

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 (1995-2004) 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; Newana, Fortuna, Hi-Line, Amidon, Ernest and McNeal. 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: (Outlook - 6 years at Havre-dryland, page 10)

Check Varieties 10 Year Average = 37.5
Check Varieties Average Yield for last 6 years = 31.3
Variety (Outlook) in question: Average Yield for last 6 years = 36.3

$\frac{\text{Outlook 6 year average yield}}{\text{Check varieties 6 year average yield}}$ or $\frac{36.3}{31.3} = 1.161$ (116.1%)

To convert Outlook yield to the 10 year comparable average:

1.161 (Outlook) x 37.5 (Check varieties 10 yr. avg.) = 43.5 bu/A for Outlook

The comparable averages for the durum wheats were calculated by using Vic 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 55 to 75 percent of the total wheat acreage planted. In 2004, spring wheat accounted for ~ 55 % and durum 10% of the total wheat acreages.¹ Nationally, in 2004, Montana ranked second among the spring wheat and durum producing states.

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

Montana has been recognized for its 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 2003 were Roosevelt, Valley and McCone.

Over 98% of durum wheat is grown on dryland, and in 2003 the highest producing counties were Sheridan, Roosevelt, and Daniels counties 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 1 or 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 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.

¹ Montana Agricultural Statistics, 2004 . Montana Agricultural Statistics Service, Helena, MT (November 2004).

VARIETY TESTING PROCEDURES

Locations

In 2004, the Advanced Spring Wheat nursery was planted at 10 Montana sites; including, Bozeman (dryland and irrigated), Kalispell (high rainfall), Havre (dryland), Sidney (dryland and irrigated), Huntley (dryland and irrigated), 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 and irrigated). 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. Entries are bulked over reps and 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 wheat 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.

SPRING WHEAT VARIETY

Agronomic Characteristics

Variety	Origin	Year Released	Milling ^{1/}	Baking ^{1/}	Plant Height	Maturity	Lodging	Shattering
HARD RED								
Amidon	North Dakota	1988	5	4	Tall	Medium	M	M
Ernest	North Dakota	1995	5	4	Tall	Medium	M	M
Fortuna	North Dakota & Montana	1966	5	4	Tall	Medium	M	S
Scholar	Montana	1998	5	4	Med-Tall	Mid-Late	MR	
Reeder	North Dakota	1999	4	4	Semidwarf	Med-early	MR	
Conan	Western Plant Breeders	1997	3	3	Semidwarf	Medium	R	-
Express	Western Plant Breeders	1991	4	4	Semidwarf	Medium	R	
Hank	Western Plant Breeders	1999	3	5	Semidwarf	Early	R	R
Hi-Line	Montana	1992	3	5	Semidwarf	Medium	R	R
Knudson	AgriPro Wheat	2001	3	4	Semidwarf	Medium	R	R
McNeal	Montana	1995	3	5	Semidwarf	Mid-Late	R	R
Newana	Montana	1976	2-3	5	Semidwarf	Mid-Late	R	R
Norpro	AgriPro Wheat	2000	3	4	Semidwarf	Medium	R	R
WestBred 926	Western Plant Breeders	1987	4	5	Semidwarf	Early	R	M
WestBred 936	Western Plant Breeders	1992	4	4	Semidwarf	Early	R	-
Outlook	Montana	2003	3	4	Semidwarf	Mid-Late	R	R
Choteau	Montana	2003	4	4	Semidwarf	Medium	R	R
HARD WHITE								
MTHW9420	Montana	2000	3	3	Semidwarf	Medium	R	R
Explorer	Montana	2002	4	5	Semidwarf	Medium	R	R

^{1/} Superior = 5, Inferior = 1; ^{2/} Weak under irrigation; Legend: R = Resistant , MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, T = Tolerant, - = unknown

**SPRING WHEAT VARIETY
Insect and Disease Reaction**

Variety	Sawfly	Stripe Rust	Leaf Rust	Stem Rust	Leaf Spot Complex
HARD RED					
Standard					
Amidon	MR	R	R	R	M
Ernest	R	R	R	R	R
Fortuna	R	MR	R	R	S
Scholar	MR	MS	MR	R	--
Semidwarf					
Express	S	R	R	-	MR
Hank	S	R	R	R	-
Hi-Line	S	MS	S	R	M
Knudson	S	M	R	R	-
McNeal	S	MS	MS	MR	R
Newana	S	MS	S	R	M
Reeder	S	MS	MR	R	MR
Norpro	S	M	MR	R	-
WestBred 926	S	R	R	R	M
WestBred 936	S	R	S	R	M
Outlook	S	MR	MR	R	-
Choteau	R	-	-	R	-
HARD WHITE					
MTHW9420	S	MR	MR	R	MR
Explorer	MR	MR	MR	R	S

R = Resistant , MR = Moderately Resistant, MS = Moderately Susceptible, S = Susceptible, T = Tolerant, - = 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	-
Alzada	WestBred, LLC.	2004	Early	Semidwarf	R	R	-	-
Ben	North Dakota	1996	Medium	Medium	MS	R	R	R
Kyle	AG Canada	1984	Medium	Tall	-	MR	R	-
Lebsock	North Dakota	1999	Medium	Medium	-	R	R	-
Maier	North Dakota	1999	Med-late	Medium	-	R	R	-
Monroe	North Dakota	1985	Early	Tall	MS	R	R	-
Mountrail	North Dakota	1999	Late	Medium	-	R	R	-
Munich	North Dakota	1995	Medium	Medium	-	R	R	-
Plaza	North Dakota	1999	Late	Semidwarf	-	R	R	-
Sceptre	AG Canada	1986	Mid-Early	Medium	S	-	R	-
Utopia	World Wide Wheat	1996	Early	Semidwarf	-	-	-	-
Vic	North Dakota	1979	Mid-Early	Tall	MR	MR	R	MR

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

NURSERY MANAGEMENT INFORMATION FOR THE 2004 ADVANCED SPRING WHEAT NURSERY

¹ Moisture September- August, Sidney is October- September

DISTRICT	Bozeman irrigated	Bozeman dryland	Havre	Sidney dryland	Sidney irrigated	Kalispell	Moccasin	Huntley dryland	Huntley irrigated	Conrad dryland
	2	2	5	6	6	1	4	3	3	5
Location:										
Latitude °N	45° 41'	45° 41'	48° 30'	47° 40'	47° 40'	48° 10'	47° 03'	45° 55'	45° 55'	48° 18.4'
Longitude °W	111° 00'	111° 00'	109° 48'	104° 08'	104° 08'	114° 15'	109° 57'	108° 15'	108° 15'	111° 55.5'
Elevation (ft)	4772	4772	2689	2200	1950	2890	4300	3200	3200	3700
Precipitation:										
Avg. moisture (in.) ¹	15.96	15.96	12.10	13.83	13.83	19.65	15.36	13.16	13.16	11.30
2004moisture (in.)	13.36	13.36	14.43	14.42	11.48	18.84	13.48	9.43	9.43	10.86
2004Moisture (Apr.-July)	7.82	7.82	8.64	6.96	5.37	6.75	6.43	5.23	5.58	5.93
Avg. moisture (Apr.-July)	8.25	8.25	6.86	8.01	8.01	8.3	6.86	6.91	6.91	7.03
Irrigation water applied (in.)	4.00				3.00					
Previous Crop:										
2001	Winter wheat	Winter wheat	Fallow	Sm.grains	Barley	alfalfa	-	-	-	-
2002	Oats	Oats	Barley	Safflower	Sugarbeets	alfalfa	-	-	-	-
2003	fallow	Fallow	Fallow	Fallow	Safflower	alfalfa	fallow	fallow	Sugar beets	Fallow
Soil Type:										
Series	Amsterdam	Amsterdam	Scobey	Williams	Savage	Creston	Judith-Danvers	Fort Collins	Fort Collins	Scobey
Texture ²	SiL	SiL	CL	CL	SiC	SiL	CL	SiL	SiL	CL
Fertilization:										
Available N (lb/ac)	140	140	86	121	80			50	150	
Applied N-P-K (actual lb/ac)	60/40/40	60/40/40	70/40/25	0/0/0	36 (lb.N)	116/30/120				11/52/0
Planting date	4/12/04	4/13/04	4/20/04	4/12/04	4/21/04	4/6/04	4/12/04	3/16/04	3/16/04	4/20/04
Harvest date	9/3/04	8/22/04	8/20/04	8/13/04	8/23/04	8/19/04		7/23/04	8/3/043	8/18/04
		Statewide	Statewide	Statewide	Statewide		Statewide	Statewide		Statewide
		Durum	Durum	Durum	Durum		Durum	Durum		Durum
Planting date		4/13/04	4/20/04	4/9/04	4/21/04			3/16/04		Dry-4/20/04
Harvest date		9/1/04	8/21/04	8/12/04	8/20/04			7/21/04		8/18/04
										Irr- 4/21/04
										9.5/04

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

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.

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. Across 38 location years (2000-2003) in Montana, Choteau had yields similar to McNeal. 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 Western Plant Breeders 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.

ERNEST - Developed from the cross ND 622*2/Cutless, made by the North Dakota Agricultural Experiment Station and released in 1995. Ernest is an awned, white chaffed, standard height, solid stemmed hard red spring wheat. It is resistant to wheat stem sawfly, prevalent races of leaf rust and stem rust. 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.

EXPRESS - Developed from the cross of Veery/BH1146 by Western Plant Breeders. It is a semidwarf, hard red spring wheat released in 1991. Some plants in the population may average 3-5 inches taller than the average plant height of the field. The spike is awned, white chaffed with glumes being long, oblique shouldered and acuminate beaks. The kernels are red, elliptical shaped, long brush and rounded cheeks. Express is resistant to leaf rust, stripe rust, powdery mildew and Septoria tritici. 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 Western Plant Breeders and released in 2000. Hank was derived from the cross of WestBred 926/WestBred 936. Hank is an early maturing white chaffed, awned, semi-dwarf 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).

HI-LINE - Developed from the cross MT 7336/Shortana, made cooperatively by the Montana Agricultural Experiment Station and the Agricultural Research Service, USDA. It was released in March 1992. Hi-Line is a semidwarf, hard red spring wheat. The variety is white chaffed, white strawed, hollow stemmed with an awned spike. The glumes are glabrous and may vary in color from white to tan. Its kernels are red, ovate, and short with a mid-length brush. The spike tends to nod slightly at maturity. Hi-Line is resistant to lodging. Under some climatic conditions a few spikes will elongate 2-5 inches above the overall field height. Hi-Line is resistant to prevalent races of stem rust found in Montana. It is susceptible to leaf rust and stripe rust. The milling and baking quality of this variety is acceptable to industry.

KNUDSON – Derived from the cross “Karl/Krona//Bergen/Hamer(sib)” and released in 2001 by AgriPro Wheat. Knudson is hard red spring wheat that is awned, white chaffed and hollow-stemmed. It has medium-early maturity and very good test weight. It is a tall semidwarf with good straw strength. Knudson has resistance to leaf and stem rust and very good tolerance to foliar diseases. It has intermediate tolerance to fusarium head blight. Protein levels have been intermediate, similar to McNeal. Knudson has acceptable breadmaking 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.

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.

NEWANA - Developed from the cross, Sheridan/3/Norin 10/Brevor 14//5*Centana, made at the Montana Agricultural Experiment Station by personnel of the Agricultural Research Service, USDA. The initial release of Newana was made in 1976. It is adapted for dry and irrigated land in all districts of Montana. It is a bearded, semidwarf hard red spring wheat variety with white straw and chaff. It is resistant to loose smut and stem rust, with moderate resistance to stripe rust. Newana is moderately susceptible to Septoria but is susceptible to leaf rust. Its baking quality is superior and its milling quality is satisfactory, but has somewhat low flour yield.

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.

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.

WESTBRED 926 - Developed by Western Plant Breeders from a recurrent selection population. WestBred 926 is a semidwarf hard red spring wheat similar to WestBred 906R. WestBred 926 was released in 1987. The spike is awned, white chaffed, slightly longer and more oblong than WestBred 906R. The kernel is red, ovate, with medium length brush, and rounded cheeks. It is resistant to stem rust and powdery mildew.

WESTBRED 936 - Developed from a male-sterile facilitated, recurrent selection population, "906 alpha-84" by Western Plant Breeders. It is a semidwarf, hard red spring wheat released in 1992. The spike is awned, white chaffed, oblong and lax. The glumes are long and wide, with narrow elevated shoulders. The beak is very long, narrow and the apex is acuminate. The kernels are mid-long, mid-wide and ovate with rounded cheeks. The crease is shallow, mid-wide and the germ is mid-sized. The brush is long with no collar. WestBred 936 is resistant to stem rust and stripe rust. This variety is protected under the Plant Variety Protection Act.

Hard White Spring Wheats

MTHW9420 – Developed by the Montana Agricultural Experiment Station from the cross of MT8182/MT8289 and was released in 2000. It is a semidwarf spring wheat with medium maturity. MTHW9420 is white chaffed and has hard white kernels. 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.

EXPLORER - Developed by the Montana Agricultural Experiment Station and released in 2002. It was derived from the cross of MT8182/Fortuna//Pondera/MT8182. Explorer is a semidwarf variety with early maturity. Explorer has white chaff and hard white kernels. It has good stem rust resistance, but is susceptible to foliar diseases especially Septoria. Explorer has exceptional 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.

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.

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 semi-dwarf 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.

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.

LEB SOCK – 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.

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.

UTOPIA - Utopia was derived from exploitation of a "one irrigation" low input Male Sterile Facilitate Recurrent Selection population established at the University of Arizona, Mesa Experimental Station in 1982. Utopia is a semi-dwarf spring durum. Spikes are mid-dense, slightly tapered and incline at a 15 degree angle. At maturity, the stem and spike are white to tan with black awns. Glumes are large, long and glabrous with rounded to elevated shoulders. Seeds of Utopia are yellow amber, large, long, elliptical with shallow creases and rounded cheeks. Breeder seed will be maintained by World Wide Wheat, L.L.C. Utopia is protected under the Plant Variety Protection Act and can only be sold or advertised by variety name as a class of certified seed.

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

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											NINE YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1996	1998	1999	2000	2001	2002	2003	2004	YRS	
FORTUNA */	99.3	71.5	88.1	96.6	111.9	106.8	85.7	74.4	100.7	9	92.8
NEWANA	119.4	64.8	103.3	122.3	126.3	130.0	109.0	83.7	103.5	9	106.9
HI-LINE	105.7	64.6	86.8	113.7	120.9	116.6	95.1	77.5	90.2	9	96.8
MCNEAL*	120.2	65.3	106.0	119.8	123.3	121.5	102.0	78.5	86.8	9	102.6
AMIDON	121.9	84.8	110.8	110.7	121.7	125.5	87.3	78.3	99.4	9	104.5
ERNEST +	121.9	69.4	97.3	108.2	118.7	120.4	95.8	75.9	89.3	9	99.7
CHECK AVERAGE	114.7	70.1	98.7	111.9	120.5	120.1	95.8	78.0	95.0	9	100.5
SCHOLAR +	121.1	65.1	101.0	117.1	122.2	138.6	99.9	82.6	99.3	9	105.2
WESTBRED 926 (P)	106.6	84.8	98.0	106.3	128.3	142.1	100.6	75.2	100.1	9	104.7
WESTBRED 936 * (P)+	109.0	60.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	
WESTBRED EXPRESS * (P)+	121.9	74.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	
CONAN (P)+	115.4	69.3	0.0	99.6	114.8	104.3	91.6	79.7	99.0	8	96.5
REEDER +	0.0	0.0	0.0	111.1	118.1	138.0	109.5	87.4	92.4	6	106.2
HANK * (P)+	0.0	0.0	0.0	0.0	121.1	135.5	91.9	72.6	103.2	5	103.5
OUTLOOK * +	0.0	0.0	0.0	113.3	124.6	142.5	114.1	70.5	94.7	6	106.8
CHOTEAU * +	0.0	0.0	0.0	0.0	115.1	113.8	98.7	77.9	88.6	5	97.5
NORPRO * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	106.3	82.3	94.4	3	105.9
KNUDSON * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	105.3	83.0	93.3	3	105.3
MTHW9420 +(HW)	0.0	0.0	0.0	130.3	139.6	130.0	103.7	71.0	86.7	6	107.0
EXPLORER + (HW)	0.0	0.0	0.0	0.0	120.4	115.7	89.7	70.0	90.7	5	96.0

1995-2004 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	61.6	10	176	10	40.5	9	13.9
NEWANA	10	61.0	10	179	10	32.2	9	12.8
HI-LINE	10	60.4	10	174	10	31.5	9	13.9
MCNEAL*	10	60.8	10	177	10	34.4	9	14.1
AMIDON	10	61.2	10	177	10	40.0	9	14.2
ERNEST +	10	61.9	10	177	10	38.7	9	14.3
CHECK AVERAGE	10	61.1	10	177	10	36.2	9	13.9
SCHOLAR +	10	61.7	10	178	10	37.5	9	14.3
WESTBRED 926 (P)	10	60.4	10	172	10	31.7	9	14.0
WESTBRED 936 * (P)+	3	60.6	3	172	3	28.3	3	13.3
WESTBRED EXPRESS * (P)+	3	61.1	3	176	3	27.3	3	12.8
CONAN (P)+	9	61.2	9	174	9	32.2	8	13.9
REEDER +	6	61.5	6	175	6	35.5	5	14.3
HANK * (P)+	5	58.8	5	173	5	31.3	4	13.8
OUTLOOK * +	6	59.4	6	179	6	34.4	5	13.8
CHOTEAU * +	5	60.9	5	175	5	32.3	4	14.2
NORPRO * (P)+	3	62.1	3	175	3	31.9	3	13.8
KNUDSON * (P)+	3	62.1	3	176	3	33.5	3	13.6
MTHW9420 +(HW)	6	59.9	6	174	6	32.5	5	13.2
EXPLORER + (HW)	5	60.5	5	172	5	31.9	4	13.4

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

+ =Protected under the Plant Variety Protection Act

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

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

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	YRS	
FORTUNA */	60.4	44.2	73.0	82.8	64.8	65.1	69.0	50.5	41.7	81.4	10	63.3
NEWANA	69.2	43.2	92.4	77.3	64.0	64.5	72.9	59.8	37.0	78.9	10	65.9
HI-LINE	70.5	46.9	95.7	86.6	66.0	67.7	82.3	66.4	36.6	78.3	10	69.7
MCNEAL *	69.3	47.5	93.0	81.0	63.0	66.6	78.2	69.6	39.8	85.3	10	69.3
AMIDON	70.7	48.1	86.3	93.1	65.1	66.8	75.1	56.6	37.9	83.7	10	68.3
ERNEST */ +	60.5	46.3	84.1	86.9	63.9	65.8	77.3	56.9	41.9	80.5	10	66.4
CHECK AVERAGE	66.7	46.0	87.4	84.6	64.5	66.1	75.8	60.0	39.2	81.3	10	67.2
SCHOLAR +	64.1	47.2	88.9	85.6	65.8	70.0	74.9	55.8	41.9	84.1	10	67.8
WESTBRED 926 * (P)	64.9	45.0	91.4	83.4	69.8	69.7	72.9	66.1	43.0	89.3	10	69.5
WESTBRED 936 (P)+	65.6	47.4	82.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	65.6
WESTBRED EXPRESS (P)+	80.6	47.8	91.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	73.8
CONAN */ (P)+	55.4	43.4	76.2	0.0	62.5	65.3	73.6	68.9	37.8	81.7	9	64.6
REEDER +	0.0	0.0	0.0	0.0	72.7	72.3	80.1	63.3	44.5	85.4	6	72.6
HANK * (P)+	0.0	0.0	0.0	0.0	0.0	72.7	77.9	78.6	41.9	89.0	5	75.0
OUTLOOK * +	0.0	0.0	0.0	0.0	69.4	77.1	80.2	72.8	42.7	87.4	6	74.6
CHOTEAU * +	0.0	0.0	0.0	0.0	0.0	70.0	78.2	73.6	37.7	90.0	5	72.8
NORPRO * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	78.5	39.3	92.6	3	78.3
KNUDSON (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.1	38.6	84.6	3	72.3
MTHW9420 + (HW)	0.0	0.0	0.0	0.0	70.2	74.0	79.1	54.9	39.4	88.2	6	70.4
EXPLORER + (HW)	0.0	0.0	0.0	0.0	0.0	72.1	67.2	60.4	43.3	80.9	5	67.5

1995-2004 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	61.4	10	183	10	40.5	10	15.4
NEWANA	10	58.9	10	186	10	31.6	10	14.8
HI-LINE	10	59.6	10	182	10	31.4	10	15.5
MCNEAL *	10	59.5	10	185	10	33.3	10	15.6
AMIDON	10	59.6	10	183	10	39.5	10	15.5
ERNEST */ +	10	60.6	10	183	10	38.8	10	16.2
CHECK AVERAGE	10	59.9	10	184	10	35.9	10	15.5
SCHOLAR +	10	60.4	10	185	10	37.5	10	16.0
WESTBRED 926 * (P)	10	58.7	10	181	10	31.4	10	15.8
WESTBRED 936 (P)+	3	60.1	3	182	3	29.2	3	16.1
WESTBRED EXPRESS (P)+	3	58.3	3	185	3	29.7	3	15.2
CONAN */ (P)+	9	59.8	9	183	9	31.9	9	15.6
REEDER +	6	60.5	6	183	6	34.7	6	15.7
HANK * (P)+	5	57.6	5	181	5	31.2	5	15.8
OUTLOOK * +	6	58.9	6	186	6	33.1	6	14.8
CHOTEAU * +	5	59.8	5	182	5	31.9	5	15.8
NORPRO * (P)+	3	60.2	3	183	3	30.1	3	14.6
KNUDSON (P)+	3	60.4	3	184	3	32.5	3	15.1
MTHW9420 + (HW)	6	57.9	6	183	6	32.1	6	14.2
EXPLORER + (HW)	5	59.9	5	180	5	30.9	5	14.9

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

+ =Protected under the Plant Variety Protection Act

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

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

1996-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES										EIGHT YEAR COMPARABLE AVERAGE ¹
VARIETY	1996	1998	1999	2000	2001	2002	2003	2004	YRS	
FORTUNA	91.1	79.7	91.7	52.7	73.5	72.1	63.5	100.6	8	78.1
NEWANA	104.0	100.9	108.4	92.0	87.6	82.7	66.6	98.8	8	92.6
HI-LINE	101.8	97.1	100.4	87.3	85.6	80.1	70.0	97.5	8	90.0
MCNEAL*	106.3	101.5	103.8	87.4	92.0	88.1	65.3	102.9	8	93.4
AMIDON	107.9	90.9	95.7	84.9	76.1	74.7	66.8	102.5	8	87.5
ERNEST */ +	100.2	92.1	90.8	75.2	78.5	69.8	74.1	90.5	8	83.9
CHECK AVERAGE	101.9	93.7	98.5	79.9	82.2	77.9	67.7	98.8	8	87.6
SCHOLAR +	106.4	94.3	95.5	84.6	81.1	65.7	69.2	95.9	8	86.6
WESTBRED 926 * (P)	92.1	92.8	104.4	65.4	80.2	82.1	71.6	95.2	8	85.5
WESTBRED 936 * (P) +	104.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	
WESTBRED EXPRESS * (P)+	109.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	
CONAN (P)+	90.6	0.0	91.8	71.0	80.1	84.1	68.9	89.9	7	83.2
REEDER+	0.0	0.0	94.0	72.8	90.5	73.4	74.7	97.2	6	87.1
HANK * (P)+	0.0	0.0	0.0	91.8	93.5	99.5	74.5	115.3	5	102.2
OUTLOOK * +	0.0	0.0	106.0	83.9	92.7	73.6	74.3	104.2	6	92.7
CHOTEAU * +	0.0	0.0	0.0	79.6	92.8	93.8	70.4	103.2	5	94.7
NORPRO * (P)+	0.0	0.0	0.0	0.0	0.0	93.4	77.8	104.4	3	98.7
KNUDSON (P)+	0.0	0.0	0.0	0.0	0.0	79.6	69.2	97.7	3	88.3
MTHW9420 + (HW)	0.0	0.0	115.9	74.8	80.0	63.2	67.2	84.8	6	84.2
EXPLORER + (HW)	0.0	0.0	0.0	81.6	72.7	64.7	63.4	87.4	5	79.6

1996-2004 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	62.4	8	181	8	41.3	8	15.0
NEWANA	8	60.9	8	184	8	34.7	8	13.6
HI-LINE	8	61.7	8	180	8	33.4	8	14.6
MCNEAL*	8	61.4	8	183	8	36.7	8	14.9
AMIDON	8	61.0	8	181	8	41.1	8	14.9
ERNEST */ +	8	61.7	8	181	8	41.9	8	16.0
CHECK AVERAGE	8	61.5	8	181	8	38.2	8	14.8
SCHOLAR +	8	61.7	8	182	8	39.4	8	15.3
WESTBRED 926 * (P)	8	60.5	8	179	8	33.4	8	14.7
WESTBRED 936 * (P) +	1	61.2	1	180	1	31.0	1	15.4
WESTBRED EXPRESS * (P)+	1	59.8	1	181	1	29.9	1	14.8
CONAN (P)+	7	61.0	7	180	7	34.0	7	15.1
REEDER+	6	61.8	6	180	6	37.3	6	15.3
HANK * (P)+	5	60.9	5	179	5	32.5	5	14.9
OUTLOOK * +	6	60.4	6	183	6	36.9	6	14.5
CHOTEAU * +	5	61.7	5	180	5	33.9	5	14.9
NORPRO * (P)+	3	62.1	3	181	3	32.9	3	14.3
KNUDSON (P)+	3	61.5	3	181	3	35.2	3	14.2
MTHW9420 + (HW)	6	60.1	6	180	6	33.7	6	13.6
EXPLORER + (HW)	5	60.9	5	178	5	32.3	5	14.1

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

+ =Protected under the Plant Variety Protection Act

¹Comparable averages using less than three years data are not reliable 35

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

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											NINE YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1996	1997	1999	2000	2001	2002	2003	2004	YRS	
FORTUNA */	56.6	25.9	55.9	38.5	41.9	25.4	11.4	37.7	31.7	9	36.1
NEWANA	62.4	33.7	55.0	36.4	46.2	35.0	7.8	36.6	37.4	9	38.9
HI-LINE	65.7	34.5	50.9	37.5	57.2	29.0	11.4	39.0	33.5	9	39.9
MCNEAL *	66.1	31.6	54.8	40.8	53.4	35.6	9.3	36.0	39.1	9	40.7
AMIDON	70.9	34.7	54.2	34.6	49.6	34.5	9.1	34.6	34.8	9	39.7
ERNEST +	63.9	27.6	46.2	34.1	42.8	30.9	7.6	33.1	35.1	9	35.7
CHECK AVERAGE	64.2	31.3	52.8	37.0	48.5	31.7	9.4	36.2	35.3	9	38.5
SCHOLAR +	66.0	31.5	47.9	36.4	47.5	32.4	10.3	36.6	32.7	9	37.9
WESTBRED 926 * (P)	57.7	33.8	51.3	39.9	54.1	22.9	14.0	39.0	21.2	9	37.1
WESTBRED 936 (P)+	55.9	25.7	51.6	0.0	0.0	0.0	0.0	0.0	0.0	3	34.5
WESTBRED EXPRESS (P)+	59.5	23.5	48.5	0.0	0.0	0.0	0.0	0.0	0.0	3	34.1
CONAN */ (P)+	56.2	32.0	44.3	38.7	41.7	26.3	11.0	35.6	28.3	9	34.9
REEDER +	0.0	0.0	0.0	45.5	48.6	32.7	13.8	40.6	32.8	6	41.6
HANK * (P)+	0.0	0.0	0.0	0.0	57.4	26.2	11.9	42.3	29.5	5	40.0
OUTLOOK * +	0.0	0.0	0.0	40.0	58.8	29.3	9.8	42.5	39.3	6	42.7
CHOTEAU * +	0.0	0.0	0.0	0.0	52.6	28.1	9.8	37.2	28.7	5	37.4
NORPRO (P)+	0.0	0.0	0.0	0.0	0.0	0.0	6.5	36.5	33.5	3	36.4
KNUDSON (P)+	0.0	0.0	0.0	0.0	0.0	0.0	10.9	36.8	32.9	3	38.4
MTHW9420 + (HW)	0.0	0.0	0.0	36.1	47.4	27.4	11.0	37.1	32.8	6	37.3
EXPLORER + (HW)	0.0	0.0	0.0	0.0	55.5	21.5	12.5	39.0	29.7	5	37.8

1995-2004 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 */	9	58.6	7	167	9	31.9	9	15.7
NEWANA	9	58.4	7	169	9	26.0	9	15.4
HI-LINE	9	57.5	7	164	9	25.8	9	16.5
MCNEAL *	9	57.5	7	168	9	28.0	9	15.8
AMIDON	9	58.4	7	167	9	31.1	9	15.8
ERNEST +	9	59.2	7	168	9	31.8	9	16.5
CHECK AVERAGE	9	58.3	7	167	9	29.1	9	15.9
SCHOLAR +	9	59.5	7	167	9	30.1	9	16.1
WESTBRED 926 * (P)	9	58.0	7	163	9	26.2	9	16.6
WESTBRED 936 (P)+	3	57.1	1	163	3	21.0	3	16.7
WESTBRED EXPRESS (P)+	3	57.1	1	164	3	22.1	3	16.1
CONAN */ (P)+	9	58.8	7	165	9	25.9	9	16.0
REEDER +	6	59.8	6	165	6	27.6	6	15.8
HANK * (P)+	5	57.9	5	165	5	25.7	5	16.8
OUTLOOK * +	6	57.4	6	168	6	28.6	6	15.1
CHOTEAU * +	5	58.9	5	166	5	25.5	5	16.5
NORPRO (P)+	3	58.9	3	167	3	26.6	3	15.0
KNUDSON (P)+	3	59.8	3	167	3	28.1	3	16.3
MTHW9420 + (HW)	6	58.1	6	165	6	25.9	6	15.8
EXPLORER + (HW)	5	58.0	5	164	5	26.7	5	15.9

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

+ =Protected under the Plant Variety Protection Act

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

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

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES										EIGHT YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1997	1999	2000	2001	2002	2003	2004	YRS	
FORTUNA */	74.8	79.7	92.7	93.2	99.2	107.4	79.4	108.9	8	91.9
NEWANA	85.9	80.6	122.7	96.1	112.4	108.4	93.3	117.5	8	102.1
HI-LINE	81.1	86.1	117.1	89.7	107.2	110.8	93.9	109.9	8	99.5
MCNEAL *	85.7	78.1	130.1	90.5	110.6	118.5	88.1	114.4	8	102.0
AMIDON	87.6	81.9	132.3	92.2	123.9	117.9	89.2	110.0	8	104.4
ERNEST +	84.5	82.9	118.7	103.3	114.8	117.0	86.0	114.0	8	102.6
CHECK AVERAGE	83.2	81.5	118.9	94.2	111.3	113.3	88.3	112.5	8	100.4
SCHOLAR +	82.7	82.1	112.5	101.8	121.1	111.7	87.3	116.0	8	101.9
WESTBRED 926 * (P)	73.1	68.2	119.7	89.7	103.6	122.2	78.4	113.5	8	96.0
WESTBRED 936 * (P)+	71.5	56.6	0.0	0.0	0.0	0.0	0.0	0.0	2	
WESTBRED EXPRESS * (P)+	77.8	74.7	0.0	0.0	0.0	0.0	0.0	0.0	2	
CONAN (P)+	77.4	61.9	95.5	91.0	101.5	109.5	77.5	113.4	8	91.0
REEDER +	0.0	0.0	123.9	96.5	116.0	125.5	85.5	110.5	6	103.5
HANK * (P)+	0.0	0.0	0.0	104.9	107.0	123.0	85.6	123.3	5	105.1
OUTLOOK * +	0.0	0.0	125.1	99.7	117.0	119.0	88.9	116.2	6	104.7
CHOTEAU * +	0.0	0.0	0.0	95.3	114.9	119.0	86.6	128.7	5	105.2
NORPRO * (P)+	0.0	0.0	0.0	0.0	0.0	126.6	83.5	118.5	3	105.1
KNUDSON (P)+	0.0	0.0	0.0	0.0	0.0	107.0	54.6	115.2	3	88.5
MTHW9420 + (HW)	0.0	0.0	126.8	85.7	121.0	115.6	87.9	123.0	6	103.8
EXPLORER + (HW)	0.0	0.0	0.0	83.9	91.0	105.5	74.2	103.5	5	88.5

1995-2004 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 */	8	62.1	7	167	7	41.7	8	14.6
NEWANA	8	61.4	7	169	7	35.2	8	13.5
HI-LINE	8	62.0	7	165	7	33.5	8	14.1
MCNEAL *	8	61.5	7	169	7	36.4	8	14.1
AMIDON	8	61.3	7	168	7	42.2	8	14.1
ERNEST +	8	62.1	7	167	7	42.1	8	14.8
CHECK AVERAGE	8	61.7	7	167	7	38.5	8	14.2
SCHOLAR +	8	61.9	7	168	7	39.8	8	14.8
WESTBRED 926 * (P)	8	60.5	7	163	7	32.4	8	15.0
WESTBRED 936 * (P)+	2	57.1	1	163	1	27.6	2	15.6
WESTBRED EXPRESS * (P)+	2	59.6	1	167	1	27.6	2	14.8
CONAN (P)+	8	60.9	7	166	7	33.5	8	14.5
REEDER +	6	62.1	6	165	6	37.8	6	14.7
HANK * (P)+	5	60.4	5	165	5	34.0	5	14.4
OUTLOOK * +	6	61.2	6	170	6	38.2	6	13.8
CHOTEAU * +	5	61.8	5	167	5	35.0	5	14.6
NORPRO * (P)+	3	62.0	3	168	3	34.5	3	14.1
KNUDSON (P)+	3	61.4	3	168	3	35.7	3	14.4
MTHW9420 + (HW)	6	61.7	6	166	6	34.6	6	13.6
EXPLORER + (HW)	5	60.9	5	163	5	32.2	5	14.9

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

+ =Protected under the Plant Variety Protection Act

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

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

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES										EIGHT YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1996	1997	1998	1999	2001	2003	2004	YRS	
FORTUNA */	28.0	24.9	59.1	45.5	42.8	40.4	18.1	37.1	8	37.0
NEWANA	29.7	24.2	65.6	48.8	42.4	38.7	14.8	33.5	8	37.2
HI-LINE	25.6	21.8	68.4	61.1	46.5	38.0	15.3	34.6	8	38.9
MCNEAL*	34.5	25.4	66.2	56.1	48.9	47.5	20.3	36.9	8	42.0
AMIDON	34.8	28.1	56.2	51.0	44.1	43.4	17.5	35.4	8	38.8
ERNEST */ +	29.7	28.6	59.9	47.9	41.8	34.3	15.9	34.1	8	36.5
CHECK AVERAGE	30.4	25.5	62.6	51.7	44.4	40.4	17.0	35.3	8	38.4
SCHOLAR * +	28.7	27.0	58.7	47.6	46.2	39.9	17.8	36.1	8	37.8
WESTBRED 926 * (P)	34.1	23.4	58.2	48.3	44.5	38.1	16.0	37.2	8	37.5
WESTBRED 936 (P) +	33.6	23.8	68.0	0.0	0.0	0.0	0.0	0.0	3	40.7
WESTBRED EXPRESS (P)+	29.9	26.3	60.5	0.0	0.0	0.0	0.0	0.0	3	37.9
CONAN */ (P)+	29.4	23.5	54.6	0.0	37.4	40.3	17.8	39.3	7	36.4
REEDER +	0.0	0.0	0.0	0.0	48.7	43.6	18.4	37.9	4	41.6
HANK * (P)+	0.0	0.0	0.0	0.0	0.0	45.6	21.4	41.5	3	44.9
OUTLOOK * +	0.0	0.0	0.0	0.0	46.0	42.3	16.6	39.5	4	40.5
CHOTEAU * +	0.0	0.0	0.0	0.0	0.0	38.3	15.0	35.6	3	36.9
NORPRO (P)+	0.0	0.0	0.0	0.0	0.0	0.0	12.6	32.2	2	
KNUDSON * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	14.2	36.9	2	
MTHW9420 + (HW)	0.0	0.0	0.0	0.0	45.2	39.2	18.6	36.0	4	39.0
EXPLORER + (HW)	0.0	0.0	0.0	0.0	0.0	40.0	19.1	40.8	3	41.4

1995-2004 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 */	8	58.0	8	184	8	34.5	8	15.56
NEWANA	8	56.7	8	187	8	29.1	8	15.66
HI-LINE	8	56.3	8	182	8	29.1	8	15.91
MCNEAL*	8	56.9	8	186	8	32.1	8	15.74
AMIDON	8	57.7	8	184	8	34.7	8	15.74
ERNEST */ +	8	57.8	8	184	8	34.7	8	16.08
CHECK AVERAGE	8	57.2	8	184	8	32.4	8	15.78
SCHOLAR * +	8	58.5	8	186	8	33.5	8	16.43
WESTBRED 926 * (P)	8	56.4	8	181	8	29.3	8	16.21
WESTBRED 936 (P) +	3	56.9	3	181	3	29.0	3	16.08
WESTBRED EXPRESS (P)+	3	57.2	3	183	3	27.0	3	15.7
CONAN */ (P)+	7	58.5	7	184	7	30.0	7	15.78
REEDER +	4	58.5	4	184	4	31.2	4	15.64
HANK * (P)+	3	56.0	3	182	3	30.8	3	15.64
OUTLOOK * +	4	55.6	4	186	4	30.5	4	15.44
CHOTEAU * +	3	58.1	3	184	3	29.2	3	15.32
NORPRO (P)+	2	55.5	2	184	2	28.4	2	15.12
KNUDSON * (P)+	2	59.1	2	185	2	30.7	2	14.89
MTHW9420 + (HW)	4	55.3	4	184	4	29.5	4	15.69
EXPLORER + (HW)	3	57.3	3	181	3	30.7	3	16.11

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

+ =Protected under the Plant Variety Protection Act

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

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

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES											TEN YEAR COMPARABLE AVERAGE ¹	
VARIETY	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	YRS	
FORTUNA */	47.1	33.3	43.3	36.0	35.9	35.9	16.7	28.5	10.8	42.0	10	32.9
NEWANA	70.6	37.8	50.4	39.5	45.9	35.6	21.5	39.1	12.3	35.2	10	38.8
HI-LINE	63.3	36.8	45.7	40.0	45.3	37.6	19.7	38.0	11.2	40.7	10	37.8
MCNEAL *	72.3	36.2	51.8	44.1	49.2	40.2	18.9	36.3	13.9	40.8	10	40.4
AMIDON	70.6	35.6	48.1	42.3	40.4	35.9	22.2	41.4	10.9	38.0	10	38.5
ERNEST+	66.3	35.4	44.6	36.6	39.9	37.3	19.6	36.4	11.8	39.8	10	36.8
CHECK AVERAGE	65.0	35.9	47.3	39.7	42.8	37.1	19.8	36.6	11.8	39.4	10	37.5
SCHOLAR * +	69.7	39.0	50.9	42.4	42.2	38.5	21.0	36.4	12.2	44.7	10	39.7
WESTBRED 926 (P)	52.8	34.6	46.7	32.8	41.9	38.0	18.7	29.9	10.5	41.9	10	34.8
WESTBRED 936 (P)+	59.1	34.6	46.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	35.5
WESTBRED EXPRESS (P)+	56.3	34.4	39.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	33.1
CONAN */ (P)+	66.6	36.2	48.5	0.0	47.8	36.0	20.4	33.7	13.5	43.3	9	38.7
REEDER +	0.0	0.0	0.0	0.0	49.1	43.3	22.5	34.9	12.4	40.9	6	40.7
HANK * (P)+	0.0	0.0	0.0	0.0	0.0	41.7	20.5	37.8	10.4	45.0	5	40.3
OUTLOOK * +	0.0	0.0	0.0	0.0	44.1	41.0	22.9	44.5	16.2	49.0	6	43.5
CHOTEAU *+	0.0	0.0	0.0	0.0	0.0	34.2	19.3	34.9	13.1	42.5	5	37.4
NORPRO (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.2	9.4	39.1	3	35.4
KNUDSON (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.0	7.0	38.6	3	33.6
MTHW9420 + (HW)	0.0	0.0	0.0	0.0	35.6	38.7	16.4	28.3	8.1	38.7	6	33.2
EXPLORER + (HW)	0.0	0.0	0.0	0.0	0.0	41.6	19.8	37.6	13.2	35.9	5	38.4

1995-2004 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	59.6	10	177	10	30.3	10	15.3
NEWANA	10	59.1	10	179	10	26.1	10	14.9
HI-LINE	10	58.7	10	176	10	25.6	10	16.2
MCNEAL *	10	58.1	10	179	10	27.7	10	15.6
AMIDON	10	59.4	10	177	10	30.3	10	15.1
ERNEST+	10	59.8	10	177	10	30.2	10	16.4
CHECK AVERAGE	10	59.1	10	178	10	28.4	10	15.6
SCHOLAR * +	10	60.4	10	178	10	29.4	10	16.1
WESTBRED 926 (P)	10	58.7	10	175	10	25.1	10	16.2
WESTBRED 936 (P)+	3	58.2	3	175	3	23.5	3	16.5
WESTBRED EXPRESS (P)+	3	58.1	3	178	3	22.7	3	16.0
CONAN */ (P)+	9	60.2	9	177	9	26.2	9	15.6
REEDER +	6	60.2	6	177	6	28.3	6	15.7
HANK * (P)+	5	58.7	5	176	5	26.1	5	15.7
OUTLOOK * +	6	58.1	6	178	6	27.6	6	15.3
CHOTEAU *+	5	59.4	5	177	5	25.7	5	15.9
NORPRO (P)+	3	59.6	3	177	3	25.6	3	15.1
KNUDSON (P)+	3	60.1	3	178	3	25.7	3	16.1
MTHW9420 + (HW)	6	57.7	6	177	6	25.5	6	15.2
EXPLORER + (HW)	5	59.1	5	175	5	26.7	5	15.5

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

+ = Protected under the Plant Variety Protection Act

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

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

VARIETY	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	YRS	TEN YEAR
												COMPARABLE AVERAGE ¹
FORTUNA */	71.6	57.6	59.4	61.8	57.7	39.2	14.1	42.8	49.6	58.0	10	51.2
NEWANA	79.8	64.6	61.6	70.5	64.4	46.3	15.1	44.6	44.8	55.3	10	54.7
HI-LINE	75.1	62.4	59.8	72.7	59.3	39.1	12.7	43.7	53.0	58.2	10	53.6
MCNEAL *	77.6	67.2	62.0	75.9	61.7	38.8	13.4	41.5	49.5	57.5	10	54.5
AMIDON	67.0	65.9	62.7	65.5	50.9	35.6	16.1	44.0	39.9	50.8	10	49.8
ERNEST +	77.8	63.7	58.4	66.3	55.3	37.5	16.6	45.7	42.6	56.7	10	52.1
CHECK AVERAGE	74.8	63.6	60.6	68.8	58.2	39.4	14.7	43.7	46.6	56.1	10	52.6
SCHOLAR * +	73.3	59.5	66.7	68.7	51.5	44.8	16.5	43.0	46.4	52.8	10	52.3
WESTBRED 926 (P)	76.1	68.8	56.8	68.2	59.8	46.5	13.0	40.9	54.1	61.5	10	54.6
WESTBRED 936 (P)+	74.1	68.7	68.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	55.9
WESTBRED EXPRESS (P)+	69.1	70.3	58.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	52.4
CONAN */ (P)+	74.7	64.9	55.8	0.0	55.2	42.6	15.1	40.8	45.9	58.0	9	52.1
REEDER +	0.0	0.0	0.0	0.0	61.5	47.6	17.1	49.1	53.9	60.7	6	59.0
HANK * (P)+	0.0	0.0	0.0	0.0	0.0	46.4	13.7	42.0	48.9	60.0	5	55.4
OUTLOOK * +	0.0	0.0	0.0	0.0	54.8	44.4	15.2	43.0	48.8	60.2	6	54.2
CHOTEAU * +	0.0	0.0	0.0	0.0	0.0	40.8	14.2	45.2	59.5	63.8	5	58.7
NORPRO (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.4	50.2	59.9	3	56.3
KNUDSON (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.6	46.6	60.2	3	54.1
MTHW9420 + (HW)	0.0	0.0	0.0	0.0	55.0	42.5	11.6	41.2	46.0	58.8	6	51.9
EXPLORER + (HW)	0.0	0.0	0.0	0.0	0.0	42.6	13.3	39.1	46.6	55.8	5	51.9

1995-2004 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	61.5	10	183	10	37.5	10	13.4
NEWANA	10	60.0	10	185	10	29.4	10	12.9
HI-LINE	10	61.0	10	181	10	29.9	10	13.6
MCNEAL *	10	60.2	10	184	10	31.8	10	13.2
AMIDON	10	59.8	10	184	10	36.5	10	13.4
ERNEST +	10	61.3	10	183	10	36.6	10	14.0
CHECK AVERAGE	10	60.6	10	183	10	33.6	10	13.4
SCHOLAR * +	10	60.8	10	185	10	36.0	10	13.7
WESTBRED 926 (P)	10	60.2	10	180	10	30.1	10	13.6
WESTBRED 936 (P)+	3	59.9	3	181	3	27.1	3	13.2
WESTBRED EXPRESS (P)+	3	60.7	3	183	3	26.8	3	12.9
CONAN */ (P)+	9	60.2	9	183	9	30.4	9	13.6
REEDER +	6	61.0	6	182	6	32.8	6	13.1
HANK * (P)+	5	59.4	5	182	5	32.0	5	13.3
OUTLOOK * +	6	59.5	6	184	6	31.9	6	13.4
CHOTEAU * +	5	61.1	5	183	5	30.7	5	13.5
NORPRO (P)+	3	60.1	3	183	3	28.5	3	13.0
KNUDSON (P)+	3	61.2	3	183	3	31.5	3	12.9
MTHW9420 + (HW)	6	60.0	6	182	6	30.6	6	12.6
EXPLORER + (HW)	5	60.8	5	181	5	29.6	5	13.5

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

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

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

VARIETY	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	YRS	TEN YEAR
												COMPARABLE AVERAGE ¹
FORTUNA	33.6	38.9	31.8	59.2	49.1	54.4	40.1	35.5	57.4	60.3	10	46.0
NEWANA	45.8	39.5	39.3	59.1	55.7	61.9	53.0	34.3	55.9	71.0	10	51.5
HI-LINE	41.2	42.5	38.4	64.1	48.6	54.1	39.0	40.1	61.9	64.9	10	49.5
MCNEAL*	46.3	42.8	43.2	65.7	54.4	60.3	48.2	43.4	60.7	68.3	10	53.3
AMIDON	38.2	39.7	48.7	63.2	61.0	60.6	50.8	40.6	57.9	60.3	10	52.1
ERNEST */ +	35.2	37.9	45.2	58.1	54.4	56.1	51.1	40.8	54.7	61.2	10	49.5
CHECK AVERAGE	40.0	40.2	41.1	61.6	53.9	57.9	47.1	39.1	58.1	64.3	10	50.3
SCHOLAR * +	40.9	41.3	45.1	64.6	59.5	56.1	51.6	41.6	59.4	67.6	10	52.8
WESTBRED 926 (P)	45.4	38.4	38.8	63.0	54.1	58.4	46.3	43.9	59.6	65.1	10	51.3
WESTBRED 936 (P)+	43.5	41.3	37.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	50.9
WESTBRED EXPRESS (P)+	37.7	39.4	36.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	47.2
CONAN */ (P)+	43.9	41.1	40.6	0.0	51.7	51.0	44.4	39.5	55.7	59.1	9	48.7
REEDER +	0.0	0.0	0.0	0.0	65.3	67.4	54.3	52.5	67.6	68.0	6	58.9
HANK * (P)+	0.0	0.0	0.0	0.0	0.0	61.7	44.9	39.4	63.3	66.6	5	52.1
OUTLOOK * +	0.0	0.0	0.0	0.0	59.8	63.4	54.8	44.3	69.0	67.5	6	56.4
CHOTEAU * +	0.0	0.0	0.0	0.0	0.0	60.5	55.4	42.8	61.2	61.9	5	53.2
NORPRO * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.6	65.8	70.7	3	56.7
KNUDSON * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.7	63.8	68.3	3	55.4
MTHW9420+ (HW)	0.0	0.0	0.0	0.0	55.9	62.5	51.7	41.4	63.9	67.8	6	53.9
EXPLORER+ (HW)	0.0	0.0	0.0	0.0	0.0	54.9	43.1	43.7	62.6	64.2	5	50.7

1995-2004 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	60.4	10	173	10	32.8	10	14.4
NEWANA	10	60.2	10	175	10	27.4	9	13.0
HI-LINE	10	60.3	10	171	10	26.7	10	14.5
MCNEAL*	10	59.9	10	174	10	28.8	10	14.2
AMIDON	10	60.0	10	173	10	33.5	10	14.2
ERNEST*/+	10	61.1	10	172	10	32.1	10	15.1
CHECK AVERAGE	10	60.3	10	173	10	30.2	10	14.1
SCHOLAR*+	10	61.1	10	174	10	32.2	10	14.9
WESTBRED 926 (P)	10	59.7	10	169	10	26.0	10	14.7
WESTBRED 936 (P)+	3	59.9	3	170	3	24.3	3	14.8
WESTBRED EXPRESS (P)+	3	60.1	3	172	3	24.1	3	14.1
CONAN */ (P)+	9	60.9	9	171	9	26.6	9	14.6
REEDER +	6	61.1	6	172	6	28.8	6	14.3
HANK * (P)+	5	58.9	5	169	5	26.3	5	14.5
OUTLOOK * +	6	60.1	6	175	6	29.5	6	14.4
CHOTEAU * +	5	61.0	5	172	5	26.9	5	15.2
NORPRO * (P)+	3	61.0	3	172	3	26.8	3	14.4
KNUDSON * (P)+	3	61.2	3	173	3	27.6	3	14.6
MTHW9420+ (HW)	6	59.8	6	170	6	27.2	6	13.1
EXPLORER+ (HW)	5	60.1	5	170	5	27.1	5	14.5

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

+ =Protected under the Plant Variety Protection Act

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

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

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED SPRING WHEAT VARIETIES												TEN YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	YRS	
FORTUNA	45.1	80.9	56.1	44.0	62.4	78.3	28.2	37.4	77.5	66.4	10	57.6
NEWANA	49.0	86.6	65.7	40.4	79.0	89.6	48.6	56.9	93.0	79.5	10	68.8
HI-LINE	59.2	94.4	66.5	48.1	71.4	87.6	46.5	51.9	106.3	76.0	10	70.8
MCNEAL*	61.1	95.4	82.2	50.5	87.9	101.6	62.6	56.7	107.5	83.4	10	78.9
AMIDON	67.1	93.5	79.2	48.6	85.9	99.5	45.0	48.0	97.4	82.6	10	74.7
ERNEST * /+	60.7	92.6	72.6	51.2	90.4	99.7	45.2	49.9	92.8	76.4	10	73.2
CHECK AVERAGE	57.0	90.6	70.4	47.1	79.5	92.7	46.0	50.1	95.8	77.4	10	70.7
SCHOLAR +	59.8	92.3	73.6	45.3	71.1	90.8	45.1	50.9	94.4	72.1	10	69.5
WESTBRED 926 * (P)	49.9	92.9	71.7	42.5	81.4	91.2	52.4	51.6	101.9	86.0	10	72.2
WESTBRED 936 * (P)+	51.5	92.7	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	68.4
WESTBRED EXPRESS * (P)+	52.3	93.3	69.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	69.8
CONAN (P)+	56.3	78.8	66.3	0.0	81.0	80.3	56.7	47.3	88.3	76.1	9	67.6
REEDER +	0.0	0.0	0.0	0.0	95.5	111.1	66.8	52.0	102.5	88.8	6	82.7
HANK * (P)+	0.0	0.0	0.0	0.0	0.0	98.1	59.2	53.3	113.5	87.6	5	80.4
OUTLOOK * +	0.0	0.0	0.0	0.0	85.4	109.9	66.9	49.7	104.1	84.2	6	80.0
CHOTEAU * +	0.0	0.0	0.0	0.0	0.0	102.3	55.0	60.6	107.3	76.0	5	78.3
NORPRO * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.6	115.8	80.0	3	78.9
KNUDSON * (P)+	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.7	106.2	79.3	3	77.6
MTHW9420 + (HW)	0.0	0.0	0.0	0.0	75.3	83.4	44.6	46.8	102.7	83.6	6	69.9
EXPLORER + (HW)	0.0	0.0	0.0	0.0	0.0	83.5	32.7	47.3	91.9	77.3	5	64.9

1995-2004 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	59.8	10	175	10	36.3	10	14.6
NEWANA	10	60.0	10	178	10	31.4	10	13.3
HI-LINE	10	60.3	10	174	10	30.0	10	14.0
MCNEAL*	10	60.7	10	177	10	32.7	10	14.0
AMIDON	10	60.4	10	176	10	37.7	10	14.2
ERNEST * /+	10	61.3	10	175	10	36.9	10	14.6
CHECK AVERAGE	10	60.4	10	176	10	34.2	10	14.1
SCHOLAR +	10	61.3	10	177	10	35.0	10	14.4
WESTBRED 926 * (P)	10	59.7	10	172	10	29.8	10	14.7
WESTBRED 936 * (P)+	3	59.5	3	173	3	26.9	3	14.5
WESTBRED EXPRESS * (P)+	3	60.0	3	175	3	26.8	3	14.4
CONAN (P)+	9	60.7	9	175	9	30.3	9	14.3
REEDER +	6	61.5	6	174	6	33.8	6	14.8
HANK * (P)+	5	59.5	5	173	5	30.1	5	14.4
OUTLOOK * +	6	59.9	6	177	6	33.2	6	14.1
CHOTEAU * +	5	61.4	5	175	5	30.1	5	14.2
NORPRO * (P)+	3	60.8	3	174	3	28.6	3	13.8
KNUDSON * (P)+	3	61.1	3	175	3	30.5	3	13.4
MTHW9420 + (HW)	6	59.5	6	173	6	30.5	5	13.1
EXPLORER + (HW)	5	59.0	5	172	5	29.5	5	14.2

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

+ =Protected under the Plant Variety Protection Act

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

**DURUM WHEAT
DISTRICT 2
BOZEMAN DRYLAND**

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES												TEN YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1996	1997	1998	1999	2000	2001 ³	2002	2003	2004	YEARS	
VIC	75.5	46.3	79.3	81.8	49.3	60.9	76.3	52.2	42.5	52.1	10	61.6
CHECK AVE	75.5	46.3	79.3	81.8	49.3	60.9	76.3	52.2	42.5	52.1	10	61.6
MONROE	61.0	43.5	71.3	77.9	56.6	58.0	71.9	52.6	42.5	58.2	10	59.4
KYLE	66.1	45.2	72.7	70.6	47.0	56.0	74.4	47.9	39.6	54.5	10	57.4
MUNICH+	0.0	39.1	89.7	87.4	49.9	64.8	79.3	60.1	41.8	58.1	9	65.0
BEN*+	0.0	42.7	81.4	89.1	48.1	61.0	79.9	56.2	41.8	59.2	9	63.8
MOUNTRAIL*+	0.0	0.0	0.0	0.0	51.6	64.7	83.8	60.4	41.9	61.8	6	67.3
MAIER*+	0.0	0.0	0.0	0.0	56.9	64.5	81.2	62.7	41.5	61.1	6	68.0
PLAZA+	0.0	0.0	0.0	0.0	51.2	61.0	73.6	58.9	34.1	63.7	6	63.3
LEBSOCK+	0.0	0.0	0.0	0.0	55.1	59.9	76.6	61.7	41.2	62.5	6	66.0
UTOPIA (P)+	0.0	0.0	104.3	93.0	51.6	66.0	75.8	61.3	42.7	0.0	7	68.9
AC AVONLEA*+	0.0	0.0	0.0	0.0	0.0	0.0	76.4	59.7	40.6	62.5	4	66.1
ALZADA* (P)+	0.0	0.0	0.0	0.0	0.0	0.0	76.4	59.1	42.2	74.0	4	69.6

1995-2004 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
VIC	10	60.9	10	185	10	40.9	5	16.2
CHECK AVE	10	60.9	10	185	10	40.9	5	16.2
MONROE	10	60.2	10	182	10	38.5	5	15.8
KYLE	10	59.7	10	187	10	42.5	5	16.1
MUNICH+	9	60.1	9	184	9	34.8	5	16.0
BEN*+	9	60.9	9	184	9	38.5	5	16.2
MOUNTRAIL*+	6	59.6	6	186	6	37.0	5	15.6
MAIER*+	6	59.9	6	185	6	35.9	5	16.7
PLAZA+	6	59.1	6	187	6	28.8	5	15.6
LEBSOCK+	6	61.0	6	184	6	36.1	5	15.7
UTOPIA (P)+	7	58.7	7	183	7	27.1	4	15.9
AC AVONLEA*+	4	60.2	4	185	4	38.9	4	16.5
ALZADA* (P)+	4	59.5	4	183	4	30.1	4	15.3

* 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

³ The 2001 durum nursery at Bozeman was irrigated with 7 inches of water

**DURUM WHEAT
DISTRICT 3
HUNTLEY DRYLAND**

1999-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES								SIX YEAR COMPARABLE AVERAGE ¹
VARIETY	1999	2000	2001	2002	2003	2004	YEARS	
VIC	25.9	41.4	31.9	8.5	28.9	27.7	6	27.4
CHECK AVE	25.9	41.4	31.9	8.5	28.9	27.7	6	27.4
MONROE	31.2	47.4	31.1	14.7	31.8	26.9	6	30.5
KYLE	26.0	52.2	34.5	4.9	34.7	32.3	6	30.8
MUNICH +	32.5	55.9	34.3	10.5	32.6	29.9	6	32.6
BEN +	28.2	44.3	29.4	11.0	28.7	31.1	6	28.8
MOUNTRAIL +	30.0	43.0	33.6	6.6	30.3	32.7	6	29.4
MAIER +	29.3	54.0	29.9	11.2	30.2	32.7	6	31.2
PLAZA +	24.8	44.7	32.2	8.2	30.4	31.0	6	28.5
LEB SOCK +	29.3	44.7	29.0	9.3	35.0	29.8	6	29.5
UTOPIA (P)+	29.9	57.5	36.5	13.9	37.3	0.0	5	35.1
AC AVONLEA +	0.0	0.0	34.8	10.6	32.2	28.8	4	30.0
ALZADA (P)+	0.0	0.0	33.5	15.1	34.3	29.3	4	31.6

1999-2004 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
VIC	6	58.2	6	165	6	30.1	5	17.0
CHECK AVE	6	58.2	6	165	6	30.1	5	17.0
MONROE	6	58.5	6	162	6	30.5	5	16.7
KYLE	6	58.2	6	168	6	31.4	5	17.0
MUNICH +	6	58.0	6	165	6	27.5	5	17.2
BEN +	6	59.1	6	166	6	29.3	5	17.5
MOUNTRAIL +	6	57.6	6	167	6	26.9	5	17.4
MAIER +	6	58.9	6	166	6	28.0	5	17.3
PLAZA +	6	57.5	6	166	6	23.9	5	16.9
LEB SOCK +	6	58.9	6	165	6	27.7	5	16.4
UTOPIA (P)+	5	58.4	5	163	5	22.4	4	16.7
AC AVONLEA +	4	59.3	4	165	4	29.7	3	17.9
ALZADA (P)+	4	58.7	4	164	4	25.7	3	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 reliable

**DURUM WHEAT
DISTRICT 4
MOCCASIN DRYLAND**

1996-2003 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES									SEVEN YEAR COMPARABLE AVERAGE ¹
VARIETY	1996	1997	1998	1999	2000	2001	2003	YEARS	
VIC	21.1	57.6	35.2	31.2	30.6	29.5	12.5	7	31.1
CHECK AVE	21.1	57.6	35.2	31.2	30.6	29.5	12.5	7	31.1
MONROE	23.4	56.0	32.9	30.9	27.9	29.2	15.0	7	30.8
KYLE	21.3	56.4	30.9	31.6	30.2	30.7	15.1	7	30.9
MUNICH +	20.2	56.9	32.8	33.7	27.0	30.5	12.3	7	30.5
BEN * +	22.6	53.4	32.6	31.8	27.3	28.7	13.9	7	30.0
MOUNTRAIL * +	0.0	0.0	0.0	36.0	32.2	32.3	18.8	4	35.8
MAIER * +	0.0	0.0	0.0	35.9	31.4	29.8	12.8	4	32.9
PLAZA +	0.0	0.0	0.0	35.6	28.0	29.5	11.6	4	31.4
LEBSOCK+	0.0	0.0	0.0	39.3	27.6	29.6	12.1	4	32.5
UTOPIA (P)+	0.0	58.7	35.2	40.1	34.6	30.1	13.6	6	33.6
AC AVONLEA * +	0.0	0.0	0.0	0.0	0.0	33.9	14.8	2	
ALZADA * (P)+	0.0	0.0	0.0	0.0	0.0	35.5	13.8	2	

1996-2004 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
VIC	7	59.7	8	184	8	32.2	4	15.1
CHECK AVE	7	59.7	8	184	8	32.2	4	15.1
MONROE	7	58.7	8	180	8	31.9	4	15.1
KYLE	7	59.5	8	187	8	33.5	4	14.6
MUNICH +	7	58.3	8	184	8	27.3	4	15.2
BEN * +	7	59.9	8	184	8	30.8	4	15.1
MOUNTRAIL * +	4	58.3	5	185	5	29.3	4	14.3
MAIER * +	4	59.3	5	184	5	28.5	4	14.9
PLAZA +	4	58.3	5	185	5	25.3	4	15.0
LEBSOCK+	4	60.3	5	184	5	29.9	4	14.1
UTOPIA (P)+	6	58.4	7	182	7	23.3	4	14.2
AC AVONLEA * +	2	60.9	3	183	3	31.4	2	13.7
ALZADA * (P)+	2	59.5	3	182	3	26.8	2	12.9

* 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 5
HAVRE DRYLAND**

1996-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES											NINE YEAR COMPARABLE AVERAGE ¹
VARIETY	1996	1997	1998	1999	2000	2001	2002	2003	2004	YEARS	
VIC	34.8	43.1	34.3	36.4	33.2	19.1	35.3	10.9	35.7	9	31.4
CHECK AVE	34.8	43.1	34.3	36.4	33.2	19.1	35.3	10.9	35.7	9	31.4
MONROE	35.5	45.5	28.8	40.0	35.0	16.9	33.7	7.1	43.4	9	31.8
KYLE	38.1	43.5	32.4	39.6	31.4	20.5	36.7	12.5	49.9	9	33.8
MUNICH +	35.2	43.1	32.7	42.6	36.0	17.0	38.7	10.6	40.4	9	32.9
BEN +	35.8	43.7	36.5	38.9	33.8	15.8	35.9	8.4	41.3	9	32.2
MOUNTRAIL * +	0.0	0.0	0.0	41.4	34.6	18.9	39.5	11.6	44.3	6	35.0
MAIER * +	0.0	0.0	0.0	45.2	34.3	15.7	39.0	10.0	43.5	6	34.6
PLAZA +	0.0	0.0	0.0	44.6	33.8	19.1	38.0	12.4	41.8	6	34.9
LEBSOCK+	0.0	0.0	0.0	43.0	35.1	16.3	35.2	10.5	46.7	6	34.4
UTOPIA (P)+	0.0	49.2	31.5	49.0	35.4	12.1	37.6	11.1	0.0	7	33.5
AC AVONLEA * +	0.0	0.0	0.0	0.0	0.0	21.4	40.3	8.1	44.7	4	35.7
ALZADA * (P)+	0.0	0.0	0.0	0.0	0.0	18.9	39.2	9.1	47.7	4	35.8

1996-2004 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
VIC	9	60.3	9	180	9	28.7	4	16.3
CHECK AVE	9	60.3	9	180	9	28.7	4	16.3
MONROE	9	59.6	9	178	9	27.8	4	16.5
KYLE	9	60.0	9	182	9	31.7	4	16.3
MUNICH +	9	59.0	9	180	9	25.5	4	16.8
BEN +	9	60.6	9	180	9	28.2	4	16.7
MOUNTRAIL * +	6	59.2	6	180	6	27.7	4	16.4
MAIER * +	6	59.7	6	180	6	28.1	4	17.1
PLAZA +	6	59.6	6	181	6	26.4	4	15.7
LEBSOCK+	6	60.4	6	180	6	27.1	4	15.9
UTOPIA (P)+	7	59.8	7	179	7	22.0	3	15.9
AC AVONLEA * +	4	60.1	4	180	4	28.5	3	16.6
ALZADA * (P)+	4	59.7	4	178	4	23.6	3	16.1

* 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**

1994-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	1995	1997	1998	1999	2000	2001	2002	2003	2004	YEARS	NINE YEAR COMPARABLE AVERAGE ¹
VIC	66.5	46.5	67.8	52.3	33.8	12.8	37.7	30.6	52.5	9	44.5
CHECK AVE	66.5	46.5	67.8	52.3	33.8	12.8	37.7	30.6	52.5	9	44.5
MONROE	72.8	46.3	68.9	58.6	32.5	12.3	37.6	34.5	53.8	9	46.4
KYLE	77.4	51.3	70.9	58.6	36.1	14.4	51.0	33.1	57.1	9	50.0
MUNICH +	0.0	52.4	75.0	64.4	35.9	11.5	44.4	38.3	59.4	8	50.8
BEN +	0.0	50.0	69.4	50.7	34.4	12.1	40.6	35.6	54.5	8	46.3
MOUNTRAIL * +	0.0	0.0	0.0	59.0	36.3	15.0	49.5	39.2	61.8	6	52.8
MAIER * +	0.0	0.0	0.0	67.9	39.8	12.7	43.6	46.0	57.8	6	54.3
PLAZA +	0.0	0.0	0.0	67.0	35.3	13.8	43.4	39.1	60.7	6	52.5
LEB SOCK +	0.0	0.0	0.0	58.1	39.0	13.1	42.6	33.6	57.4	6	49.4
UTOPIA (P)+	0.0	54.0	72.0	66.5	39.7	11.4	40.8	41.4	0.0	7	51.5
AC AVONLEA * +	0.0	0.0	0.0	0.0	0.0	16.1	47.8	42.5	62.3	4	56.2
ALZADA * (P)+	0.0	0.0	0.0	0.0	0.0	15.6	44.6	42.2	64.6	4	55.6

1994-2004 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
VIC	9	61.1	9	183	9	36.1	5	14.6
CHECK AVE	9	61.1	9	183	9	36.1	5	14.6
MONROE	9	60.6	9	180	9	35.0	5	15.3
KYLE	9	60.8	9	186	9	38.9	5	14.8
MUNICH +	8	60.6	8	183	8	32.4	5	14.8
BEN +	8	61.6	8	184	8	35.4	5	14.7
MOUNTRAIL * +	6	60.0	6	184	6	34.9	5	14.6
MAIER * +	6	61.7	6	184	6	32.9	5	15.0
PLAZA +	6	60.4	6	184	6	29.7	5	14.3
LEB SOCK +	6	61.7	6	183	6	33.3	5	14.7
UTOPIA (P)+	7	59.4	7	181	7	27.2	5	14.9
AC AVONLEA * +	4	60.8	4	183	4	35.3	3	16.0
ALZADA * (P)+	4	60.6	4	181	4	31.2	3	14.7

* 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 IRRIGATED**

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES											NINE YEAR COMPARABLE AVERAGE ¹
VARIETY	1995	1997	1998	1999	2000	2001	2002	2003	2004	YEARS	
VIC	87.1	80.0	73.2	74.5	45.4	37.8	71.5	64.5	80.1	9	68.2
CHECK AVE	87.1	80.0	73.2	74.5	45.4	37.8	71.5	64.5	80.1	9	68.2
MONROE	74.9	71.7	65.0	73.3	50.4	40.6	65.1	63.2	51.8	9	61.8
KYLE	71.3	85.8	69.4	73.3	50.2	45.2	79.1	57.0	84.9	9	68.5
MUNICH +	0.0	87.9	71.3	80.4	63.5	50.1	92.6	73.8	97.3	8	79.9
BEN +	0.0	84.2	68.1	64.2	60.1	43.6	72.8	73.3	84.4	8	71.3
MOUNTRAIL * +	0.0	0.0	0.0	88.4	69.7	47.4	88.9	83.8	98.5	6	87.0
MAIER * +	0.0	0.0	0.0	77.3	63.3	45.3	85.4	79.2	91.8	6	80.7
PLAZA +	0.0	0.0	0.0	89.7	62.1	44.1	100.5	65.8	101.8	6	84.7
LEBSOCK +	0.0	0.0	0.0	78.4	58.2	42.3	83.3	72.8	90.7	6	77.7
UTOPIA (P)+	0.0	91.0	64.0	88.6	62.9	44.7	98.1	85.7	0.0	7	81.7
AC AVONLEA * +	0.0	0.0	0.0	0.0	0.0	48.1	91.5	76.5	95.1	4	83.7
ALZADA * (P)+	0.0	0.0	0.0	0.0	0.0	49.0	93.6	82.1	91.2	4	84.9

1995-2004 AGRONOMIC TRAIT COMPARABLE AVERAGES

VARIETY	TEST WEIGHT (LB/BU)		HEADING DATE (181 = JUNE 30)		PLANT HEIGHT (INCHES)		PROTEIN (%)	
	YEARS	AVE	YEARS	AVE	YEARS	AVE	YEARS	AVE
VIC	9	62.5	7	182	9	38.5	5	13.1
CHECK AVE	9	62.5	7	182	9	38.5	5	13.1
MONROE	9	62.3	7	179	9	37.4	5	13.1
KYLE	9	62.1	7	184	9	42.0	5	12.8
MUNICH +	8	62.1	6	182	8	34.9	5	12.8
BEN +	8	63.1	6	183	8	38.4	5	12.6
MOUNTRAIL * +	6	62.4	5	182	6	36.0	5	12.0
MAIER * +	6	63.1	5	181	6	33.5	5	12.5
PLAZA +	6	62.9	5	182	6	30.1	5	12.0
LEBSOCK +	6	62.7	5	181	6	34.0	5	12.9
UTOPIA (P)+	7	61.6	5	181	7	28.8	4	12.1
AC AVONLEA * +	4	62.6	4	181	4	35.3	4	12.9
ALZADA * (P)+	4	63.1	4	180	4	30.6	4	12.9

* 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**

1995-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES

VARIETY	1995	1996	1997	1998	2000	2001	2002	2003	2004	YEARS	NINE YEAR COMPARABLE AVERAGE ¹
VIC	35.4	12.6	25.1	48.5	14.4	41.8	35.5	50.4	48.8	9	34.7
CHECK AVE	35.4	12.6	25.1	48.5	14.4	41.8	35.5	50.4	48.8	9	34.7
MONROE *	33.9	14.2	15.4	48.2	14.9	35.8	34.6	49.3	52.7	9	33.2
KYLE	28.3	15.5	31.3	54.7	12.4	53.8	37.8	51.0	54.8	9	37.7
MUNICH +	0.0	13.8	21.4	50.4	14.1	49.1	34.7	49.8	58.9	8	36.6
BEN * +	0.0	14.6	22.8	54.6	13.4	48.0	35.4	52.3	53.7	8	36.9
MOUNTRAIL * +	0.0	0.0	0.0	61.2	15.6	58.2	36.9	53.9	54.2	6	40.6
MAIER * +	0.0	0.0	0.0	57.2	14.4	45.6	37.3	55.2	59.4	6	39.0
PLAZA +	0.0	0.0	0.0	55.4	13.5	50.8	36.8	51.4	56.3	6	38.3
LEBSOCK +	0.0	0.0	0.0	51.4	13.8	50.5	38.2	53.3	50.9	6	37.4
UTOPIA (P)+	0.0	0.0	16.1	57.2	16.2	31.6	38.6	55.4	0.0	6	34.6
AC AVONLEA * +	0.0	0.0	0.0	0.0	0.0	50.4	34.5	53.8	61.9	4	39.4
ALZADA (P)+	0.0	0.0	0.0	0.0	0.0	31.5	42.2	54.7	54.3	4	35.9

1995-2004 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
VIC	9	60.7	9	173	9	29.0	4	15.8
CHECK AVE	9	60.7	9	173	9	29.0	4	15.8
MONROE *	9	60.2	9	170	9	27.4	4	15.4
KYLE	9	60.7	9	176	9	30.7	4	15.4
MUNICH +	8	60.2	8	173	8	24.1	4	15.6
BEN * +	8	61.2	8	173	8	27.4	4	15.6
MOUNTRAIL * +	6	59.9	6	174	6	27.2	3	14.9
MAIER * +	6	60.9	6	174	6	26.1	3	15.7
PLAZA +	6	60.0	6	175	6	23.2	3	14.7
LEBSOCK +	6	61.1	6	174	6	26.2	3	15.4
UTOPIA (P)+	6	59.0	6	171	6	21.0	2	15.2
AC AVONLEA * +	4	60.1	4	173	4	27.9	2	15.5
ALZADA (P)+	4	59.3	4	171	4	22.3	2	15.2

* 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

**DURUM WHEAT
DISTRICT 6
SIDNEY IRRIGATED**

1996-2004 GRAIN YIELD (BU/AC) SUMMARY FOR SELECTED DURUM VARIETIES										
VARIETY	1996	1997	1999	2000	2001	2002	2003	2004	YEARS	EIGHT YEAR COMPARABLE AVERAGE ¹
VIC	85.1	68.4	77.7	97.1	49.8	66.6	109.3	53.3	8	75.9
CHECK AVE	85.1	68.4	77.7	97.1	49.8	66.6	109.3	53.3	8	75.9
MONROE	83.8	59.6	76.0	95.7	54.8	66.0	100.0	53.4	8	73.7
KYLE	90.4	77.5	73.6	88.4	29.0	65.7	89.3	61.5	8	71.9
MUNICH +	95.7	64.5	86.9	90.0	54.0	67.8	123.0	64.1	8	80.8
BEN * +	96.8	66.6	83.7	98.9	58.4	66.2	112.3	74.7	8	82.2
MOUNTRAIL * +	0.0	0.0	98.7	110.5	56.3	70.5	125.3	62.4	6	87.6
MAIER * +	0.0	0.0	90.6	107.9	56.3	72.1	117.6	56.9	6	83.9
PLAZA +	0.0	0.0	94.2	105.6	57.7	64.4	118.4	56.1	6	83.0
LEBSOCK +	0.0	0.0	85.1	100.7	53.2	62.1	112.5	60.1	6	79.2
UTOPIA (P)+	0.0	56.0	81.9	79.2	42.1	61.6	109.4	0.0	6	69.6
AC AVONLEA * +	0.0	0.0	0.0	0.0	48.2	60.8	106.0	66.7	4	76.6
ALZADA (P)+	0.0	0.0	0.0	0.0	46.4	64.9	100.6	64.6	4	75.2

1996-2004 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
VIC	8	62.0	8	176	8	39.3	4	14.1
CHECK AVE	8	62.0	8	176	8	39.3	4	14.1
MONROE	8	61.6	8	173	8	36.8	4	13.9
KYLE	8	61.3	8	180	8	42.4	4	14.0
MUNICH +	8	61.7	8	176	8	33.1	4	13.6
BEN * +	8	62.9	8	176	8	37.6	4	13.7
MOUNTRAIL * +	6	62.2	6	178	6	36.5	3	13.6
MAIER * +	6	62.2	6	177	6	35.9	3	14.0
PLAZA +	6	62.0	6	179	6	31.3	3	12.9
LEBSOCK +	6	63.0	6	176	6	35.1	3	13.4
UTOPIA (P)+	6	58.6	6	174	6	26.3	2	13.7
AC AVONLEA * +	4	61.6	4	177	4	37.2	2	14.4
ALZADA (P)+	4	60.4	4	174	4	30.0	2	13.8

* 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