages using less than three years data are not reliable

HARD RED SPRING WHEAT
DISTRICT 6
SIDNEY DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	TEN YEAR COMPARABLE AVERAGE[1]
FORTUNA	57.4	60.3	42.0	49.0	49.2	30.2	39.7	43.2	32.9	36.5	10	44.1
MCNEAL*	60.7	68.3	45.7	52.7	53.8	34.0	45.0	39.4	39.2	35.8	10	47.5
REEDER +	67.6	68.0	50.2	59.7	52.1	36.5	44.5	47.4	49.0	41.3	10	51.6
CONAN (P)+	55.7	59.1	44.6	46.0	48.8	36.3	37.4	38.2	36.9	29.7	10	43.3
CHOTEAU * +	61.2	61.9	46.1	52.3	52.1	31.5	39.8	45.6	42.8	37.3	10	47.1
VIDA * +	73.0	71.1	51.0	60.6	56.2	34.2	49.5	53.2	46.2	40.0	10	53.5
CHECK AVE	62.6	64.8	46.6	53.4	52.0	33.8	42.6	44.5	41.2	36.8	10	47.8
OUTLOOK +	69.0	67.5	46.4	57.4	55.7	34.2	44.7	46.7	0.0	0.0	8	50.4
DUCLAIR * +	0.0	0.0	0.0	0.0	0.0	0.0	43.8	52.9	34.0	39.8	4	49.2
HANK * (P)+	63.3	66.6	48.0	55.0	53.6	40.0	42.8	44.0	45.0	0.0	9	49.6
CORBIN (P) +	60.1	62.3	0.0	54.4	55.7	32.6	39.2	47.2	40.2	39.0	9	47.7
VOLT (P) +	0.0	0.0	49.3	51.1	53.5	39.5	39.8	46.0	37.2	31.0	8	47.3
ONEAL (P) +	0.0	71.6	49.5	54.3	51.0	40.4	46.8	48.7	47.8	37.0	9	51.5
JEDD * (P) +	0.0	0.0	48.7	53.2	57.7	37.9	42.3	46.1	39.8	36.5	8	49.4
KELBY (P) +	0.0	63.6	0.0	50.4	49.3	42.6	42.4	39.7	48.2	43.0	8	49.1
KUNTZ (P) +	0.0	0.0	0.0	58.4	51.6	40.7	45.9	39.5	45.5	0.0	6	50.4
AP604 CL * (P) +	0.0	0.0	0.0	0.0	54.1	30.5	43.5	45.5	44.0	34.5	6	48.1
BRENNAN (P) +	0.0	0.0	0.0	0.0	0.0	0.0	43.2	42.2	46.1	43.9	4	50.8
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	50.0	45.3	46.0	36.0	4	51.4
WB GUNNISON * (P) +	0.0	0.0	0.0	0.0	51.2	0.0	36.3	41.8	32.6	38.2	5	44.1
WB9879CLP */ (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.6	37.6	36.3	3	45.5

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	TEST WEIGHT (LB/BU) AVE	HEADING DATE (170 = June 19) YEARS	HEADING DATE (170 = June 19) AVE	PLANT HEIGHT (INCHES) YEARS	PLANT HEIGHT (INCHES) AVE	PROTEIN (%) YEARS	PROTEIN (%) AVE
FORTUNA	10	60.2	10	173	10	32.8	10	13.8
MCNEAL*	10	59.0	10	174	10	28.4	10	13.9
REEDER +	10	60.7	10	172	10	27.7	10	13.8
CONAN (P)+	10	60.7	10	172	10	26.1	10	14.0
CHOTEAU * +	10	60.5	10	172	10	26.7	10	14.2
VIDA * +	10	59.8	10	173	10	28.2	10	13.4
CHECK AVE	10	60.1	10	173	10	28.3	10	13.8
OUTLOOK +	8	59.2	8	175	8	28.8	8	13.5
DUCLAIR * +	4	59.0	4	172	4	27.3	4	13.4
HANK * (P)+	9	59.0	9	171	9	26.4	9	13.3
CORBIN (P) +	9	60.3	9	171	9	27.4	9	13.7
VOLT (P) +	8	61.4	8	174	8	26.0	8	13.1
ONEAL (P) +	9	60.4	9	174	9	28.0	9	13.3
JEDD * (P) +	8	61.5	8	171	8	24.4	8	13.1
KELBY (P) +	8	61.5	8	171	8	26.2	8	14.5
KUNTZ (P) +	6	61.0	6	173	6	27.4	6	12.8
AP604 CL * (P) +	6	61.1	6	171	6	28.1	6	14.1
BRENNAN (P) +	4	61.5	4	171	4	27.0	4	14.0
SY TYRA * (P) +	4	61.3	4	173	4	24.4	4	12.8
WB GUNNISON * (P) +	5	60.7	5	172	5	26.6	5	13.6
WB9879CLP */ (P) +	3	59.8	3	173	3	27.3	3	13.9

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

+ =Protected under the Plant Variety Protection Act

[1]Comparable averages using less than three years data are not reliable

HARD RED SPRING WHEAT
DISTRICT 6
SIDNEY IRRIGATED

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	TEN YEAR COMPARABLE AVERAGE[1]
FORTUNA	77.5	66.4	60.3	60.3	40.3	78.8	75.5	68.2	28.3	50.3	10	60.6
MCNEAL*	107.5	83.4	67.3	69.5	46.4	107.1	95.3	66.2	50.8	67.8	10	76.1
REEDER +	102.5	88.8	62.6	83.7	44.1	90.8	95.7	85.0	43.4	71.2	10	76.8
CONAN (P)+	88.3	76.1	59.6	72.1	37.5	88.1	82.7	73.3	37.8	58.7	10	67.4
CHOTEAU * +	107.3	76.0	55.8	71.3	35.5	95.6	94.8	79.4	38.0	56.3	10	71.0
VIDA +	105.9	90.5	49.9	77.4	35.7	93.4	96.0	68.0	44.9	66.8	10	72.9
CHECK AVE	98.2	80.2	59.2	72.4	39.9	92.3	90.0	73.4	40.5	61.9	10	70.8
OUTLOOK +	104.1	84.2	75.9	69.4	42.6	103.8	96.3	87.2	0.0	0.0	8	77.6
DUCLAIR +	0.0	0.0	0.0	0.0	0.0	0.0	101.4	85.3	38.5	60.7	4	76.1
HANK * (P)+	113.5	87.6	74.7	69.1	40.3	101.5	99.2	65.3	38.6	0.0	9	75.6
CORBIN (P) +	94.6	70.6	0.0	67.4	29.1	96.2	93.4	61.6	33.9	61.7	9	66.4
VOLT * (P) +	0.0	0.0	81.2	61.0	42.9	99.1	96.9	80.8	37.2	38.7	8	71.9
ONEAL (P) +	0.0	87.6	77.4	69.5	40.3	103.7	100.5	67.6	39.6	68.3	9	76.0
JEDD * (P) +	0.0	0.0	71.3	70.4	37.1	106.6	82.5	51.0	34.6	71.2	8	70.2
KELBY (P) +	0.0	76.8	0.0	67.9	30.6	90.6	88.3	74.0	36.0	49.7	8	66.1
KUNTZ (P) +	0.0	0.0	0.0	72.5	30.8	97.1	95.2	78.7	46.1	0.0	6	72.9
AP604 CL (P) +	0.0	0.0	0.0	0.0	27.9	89.2	90.2	71.3	43.0	38.6	6	64.1
BRENNAN * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	94.5	83.3	40.4	72.4	4	77.4
SY TYRA * (P) +	0.0	0.0	0.0	0.0	0.0	0.0	104.4	76.8	44.0	64.9	4	77.3
WB GUNNISON (P) +	0.0	0.0	0.0	0.0	42.1	0.0	86.5	77.1	35.3	68.4	5	71.7
WB9879CLP (P) +	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.1	38.6	64.2	3	70.4

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	AVE	HEADING DATE (177 = JUNE 26) YEARS	AVE	PLANT HEIGHT (INCHES) YEARS	AVE	PROTEIN (%) YEARS	AVE
FORTUNA	10	60.4	10	177	10	36.8	10	14.6
MCNEAL*	10	59.9	10	178	10	33.1	10	14.4
REEDER +	10	61.3	10	176	10	32.7	10	14.7
CONAN (P)+	10	60.7	10	176	10	29.9	10	14.5
CHOTEAU * +	10	60.2	10	176	10	30.1	10	14.6
VIDA +	10	59.7	10	176	10	31.2	10	14.0
CHECK AVE	10	60.4	10	177	10	32.3	10	14.4
OUTLOOK +	8	59.8	8	178	8	32.8	8	14.3
DUCLAIR +	4	59.8	4	175	4	30.7	4	14.0
HANK * (P)+	9	59.2	9	175	9	28.7	9	14.3
CORBIN (P) +	9	60.5	9	175	9	29.8	9	14.1
VOLT * (P) +	8	61.0	8	180	8	30.2	8	13.8
ONEAL (P) +	9	59.7	9	177	9	32.8	9	14.2
JEDD * (P) +	8	60.8	8	175	8	25.6	8	14.3
KELBY (P) +	8	61.5	8	175	8	27.7	8	15.5
KUNTZ (P) +	6	60.8	6	176	6	28.9	6	13.8
AP604 CL (P) +	6	62.1	6	174	6	28.4	6	14.4
BRENNAN * (P) +	4	62.0	4	175	4	28.3	4	14.9
SY TYRA * (P) +	4	62.0	4	176	4	27.8	4	13.4
WB GUNNISON (P) +	5	61.5	5	176	5	30.3	5	13.6
WB9879CLP (P) +	3	60.0	3	177	3	31.5	3	14.3

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

+ =Protected under the Plant Variety Protection Act

[1]**Comparable averages using less than three years data are not reliable**

DURUM WHEAT
DISTRICT 2
BOZEMAN DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2003	2004	2005	2006	2007	2009	2011	2012	YEARS	EIGHT YEAR COMPARABLE AVERAGE[1]
MOUNTRAIL * +	41.9	61.8	48.5	57.1	44.5	83.2	50.4	48.6	8	54.5
CHECK AVE	41.9	61.8	48.5	57.1	44.5	83.2	50.4	48.6	8	54.5
KYLE	39.6	54.5	46.0	55.8	0.0	0.0	0.0	0.0	4	51.0
MAIER +	41.5	61.1	50.6	57.0	0.0	0.0	0.0	0.0	4	54.8
PLAZA +	34.1	63.7	49.3	50.7	0.0	0.0	0.0	0.0	4	51.5
AC AVONLEA * +	40.6	62.5	48.6	56.1	0.0	0.0	0.0	0.0	4	54.1
ALZADA * (P)+	42.2	74.0	56.5	54.4	46.9	62.5	44.5	47.1	8	53.5
STRONGFIELD	0.0	0.0	0.0	55.9	42.8	64.6	43.5	47.5	5	48.8
GRENORA +	0.0	0.0	0.0	58.4	43.4	78.5	50.9	54.3	5	54.8
DIVIDE +	0.0	0.0	0.0	56.6	40.3	70.1	48.2	49.4	5	50.8
DILSE +	38.4	61.2	52.0	57.6	0.0	70.8	0.0	0.0	5	52.2
ALKABO +	0.0	0.0	0.0	55.6	46.2	73.6	51.0	50.3	5	53.1
PIERCE +	40.8	57.3	47.6	59.1	44.6	71.4	46.0	0.0	7	51.6
SILVER +	0.0	0.0	0.0	59.5	0.0	75.8	51.1	47.2	4	53.2

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	TEST WEIGHT (LB/BU) AVE	HEADING DATE (185 = JULY 4) YEARS	HEADING DATE (185 = JULY 4) AVE	PLANT HEIGHT (INCHES) YEARS	PLANT HEIGHT (INCHES) AVE	PROTEIN (%) YEARS	PROTEIN (%) AVE
MOUNTRAIL * +	8	59.0	7	186	8	41.5	6	15.2
CHECK AVE	8	59.0	7	186	8	41.5	6	15.2
KYLE	4	59.7	4	187	4	47.8	3	15.4
MAIER +	4	59.6	4	185	4	40.7	3	16.0
PLAZA +	4	59.1	4	186	4	32.0	3	15.1
AC AVONLEA * +	4	59.9	4	184	4	43.2	3	15.9
ALZADA * (P)+	8	59.8	7	182	8	33.7	6	15.0
STRONGFIELD	5	59.5	4	185	5	40.6	3	16.1
GRENORA +	5	59.7	4	185	5	39.1	3	16.6
DIVIDE +	5	59.9	4	186	5	43.2	3	15.4
DILSE +	5	60.6	5	186	5	41.4	4	16.3
ALKABO +	5	60.2	4	185	5	40.9	3	16.1
PIERCE +	7	60.4	6	185	7	43.5	6	15.1
SILVER +	4	60.3	3	183	4	32.7	2	16.9

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

[1] Comparable averages when using less than three years data are not very reliable

DURUM WHEAT
DISTRICT 3
HUNTLEY DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YEARS	TEN YEAR COMPARABLE AVERAGE[1]
MOUNTRAIL +	30.3	32.7	38.3	39.0	73.7	62.1	55.9	82.8	54.5	36.3	10	50.6
CHECK AVE	30.3	32.7	38.3	39.0	73.7	62.1	55.9	82.8	54.5	36.3	10	50.6
KYLE	34.7	32.3	32.9	30.8	0.0	0.0	0.0	0.0	0.0	0.0	4	47.1
MAIER +	30.2	32.7	38.0	33.2	0.0	0.0	0.0	0.0	0.0	0.0	4	48.3
PLAZA +	30.4	31.0	40.6	34.5	0.0	0.0	0.0	0.0	0.0	0.0	4	49.2
AC AVONLEA +	32.2	28.8	44.2	38.3	0.0	0.0	0.0	0.0	0.0	0.0	4	51.7
ALZADA (P)+	34.3	29.3	46.2	31.2	68.7	62.0	47.0	74.2	61.6	45.6	10	50.0
STRONGFIELD	0.0	0.0	0.0	31.8	69.4	61.2	55.1	84.2	60.5	40.6	7	50.4
GRENORA +	0.0	0.0	0.0	35.3	74.2	60.8	54.8	78.3	59.3	39.9	7	50.4
DIVIDE +	0.0	0.0	0.0	37.4	71.2	58.6	53.5	84.3	59.7	40.3	7	50.7
DILSE +	29.6	28.4	39.9	31.2	0.0	59.9	39.9	0.0	0.0	0.0	6	44.8
ALKABO +	0.0	0.0	0.0	31.5	71.9	63.3	49.2	91.2	58.0	39.1	7	50.6
PIERCE +	31.4	29.1	39.6	34.5	64.2	56.3	49.5	80.8	52.7	0.0	9	47.2
SILVER +	0.0	0.0	0.0	36.6	0.0	0.0	49.2	84.3	61.7	40.3	5	51.2

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	TEST WEIGHT (LB/BU) AVE	HEADING DATE (164 = JUNE 13) YEARS	HEADING DATE (164 = JUNE 13) AVE	PLANT HEIGHT (INCHES) YEARS	PLANT HEIGHT (INCHES) AVE	PROTEIN (%) YEARS	PROTEIN (%) AVE
MOUNTRAIL +	10	59.5	7	167	10	35.4	8	13.3
CHECK AVE	10	59.5	7	167	10	35.4	8	13.3
KYLE	4	60.2	4	168	4	39.6	4	12.9
MAIER +	4	59.7	4	167	4	34.9	4	13.8
PLAZA +	4	58.8	4	168	4	30.4	4	12.9
AC AVONLEA +	4	60.7	4	166	4	37.6	4	13.5
ALZADA (P)+	10	60.3	7	164	10	29.7	8	12.8
STRONGFIELD	7	60.4	4	168	7	34.7	5	13.4
GRENORA +	7	60.0	4	167	7	32.6	5	13.2
DIVIDE +	7	60.5	4	167	7	35.8	5	12.8
DILSE +	6	60.3	5	168	6	34.4	5	13.9
ALKABO +	7	60.6	4	167	7	34.5	5	12.8
PIERCE +	9	60.7	6	166	9	36.3	8	13.3
SILVER +	5	60.2	3	164	5	28.8	4	13.4

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

[1] Comparable averageswhen using less than three years data are not reliable

DURUM WHEAT
DISTRICT 4
MOCCASIN DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2003	2005	2006	2007	2009	2010	2011	2012	YEARS	EIGHT YEAR COMPARABLE AVERAGE[1]
MOUNTRAIL * +	18.8	23.0	31.5	29.8	26.9	41.8	20.3	21.4	8	26.7
CHECK AVE	18.8	23.0	31.5	29.8	26.9	41.8	20.3	21.4	8	26.7
KYLE	15.1	22.7	34.4	0.0	0.0	0.0	0.0	0.0	3	26.3
MAIER +	12.8	23.7	32.7	0.0	0.0	0.0	0.0	0.0	3	25.2
PLAZA +	11.6	24.2	35.5	0.0	0.0	0.0	0.0	0.0	3	26.0
AC AVONLEA * +	14.8	24.0	33.0	0.0	0.0	0.0	0.0	0.0	3	26.2
ALZADA * (P)+	13.8	30.3	31.8	35.4	26.0	44.8	24.8	22.0	8	28.6
STRONGFIELD	0.0	0.0	38.7	29.7	29.8	42.8	19.1	23.6	6	28.6
GRENORA +	0.0	0.0	39.0	30.1	26.5	39.9	18.3	20.6	6	27.1
DIVIDE +	0.0	0.0	37.1	33.1	26.9	41.3	20.1	20.1	6	27.8
DILSE +	9.5	22.8	31.9	0.0	23.4	0.0	0.0	0.0	4	23.4
ALKABO +	0.0	0.0	37.0	29.0	29.1	44.4	20.3	22.0	6	28.3
PIERCE +	14.1	21.7	33.5	26.5	23.8	41.1	17.9	0.0	7	24.8
SILVER +	0.0	0.0	29.4	0.0	27.9	38.3	21.1	19.1	5	25.5

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

	TEST WEIGHT (LB/BU)		HEADING DATE (185 = JULY 4)		PLANT HEIGHT (INCHES)		PROTEIN %	
VARIETY	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	8	57.0	5	181	8	28.3	7	15.9
CHECK AVE	8	57.0	5	181	8	28.3	7	15.9
KYLE	3	58.3	3	183	3	33.7	3	15.3
MAIER +	3	57.5	3	181	3	27.5	3	15.4
PLAZA +	3	56.6	3	182	3	24.8	3	15.1
AC AVONLEA * +	3	58.4	3	179	3	31.2	3	14.6
ALZADA * (P)+	8	58.2	5	178	8	25.8	7	14.3
STRONGFIELD	6	58.0	3	182	6	28.8	5	16.0
GRENORA +	6	58.5	3	180	6	27.4	5	14.7
DIVIDE +	6	58.5	3	181	6	29.9	5	15.3
DILSE +	4	57.8	4	182	4	27.7	4	15.5
ALKABO +	6	59.7	3	180	6	28.9	5	15.1
PIERCE +	7	59.0	4	180	7	29.9	7	15.4
SILVER +	5	57.1	3	177	5	24.1	4	15.7

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

[1] Comparable averages when using less than three years data are not reliable

DURUM WHEAT
DISTRICT 5
HAVRE DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YEARS	TEN YEAR COMPARABLE AVERAGE[1]
MOUNTRAIL * +	11.6	44.3	46.7	25.8	36.5	39.8	41.1	58.0	39.4	27.9	10	37.1
CHECK AVE	11.6	44.3	46.7	25.8	36.5	39.8	41.1	58.0	39.4	27.9	10	37.1
KYLE	12.5	49.9	46.0	30.2	0.0	0.0	0.0	0.0	0.0	0.0	4	40.1
MAIER	10.0	43.5	48.5	29.9	0.0	0.0	0.0	0.0	0.0	0.0	4	38.1
PLAZA	12.4	41.8	50.3	29.6	0.0	0.0	0.0	0.0	0.0	0.0	4	38.8
AC AVONLEA * +	8.1	44.7	49.9	31.2	0.0	0.0	0.0	0.0	0.0	0.0	4	38.7
ALZADA * (P) +	9.1	47.7	46.2	30.6	44.7	45.2	39.5	58.4	43.9	34.4	10	40.0
STRONGFIELD	0.0	0.0	0.0	31.2	37.8	46.6	45.8	67.9	40.7	27.8	7	41.2
GRENORA +	0.0	0.0	0.0	29.7	37.0	41.4	42.8	57.7	36.5	26.0	7	37.5
DIVIDE +	0.0	0.0	0.0	27.1	37.6	39.1	44.7	57.0	36.4	28.0	7	37.3
DILSE +	11.1	41.4	48.6	25.2	0.0	40.8	42.0	0.0	0.0	0.0	6	37.1
ALKABO +	0.0	0.0	0.0	27.1	35.0	40.5	41.4	60.7	39.5	29.7	7	37.9
PIERCE +	11.6	40.6	41.9	25.3	32.8	38.8	36.7	50.3	40.0	0.0	9	34.4
SILVER +	0.0	0.0	0.0	29.9	0.0	0.0	40.1	55.3	40.4	28.3	5	37.5

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	TEST WEIGHT (LB/BU) AVE	HEADING DATE (180 = JUNE 29) YEARS	HEADING DATE (180 = JUNE 29) AVE	PLANT HEIGHT (INCHES) YEARS	PLANT HEIGHT (INCHES) AVE	PROTEIN (%) YEARS	PROTEIN (%) AVE
MOUNTRAIL * +	10	57.1	7	180	9	29.7	10	16.4
CHECK AVE	10	57.1	7	180	9	29.7	10	16.4
KYLE	4	58.4	4	180	4	32.8	4	16.1
MAIER	4	58.0	4	179	4	28.9	4	16.5
PLAZA	4	57.8	4	179	4	26.1	4	15.5
AC AVONLEA * +	4	57.9	4	177	4	30.4	4	16.2
ALZADA * (P) +	10	57.2	7	175	9	26.3	10	15.5
STRONGFIELD	7	57.7	4	179	6	30.2	7	16.8
GRENORA +	7	57.5	4	178	6	27.4	7	15.8
DIVIDE +	7	57.8	4	178	6	29.7	7	16.0
DILSE +	6	58.1	5	180	6	29.9	6	16.6
ALKABO +	7	58.3	4	177	6	29.0	7	16.0
PIERCE +	9	58.1	6	179	8	30.1	9	16.1
SILVER +	5	57.5	3	174	4	25.2	5	15.7

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

[1] Comparable averages when using less than three years data are not reliable

DURUM WHEAT
DISTRICT 5
CONRAD DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YEARS	TEN YEAR COMPARABLE AVERAGE[1]
MOUNTRAIL * +	39.2	61.8	47.9	63.2	35.3	36.8	74.9	78.4	60.8	77.3	10	57.6
CHECK AVE	39.2	61.8	47.9	63.2	35.3	36.8	74.9	78.4	60.8	77.3	10	57.6
KYLE	33.1	57.1	50.1	61.1	0.0	0.0	0.0	0.0	0.0	0.0	4	54.7
MAIER +	46.0	57.8	54.5	60.1	0.0	0.0	0.0	0.0	0.0	0.0	4	59.3
PLAZA +	39.1	60.7	50.2	58.3	0.0	0.0	0.0	0.0	0.0	0.0	4	56.5
AC AVONLEA * +	42.5	62.3	55.4	65.9	0.0	0.0	0.0	0.0	0.0	0.0	4	61.4
ALZADA * (P)+	42.2	64.6	59.8	64.2	43.5	46.3	67.7	72.5	68.2	73.2	10	60.2
STRONGFIELD	0.0	0.0	0.0	64.8	39.4	50.7	94.0	92.5	62.1	84.5	7	65.8
GRENORA +	0.0	0.0	0.0	63.0	39.7	41.6	72.8	89.5	67.2	73.7	7	60.4
DIVIDE +	0.0	0.0	0.0	62.7	36.2	41.4	68.3	77.8	60.1	72.8	7	56.6
DILSE +	31.5	62.2	47.3	60.7	0.0	39.7	70.0	0.0	0.0	0.0	6	55.4
ALKABO +	0.0	0.0	0.0	64.1	41.3	40.3	67.5	83.4	68.1	80.8	7	60.1
PIERCE +	37.7	56.7	50.9	63.4	32.1	40.6	70.5	71.0	58.2	0.0	9	55.6
SILVER +	0.0	0.0	0.0	65.0	0.0	0.0	69.9	68.8	76.9	71.3	5	57.1

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

	TEST WEIGHT (LB/BU)		HEADING DATE (183 = JULY 2)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
VARIETY	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
MOUNTRAIL * +	10	59.8	7	183	10	36.2	7	14.2
CHECK AVE	10	59.8	7	183	10	36.2	7	14.2
KYLE	4	60.2	4	184	4	40.5	2	14.6
MAIER +	4	61.4	4	182	4	33.1	2	14.5
PLAZA +	4	59.1	4	183	4	28.2	2	15.0
AC AVONLEA * +	4	60.5	4	182	4	36.0	2	15.8
ALZADA * (P)+	10	60.3	7	180	10	29.1	7	14.0
STRONGFIELD	7	60.8	4	183	7	36.4	5	14.3
GRENORA +	7	60.7	4	182	7	33.9	5	14.1
DIVIDE +	7	60.7	4	182	7	36.6	5	14.1
DILSE +	6	61.2	5	183	6	34.0	4	15.0
ALKABO +	7	61.3	4	182	7	35.6	5	13.9
PIERCE +	9	61.2	6	182	9	36.5	7	14.7
SILVER +	5	60.8	3	178	5	26.9	3	13.9

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

[1] Comparable averages when using less than three years data are not reliable

DURUM WHEAT
DISTRICT 6
SIDNEY DRYLAND

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YEARS	TEN YEAR COMPARABLE AVERAGE[1]
MOUNTRAIL * +	53.9	54.2	52.2	34.4	51.9	31.5	29.8	57.3	41.1	34.2	10	44.1
CHECK AVE	53.9	54.2	52.2	34.4	51.9	31.5	29.8	57.3	41.1	34.2	10	44.1
KYLE	51.0	54.8	50.9	29.5	0.0	0.0	0.0	0.0	0.0	0.0	4	42.1
MAIER +	55.2	59.4	50.8	32.2	0.0	0.0	0.0	0.0	0.0	0.0	4	44.7
PLAZA +	51.43	56.3	48.6	28.8	0.0	0.0	0	0.0	0.0	0.0	4	41.9
AC AVONLEA * +	53.8	61.9	47.1	33.8	0.0	0.0	0.0	0.0	0.0	0.0	4	44.5
ALZADA (P)+	54.7	54.3	45.7	33.3	41.6	34.9	28.4	51.9	37.8	38.7	10	42.1
STRONGFIELD	0.0	0.0	0.0	31.6	42.3	35.0	30.6	59.5	36.8	32.7	7	42.2
GRENORA +	0.0	0.0	0.0	32.4	48.8	32.4	30.0	58.3	37.7	32.9	7	42.8
DIVIDE +	0.0	0.0	0.0	32.9	39.7	32.2	27.8	56.1	38.3	33.3	7	40.9
DILSE +	52.6	53.8	49.7	34.2	0.0	32.5	26.9	0.0	0.0	0.0	6	43.0
ALKABO +	0.0	0.0	0.0	35.8	47.6	32.1	27.3	55.9	38.1	37.4	7	43.1
PIERCE +	52.7	54.0	47.6	34.4	46.5	29.7	27.3	55.6	37.0	0.0	9	41.7
SILVER +	0.0	0.0	0.0	32.3	0.0	0.0	29.5	43.8	35.4	31.9	5	38.7

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	TEST WEIGHT (LB/BU) AVE	HEADING DATE (173 = JUNE 22) YEARS	HEADING DATE (173 = JUNE 22) AVE	PLANT HEIGHT (INCHES) YEARS	PLANT HEIGHT (INCHES) AVE	PROTEIN % YEARS	PROTEIN % AVE
MOUNTRAIL * +	10	60.0	6	172	10	28.7	8	14.1
CHECK AVE	10	60.0	6	172	10	28.7	8	14.1
KYLE	4	60.3	4	173	4	32.5	2	13.3
MAIER +	4	60.4	4	172	4	27.3	2	14.1
PLAZA +	4	59.5	4	173	4	24.8	2	13.7
AC AVONLEA * +	4	60.5	4	171	4	28.9	2	13.8
ALZADA (P)+	10	60.3	6	168	10	25.4	8	13.6
STRONGFIELD	7	59.8	3	173	7	30.3	7	14.6
GRENORA +	7	60.0	3	172	7	28.5	7	14.0
DIVIDE +	7	60.6	3	173	7	30.1	7	13.7
DILSE +	6	60.5	5	172	6	29.2	4	14.2
ALKABO +	7	61.0	3	172	7	28.9	7	14.1
PIERCE +	9	60.5	5	172	9	29.3	7	14.1
SILVER +	5	60.1	3	169	5	24.3	5	13.9

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

[1] Comparable averages when using less than three years data are not reliable

DURUM WHEAT
DISTRICT 6
SIDNEY IRRIGATED

2003-2012 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	YRS	TEN YEAR COMPARABLE AVERAGE[1]
MOUNTRAIL * +	125.3	62.4	61.2	88.3	55.7	109.1	99.9	61.2	54.5	82.6	10	80.0
CHECK AVE	125.3	62.4	61.2	88.3	55.7	109.1	99.9	61.2	54.5	82.6	10	80.0
KYLE	89.3	61.5	64.6	73.5	0.0	0.0	0.0	0.0	0.0	0.0	4	68.5
MAIER +	117.6	56.9	51.1	78.5	0.0	0.0	0.0	0.0	0.0	0.0	4	72.1
PLAZA +	118.4	56.1	58.8	67.6	0.0	0.0	0.0	0.0	0.0	0.0	4	71.4
AC AVONLEA * +	106.0	66.7	48.2	81.5	0.0	0.0	0.0	0.0	0.0	0.0	4	71.8
ALZADA (P)+	100.6	64.6	65.7	63.1	25.7	86.5	77.3	27.0	31.3	58.5	10	60.0
STRONGFIELD	0.0	0.0	0.0	69.3	43.2	89.1	101.9	59.3	44.4	66.0	7	68.7
GRENORA +	0.0	0.0	0.0	83.4	54.3	82.8	106.6	70.5	54.0	76.9	7	76.7
DIVIDE +	0.0	0.0	0.0	86.1	47.4	94.1	104.7	73.2	44.1	73.2	7	75.9
DILSE +	110.8	70.3	54.8	84.4	0.0	93.7	98.1	0.0	0.0	0.0	6	75.0
ALKABO +	0.0	0.0	0.0	87.2	45.9	109.1	96.7	59.4	49.7	78.2	7	76.4
PIERCE +	115.5	65.3	70.9	88.4	41.6	82.2	100.5	71.2	49.3	0.0	9	76.4
SILVER +	0.0	0.0	0.0	70.1	0.0	0.0	83.8	43.9	33.2	66.6	5	61.6

2003-2012 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU) YEARS	TEST WEIGHT (LB/BU) AVE	HEADING DATE (177 = JUNE 26) YEARS	HEADING DATE (177 = JUNE 26) AVE	PLANT HEIGHT (INCHES) YEARS	PLANT HEIGHT (INCHES) AVE	PROTEIN % YEARS	PROTEIN % AVE
MOUNTRAIL * +	10	60.9	6	176	10	34.2	8	13.6
CHECK AVE	10	60.9	6	176	10	34.2	8	13.6
KYLE	4	60.8	4	178	4	42.5	2	13.4
MAIER +	4	61.3	4	175	4	34.6	2	13.7
PLAZA +	4	60.6	4	177	4	29.8	2	12.9
AC AVONLEA * +	4	61.1	4	174	4	36.9	2	13.8
ALZADA (P)+	10	59.2	6	172	10	28.9	8	14.1
STRONGFIELD	7	60.4	3	176	7	33.5	7	14.3
GRENORA +	7	60.7	3	175	7	31.8	7	13.7
DIVIDE +	7	61.3	3	177	7	35.0	7	13.7
DILSE +	6	61.4	5	176	6	33.8	4	13.7
ALKABO +	7	61.3	3	175	7	33.6	7	13.5
PIERCE +	9	61.6	5	175	9	35.6	7	13.7
SILVER +	5	58.9	3	172	5	28.9	5	14.2

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

[1] Comparable averages when using less than three years data are not reliable

HARD RED SPRING WHEAT VARIETY BRIEF DECRIPTIONS

Variety	Origin	Year Released	Plant Height	Maturity	Lodging	Stem Rust
AP604 CL	AgriPro Associates	2007	Semidwarf	Early	R	R
Brennan	Syngenta Seeds	2009	Semidwarf	Early	R	R
Choteau	Montana	2003	Semidwarf	Medium	R	R
Conan	WestBred, LLC.	1997	Semidwarf	Medium	R	R
Corbin	WestBred, LLC.	2006	Semidwarf	Early	R	-
Duclair	Montana	2011	Semidwarf	Medium	R	R
Hank	WestBred, LLC.	1999	Semidwarf	Early	R	R
Jedd	WestBred, LLC.	2008	Semidwarf	Early	R	R
Kelby	AgriPro Wheat	2006	Semidwarf	Early	R	-
Kuntz	AgriPro Wheat	2007	Semidwarf	Med-early	R	R
McNeal	Montana	1995	Semidwarf	Mid-Late	R	R
ONeal	WestBred, LLC.	2008	Semidwarf	Medium	R	MR
Outlook	Montana	2003	Semidwarf	Mid-Late	R	-
Reeder	North Dakota	1999	Semidwarf	Med-early	MR	R
Sy Tyra	Syngenta Seeds	2010	Semidwarf	Med-early	R	-
Vida	Montana	2005	Semidwarf	Mid-late	MR	MR
Volt	WestBred, LLC.	2008	Semidwarf	Late	R	-
WB Gunnison	WestBred, LLC.	2011	Semidwarf	Early	R	-
WB9879CLP	WestBred-Monsanto	2012	Semidwarf	Medium	R	R

DURUM WHEAT VARIETY BRIEF DECRIPTIONS

Variety	Origin	Year Released	Maturity	Plant Height
AC Avonlea	AG Canada	1999	Medium	Medium
Alzada	WestBred, LLC.	2004	Early	Semidwarf
Alkabo	North Dakota	2005	Medium	Medium
Dilse	North Dakota	2002	Late	Medium
Divide	North Dakota	2005	Medium	Medium
Grenora	North Dakota	2005	M Early	M tall
Kyle	AG Canada	1984	Medium	Tall
Maier	North Dakota	1999	Med-late	Medium
Mountrail	North Dakota	1999	Late	Medium
Pierce	North Dakota	2001	Medium	Medium
Plaza	North Dakota	1999	Late	Semidwarf
Silver	Montana-EARC	2012	Early	Semidwarf
Strongfield	AG Canada	2004	Medium	Medium

2009-2012 Stem solidness, sawfly damage and grain yields under sawfly pressure

STEM SOLIDNESS

VARIETY	2009 DRY	BOZEMAN 2009 IRR	2010 DRY	BOZEMAN 2011 DRY	BOZEMAN 2011 IRR	BOZEMAN 2012 DRY	BOZEMAN 2012 IRR	AVE
VIDA	8.1	9.0	13	11.1	7.6	12.4	9.6	10.1
CHOTEAU	23.4	21.2	20.1	23.6	20.4	21	22.1	21.7
DUCLAIR	17.0	15.7	20.7	21.5	18	22.9	20.6	19.5
FORTUNA	19.8	15.6	17.7	21.9	16.5	20.7	16.0	18.3
MCNEAL	5.4	6.4	7.1	8.5	6.4	5.9	6.5	6.6
REEDER	5.4	5.3	6.3	8.4	6.7	5.9	6.3	6.3
HANK	6.5	5.5	8.1	8.9	7.9	-	-	7.4
CORBIN	8.4	6.8	9.4	13.5	9.6	10.6	9.3	9.7
VOLT	5.9	5.4	8.8	8.2	6.1	5.8	6.0	6.6
ONEAL	5.5	5.7	8.4	12.5	7.1	6.3	6.6	7.4
JEDD	6.9	5.9	7.8	10	8.1	6.5	6.8	7.4
KELBY	5.6	5.5	6.1	8.9	7	5.7	6.5	6.5
AP604CL	6.1	7.2	12.1	7.1	7.1	9.9	6.1	7.9
MOTT	14.2	15.9	17	18.1	16.2	17.9	13.4	16.1
BRENNAN	8.4	7.1	8.4	8	7.1	6.5	7	7.5
WB GUNNISON	9.2	6.3	10.1	12.2	9.1	11.2	8.4	9.5
SY TYRA	11.5	10.6	14.8	19.1	11.7	15.5	16.1	14.2
WB9879CLP	-	-	23	23.5	20.3	24.3	22.7	22.8

SAWFLY DAMAGE (% STEMS CUT)

VARIETY	2010 LORING	2010 TURNER	2010 HAVRE	2011 LORING	2011 TURNER	2011 HAVRE	2012 TURNER	2012 LORING	2012 HAVRE	AVE
VIDA	10.0	18.3	8.4	18.3	26.7	11.1	33.3	10.0	7.2	15.9
CHOTEAU	8.3	13.3	29.4	16.7	36.7	30.3	28.3	6.7	10.9	20.1
DUCLAIR	10.0	13.7	16.1	15.0	33.3	26.6	30.0	6.7	9.2	17.8
FORTUNA	11.7	8.3	22.4	6.7	28.3	19.2	20.0	6.7	10.5	14.9
MCNEAL	20.0	25	26.9	20.0	80.0	35.6	61.7	25.0	31.6	36.2
REEDER	10.3	16.7	29.6	18.3	53.3	15.8	33.3	15.0	20.5	23.6
HANK	5.0	8.3	32.2	11.7	58.3	15.7	28.3	11.7	-	-
CORBIN	5.3	10.3	13.5	10.0	21.7	7.1	18.3	3.7	8.6	10.9
VOLT	15.0	21.7	61.5	23.3	93.3	16.8	76.7	26.7	53.7	43.2
ONEAL	2.3	2.3	10.9	16.7	40.0	10.2	35.0	8.3	8.4	14.9
JEDD	2.3	3.7	21.9	10.0	43.3	8.1	16.7	11.7	9.3	14.1
KELBY	3.7	8.7	25.3	15.0	30.2	14.7	21.7	15.0	9.6	16.0
AP604CL	20.0	8.3	23.4	15.0	38.3	14.0	28.3	18.3	17.9	20.4
MOTT	1.0	3.7	10.3	5.0	5.0	12.8	1.0	1.0	3.1	4.8
BRENNAN	-	-	19.5	-	-	9	-	-	13.1	-
WB GUNNISON	-	-	-	5.0	6.7	4.7	2.3	1.0	1.0	-
SY TYRA	-	-	19.9	15.0	46.7	8.7	23.3	11.7	9.2	-
WB9879CLP	-	-	18.3	13.3	40.0	27.2	16.7	2.3	10.0	-

GRAIN YIELD (BU/AC)

VARIETY	2010 LORING	2010 TURNER	2010 HAVRE	2011 LORING	2011 TURNER	2011 HAVRE	2012 TURNER	2012 LORING	2012 HAVRE	AVE
VIDA	36.9	25.6	59.3	38.0	34.7	43.8	25.6	33.1	35.4	36.9
CHOTEAU	29.6	32.6	54.8	34.2	30.6	38.7	23.6	28.2	30.5	33.6
DUCLAIR	34.9	36.7	53.6	33.5	31.4	42.8	25.2	30.1	33.9	35.8
FORTUNA	26.4	24.4	48.7	34.3	29.2	39.8	20.4	25.5	32.7	31.3
MCNEAL	29.3	32.7	48.8	33.2	28.0	37.1	20.9	27.3	33.2	32.3
REEDER	32.9	30.9	55.2	34.9	27.3	42.0	24.7	30.9	31.4	34.5
HANK	30.2	36.5	56.2	32.8	24.2	41.5	22.8	32.0	-	-
CORBIN	30.5	32.7	52.8	36.6	32.4	45.0	24.1	32.7	32.1	35.4
VOLT	34.7	27.2	49.0	34.6	26.3	49.9	17.8	23.2	27.9	32.3
ONEAL	36.3	37.1	59.2	40.5	30.1	46.9	24.3	34.2	34.1	38.1
JEDD	36.2	41.5	52.6	32.5	26.5	40.7	21.0	32.6	33.9	35.3
KELBY	35.1	32.9	47.3	33.3	24.5	41.2	17.8	26.2	35.9	32.7
AP604CL	30.1	32.4	44.4	33.0	24.8	41.8	21.2	30.0	30.1	32.0
MOTT	32.8	30.3	51.5	37.4	31.8	41.1	24.0	28.2	30.6	34.2
BRENNAN	-	-	53.3	-	-	36.9	-	-	38.3	-
WB GUNNISON	-	-	-	34.9	33.0	45.3	25.0	33.8	33.3	-
SY TYRA	-	-	51.7	34.0	25.6	40.7	21.3	31.0	26.4	-
WB9879CLP	-	-	54.0	38.9	35.0	39.9	25.2	32.3	30.4	-

NURSERY MANAGEMENT INFORMATION FOR THE 2012 ADVANCED SPRING WHEAT NURSERY

DISTRICT	Bozeman irrigated 2	Bozeman dryland 2	Havre 5	Sidney dryland 6	Sidney irrigated 6	Kalispell 1	Moccasin 4	Huntley dryland 3	Conrad dryland 5
Location:									
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
Precipitation:									
Avg. annual moisture (in.)[1]	15.94	15.94	11.93	13.97	13.97	20.24	15.29	13.23	11.63
2011-12 annual moisture (in.)	9.00	9.00	9.46	9.03	9.25	20.16	10.99	8.40	10.29
2011-12 Moisture(Apr.-July)	5.55	5.55	7.33	7.02	7.25	11.98	6.50	3.48	5.81
Avg. moisture (Apr.-July)	8.36	8.36	6.79	8.14	8.14	9.3	8.58	6.97	7.31
Irrigation water applied (in.)	7.0				5.4				
Previous Crop:									
2009	Fallow	Fallow	Fallow	Smallgrain	Smallgrain		Safflower		Fallow
2010	Winter wheat	Winterwheat	Spr. Wheat	Safflower	Sugar beet		Barley		Barley
2011	Fallow	Fallow	Fallow	Fallow	Safflower		Chem.falllow	Chem.falllow	Fallow
Soil Type:									
Series	Amsterdam	Amsterdam	Telstad	Williams	Savage	Creston	Judith-Danvers	Fort Collins	Scobey
Texture[2]	SiL	SiL	CL	CL	SiC	SiL	CL	SiL	CL
Fertilization:									
Available N (lb/ac)	120	100	95	66	157	124	36		44
Applied N-P-K (actual lb/ac)	125/30/0	100/20/0	100-20-10	40	200	150/40/75	70/10/10	60/20/0	154-22-20
Planting date	5/7/12	5/3/12	4/22/12	4/11/12	4/23/12	4/13/12	4/17/12	3/16/12	4/17/12
Harvest date	8/23/12	8/16/12	8/7/12	8/2/12	8/20/12	8/1/12	8/8/12	7/23/12	8/16/12

[1] Moisture September 2011- August 2012, Sidney is October 2011- September 2012
[2] 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

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.

BRENNAN - Brennan was developed by Syngenta Seeds, Inc. and released to AgriPro Associates in 2009. Brennan was derived from the cross "Reeder//China Scab #140/N90-0690". It is a hollow stemmed, semidwarf, hard red spring variety that has shown good adaptation across the northern plains including several areas in Montana. It is resistant to stem and leaf rust and has good tolerance to leaf spotting diseases. Its scab rating is intermediate which would make it a good choice for use under irrigation. Brennan 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.

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.

DUCLAIR - Developed and released by the Montana Agricultural Experiment Station in 2011. Duclair was derived from a cross of Choteau//ND695/MT9433. Duclair is an awned semidwarf hard red spring wheat heading one day earlier than and growing ~ one inch taller than Choteau. Duclair generally has more solid stems than Fortuna but slightly less than Choteau. Duclair is resistant to the prevalent races of stem rust and has moderately good resistance to stripe rust in Montana. Duclair exhibits acceptable milling and baking traits. 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.

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.

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. 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.

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.

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. 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.

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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.

SY TYRA - a hard red spring wheat initially developed at Montana State University 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 charaterisitcs. 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. 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.

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 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.

WB9879CLP - WB9879CLP was derived from the cross of Choteau*3//Choteau/IMI8134 made in 2004 to be used as a Clearfield wheat . WB9879CLP is an awned semidwarf hard red spring wheat heading one and a half days later than Choteau while plant height is 30 inches the same as Choteau. WB9879CLP has solid stems similar to Choteau averaging 20-23 over two years. WB9879CLP exhibits acceptable milling and baking quality traits similar to Choteau. WB9879CLP is currently licensed exclusively to WestBred-Monsanto with PVP title V protection.

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 lspikes 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.

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.

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.

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.

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.

SILVER – Was developed by the Montana Agricultural Experiment Station and released in 2012. It was selected from a male sterile facilitated recurrent selection population developed from desert durum lines . It is day length-insensitive. It is short and has early maturity. It has medium to high protein content and good gluten strength. Semolina color is average.

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. 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.

* 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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