



The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

October 7, 1999

Issue No. 21



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Important Dates:

Malheur County Wheat League Annual Meeting	Nov. 3, 1999
Idaho Grain Producers Annual Convention	Nov. 15-17, 1999
Oregon Wheat League Annual convention	Nov. 29-30, 1999

The goal of this newsletter is to serve the best interests of Treasure Valley cereal producers. It will be issued periodically as information warrants. Correspondence and inquiries should be addressed to: **Parma Research and Extension Center, 29603 U of I Lane, Parma, ID 83660 (208-722-6701 Ext. 216) (Fax-208-722-6708) (Email bradb@uidaho.edu).** The *Cereal Sentinel* is made possible in part by a grant from the Idaho Wheat Commission.

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Winter Cereal Variety Performance

Irrigated Trials

The 1999 season marked the 14th season of the Southwestern Idaho Cooperative Extension Winter Wheat Performance Trials. The trials, supported by the Idaho Wheat Commission and Idaho Barley Commission, enable the testing of public and private varieties and advanced lines under the irrigated and dryland conditions of the Treasure Valley.

Four irrigated winter wheat trials were conducted during the 1999 season. Two of the trials were planted in early or late October and two were planted in mid November for evaluation of varieties under late planted conditions.

The Parma sites may have been limited in yield due to inadequate available N. Despite excellent yields of the more productive varieties, soft white winter wheat protein averaged only 9.1% in the early planted Parma trial and 8.4% in the late planted Parma trial. These protein levels are well below those normally necessary for maximizing yields.

Plant height was reduced in the early planted Parma site due to the delayed availability of irrigation water for the first irrigation. Plant height at Mtn Home may also have been limited by moisture stress during stem extension.

Soft White Winter Wheat

The irrigated soft white winter wheat results for the 1999 trials are given in Tables 1 and 2.

Stephens, released in 1978, is still the most commonly grown winter wheat in western Idaho. It's primary weaknesses are straw strength, test weight, protein levels higher than desirable for many Pacific Rim customers, and for sprinkler irrigation it can be too tall. It has very good yield potential and may be especially appropriate for later plantings.

Malcolm has performed at least as well or better than **Stephens** in high yield environments in most of our evaluations, particularly under mid October or earlier plantings. It tends to lose its yield advantage over **Stephens** under later plantings. **Malcolm** tends to lodge less than **Stephens** and has slightly better leaf rust resistance.

MacVicar, the most recent OSU release, has been less consistent in yield relative to **Stephens**. In many

Table 1. 1999 October Planted Irrigated Soft White Winter Wheat Performance in the Treasure Valley.

Variety	Yield bu/acre	Protein %	Test Weight lb/bu	Height in	Lodging %
<i>Parma (planted Oct. 8)</i>					
Brundage	137	9.2	63.9	36	0
BU6W93-477	150	8.6	62.6	37	5
Foote	89	9.5	61.8	39	5
ID8610420A	127	9.0	61.6	44	20
ID8510085-5	135	9.5	61.5	40	18
Lambert	139	9.2	61.6	38	0
MacVicar	153	9.1	62.8	38	3
Malcolm	153	9.3	62.3	38	15
Quantum 5021	144	8.8	59.9	38	35
Quantum 7817	140	8.5	60.5	41	20
Stephens	158	8.9	61.9	36	0
Ste/470 mix	148	9.5	64.3	37	0
Weatherford	161	9.0	61.9	39	5
WPB 470	140	10.1	66.8	36	0
LSD _{.10}	15	0.7	0.9	1	20
<i>Weiser (planted Oct. 27)</i>					
Brundage	129	9.9	62.5	35	0
BU6W93-477	145	9.8	61.9	42	23
Foote	106	10.2	61.4	40	0
ID8610420A	137	9.7	62.0	45	0
ID8510085-5	143	10.1	61.0	45	5
Lambert	143	9.9	61.6	43	8
MacVicar	155	10.2	63.0	40	0
Malcolm	147	9.9	62.3	40	3
Quantum 5021	133	9.5	61.0	39	0
Quantum 7817	145	9.9	60.1	43	5
Stephens	143	10.0	61.3	38	5
Ste/470 mix	151	10.2	62.5	40	0
Weatherford	138	10.5	62.3	41	0
WPB 470	152	10.8	64.0	38	3
LSD _{.10}	10	0.4	0.8	2	15

trials over the years **MacVicar** has been superior to **Stephens**, especially in early October plantings.

MacVicar has test weight and straw strength comparable to **Stephens** and **Malcolm**.

The new Idaho release **Brundage** is shorter than **Stephens** by as much as 7 inches depending on the conditions, a couple days earlier heading, and it's test weight this season ranged from 1.5 to 3.4 lb per bushel higher than **Stephens**. **Brundage** protein is typically lower than **Stephens** although that was not reflected in the 1999 data. **Brundage** has excellent straw strength and lodged less than **Stephens** where significant

Table 2. 1999 Late Planted Irrigated Soft White Winter Wheat Performance in the Treasure Valley.

Variety	Yield	Protein	Test Weight	Height	Lodging
	bu/acre	%	lb/bu	in	%
<i>Parma (planted Nov. 12)</i>					
Brundage	123	8.5	62.8	33	0
BU6W93-477	148	8.5	62.3	41	20
ID8610420A	130	8.0	61.6	46	5
Lambert	135	7.7	62.1	42	5
MacVicar	134	8.3	63.0	41	8
Malcolm	147	8.0	62.8	40	5
Stephens	136	8.5	61.0	41	30
Ste/470 mix	150	8.8	63.4	38	0
Quantum 7817	144	8.3	60.6	44	13
WPB 470	138	8.7	65.5	37	0
LSD _{.10}	17	0.7	1.1	2	20
<i>Mtn Home (planted Nov. 17)</i>					
Brundage	132	10.3	62.4	32	3
BU6W93-477	139	9.8	62.1	39	8
ID8610420A	147	9.2	61.8	41	0
Lambert	132	9.5	61.9	39	3
MacVicar	138	9.8	60.8	38	0
Malcolm	131	9.2	61.3	37	0
Quantum 7817	148	9.9	60.3	41	0
Stephens	143	10.6	60.3	37	15
Ste/470 mix	140	10.2	63.0	36	0
WPB 470	125	10.4	64.6	33	0
LSD _{.10}	21	0.9	1.8	2	14

tested **hybrid** through the 1999 season. **Quantum 7817** yielded as high as **Stephens** in seven of eight sites during 1998-99. **Quantum 7817** is taller than **Stephens** but has not lodged as much as **Stephens** in most trials with significant lodging.

Weatherford is a new OSU release. It has better disease resistance than **Stephens**, is taller but has good straw strength, and comparable test weight and protein. It has excellent yield potential with October plantings.

Foote is another new OSU variety, released primarily for the Willamette Valley due to its resistance to Leaf Blotch (*Septoria tritici*). Leaf Blotch is very uncommon in the Treasure Valley and it does not appear that **Foote** is nearly as well adapted as **Weatherford**, or other Oregon varieties, to our conditions.

Performance in any given trial is not as reliable as the combined performance over several sites and years. The yield results for each year (averaged over 2-4 sites) since 1993 are shown in Table 3.

The yearly average for **Malcolm** was either not different or higher than **Stephens** in all but one year of testing and in some years was appreciably higher than **Stephens**. The yearly average for **MacVicar** has been less consistent relative to **Stephens**. **Brundage** has not yielded as well as **Stephens** in three of the four years of testing. **Lambert** has been intermediate in yield between **Stephens** and **Brundage**.

Planting Dates and SWWW Variety Performance

Variety performance may be affected by planting dates in western Idaho. The results for the last four years in Table 3 may reflect the performance of wheat planted later in the fall. In the last four years there have been fewer early October planted trials. Variety

lodging occurred. It has yielded nearly as well as **Stephens** in the absence of stress, but lower than **Stephens** when stress conditions during vegetative growth reduced plant height as in the Parma locations. **Brundage** is therefore most competitive when produced under good management conditions. Certified seed of **Brundage** will be available for fall 1999.

WPB 470 is a Western Plant Breeders release and was evaluated for the fourth year. It has excellent yield potential, yielding as well as **Stephens**. **WPB 470** has outstanding test weight averaging from 2.7 to 4.9 lb per bushel better than **Stephens** in 1999. **WPB 470** is slightly shorter than **Stephens** and is generally less susceptible to lodging.

Lambert, a UI release, does not appear to have a yield advantage over **Stephens** in high or moderate yielding conditions and is 3" to 4" taller than **Stephens**.

HybriTech hybrids were evaluated for the fourth season in 1999. **Quantum 7817** was the most widely

Table 3. Irrigated Soft White Winter Wheat Yield Performance, 1991-99.

Variety	1993	1994	1995	1996	1997	1998	1999
Malcolm	153	155	140	147	126	123	144
MacVicar	143	154	137	149	123	122	145
Stephens	144	145	138	155	124	126	145
Lambert	--	138	135	147	124	122	137
Brundage	--	--	--	144	124	120	133
Quantum 7817	--	--	--	--	124	124	144
WPB 470	--	--	--	--	--	130	139
LSD _{.10}	7	6	5	6	7	5	8

performance has been measured using both October and November planting dates to document planting date effects on variety performance (Table 4).

Brundage with October plantings averaged the same yield as **Stephens** but under later planting conditions **Brundage** averaged 12 bu/A less than **Stephens**. **Malcolm, MacVicar, and Brundage** appear to lose their competitiveness in late fall plantings relative to **Stephens**. **WPB 470** in limited testing appears to be as well adapted to late planting as **Stephens**.

Table 4. Swww variety performance as affected by planting dates. 1996-99

Entries	October Planted	November Planted
-----bu/A-----		
1996-99		
	(8 sites)	(7 sites)
Brundage	135	124
Malcolm	138	132
MacVicar	140	130
Lambert	134	130
Stephens	139	136
WPB 470	140	--
1998-99		
	(4 sites)	(4 sites)
Brundage	128	--
Malcolm	137	130
MacVicar	141	130
Lambert	130	131
Stephens	138	132
WPB 470	137	133

Mixed Variety Performance

Few varieties have the characteristics necessary to maximize income year in and year out, even in locations where they are best adapted because climatic conditions vary from one year to the next. We often see varieties that over time have excellent yield potential but that in any given trial may not match other varieties in yield. Rarely is a variety consistently the highest yielding entry in all trials.

Variety mixtures are sometimes considered to stabilize yield or reduce the risks associated with planting single varieties. The planting of mixed varieties is not uncommon in the PNW where winter kill, diseases, or insects can be serious risks. This is particularly true for many dryland production systems

where wheat may be the predominant crop in the rotation.

Is there a place for mixtures in irrigated wheat plantings? Irrigated wheat production doesn't vary nearly as much as it does in the dryland system where moisture from year to year is so variable. Consistency of production then may not be as much an issue under irrigation. Nevertheless, are there weaknesses or shortcomings in current varieties that a mixture in our area would likely address?

Two weaknesses in the most commonly grown irrigated winter wheat, **Stephens**, that could be addressed by either a variety alternative or a mixed variety planting are test weight and lodging resistance or straw strength. Although **Stephens** has excellent yield potential, it often has less than 60 lb/bu test weight and is therefore graded No. 2 or No. 3. Also, despite good straw strength, **Stephens** does lodge, and better lodging resistance is desirable.

A desirable mixture would be one that sacrifices no production loss while improving both test weight and lodging resistance. We considered a mixture of **Stephens** and **WPB 470** because **WPB 470** has yielded comparable to **Stephens** in both early and late plantings and has extraordinary test weight and better straw

Table 5. Variety mixture performance, 1998-99.

Entry	Yield	Test Weight	Lodging
	Bu/A	lb/bu	%
1998 (3 sites)			
Stephens	125	57.8	6
WPB 470	131	61.5	4
Stephens/WPB 470¹	<u>134</u>	<u>59.7</u>	<u>4</u>
LSD_{.10}	8	1.0	10
1999 (4 sites)			
Stephens	144	61.1	13
WPB 470	138	65.2	1
Stephens/WPB 470	<u>146</u>	<u>63.3</u>	<u>0</u>
LSD_{.10}	7	0.5	7
1998-99 (7sites)			
Stephens	135	59.7	10
WPB 470	134	63.6	2
Stephens/WPB 470	<u>140</u>	<u>61.7</u>	<u>2</u>
LSD_{.10}	5	0.4	5

¹50% of each variety by weight

strength than **Stephens**.

A mixture of **Stephens** and **WPB 470** was evaluated at three sites in 1998 and four sites in 1999. The performance for each 1999 site is found in Tables 1 and 2. The average performance across all sites in either or both years is shown in Table 5.

Yield for the mixture was significantly higher than **Stephens** in 1998 but did not differ significantly in 1999. **WPB 470** test weight was consistently the highest, **Stephens** the poorest, and the mixture was intermediate. Lodging did not differ among the entries in 1998 but **Stephens** lodged more than either **WPB 470** or the mixture in 1999.

Regardless of which variety was the highest yielding when planted by itself, the mixture yielded at least as well when averaged across that year's sites. Why yield did not average intermediate between the two varieties as did test weight is not clear.

The results from two years and seven sites demonstrate at least the potential for mixtures to improve grain quality. **Stephens** would have graded No. 3 on the basis of test weight alone in 1998. Using a mixture improved the grade to No. 2. Whether mixtures will consistently result in improved yields remains to be seen. But test weight can be consistently improved with this mix.

Other mixtures have been evaluated in our production system. The mixture of **Stephens** with **Madsen**, a more winter hardy and disease resistant WSU variety, was examined in OSU trials for four years at irrigated sites in Oregon including Ontario. This mixture did not provide a yield advantage over **Stephens** in the irrigated sites in any year, nor was there a test weight advantage. But then **Madsen** by itself did not match **Stephens** in yield over the same period of time at Ontario and provided no test weight advantage. The increased winter hardiness and disease resistance of **Madsen** conferred no special advantage to the mixture over **Stephens** by itself in the absence of winterkill and disease.

The **Stephens/WPB 470** mixture will continue to be evaluated in future western Idaho trials.

Hard Winter Wheat

Hard red and white winter wheats are also evaluated in the Cooperative Extension Variety Performance Trials. Hard winter wheats are generally less productive than the soft white winter varieties but market prices can be higher as they are currently for the

hard red winters at higher protein levels. Test weight is generally higher with hard red winters.

Results for 1999 testing are shown in Table 6. Hard winter wheat varieties were managed the same as soft white varieties with no additional fertilizer N added for boosting protein. Protein values are understandably low, particularly at Parma where low N probably limited production of both soft white and hard red market classes.

Hawk is an Agripro variety (North American Plant Breeders, Inc.) that has performed well in several years of testing. It is taller in some years than the other varieties. It has good protein and excellent test weight.

Garland, a USU release, is the shortest of those listed with excellent lodging resistance. The relative yield performance of **Garland** has been sporadic, sometimes doing well, other times less well. It is one of the few lines in either the soft white or hard red winter classes that fit conveniently under wheel or hand line sprinklers. **Garland** test weight is fair.

Hoff, an OSU release, has good test weight, straw strength and lodging resistance, especially for its height. **Hoff** was named after the long time superintendent of the Malheur Experiment Station, Neil Hoffman. It has good yield potential.

Meridian, a UI release tends to lodge more than **Garland** or **Hoff**. It has yield potential comparable to **Hoff** and **Hawk**. Test weight for **Meridian** is lower than **Hoff** and **Hawk**.

Boundary is a UI release (1997) for high rainfall or irrigated conditions. It is an awnless variety with resistance to snowmold and dwarf bunt. **Boundary** does not yield as well as **Meridian**, **Hawk**, or **Hoff** in October plantings but may be more competitive in later plantings.

Connie is a new OSU release developed cooperatively with Pendleton Flour Mills. It is one of the few winter durums available. **Connie** was affected by winterkill this past year and does not have the winter hardiness of other hard or soft white winter wheats.

Ivory is a new OSU hard white winter wheat. It is intermediate in height and yield when compared to other hard winters.

Table 6. 1999 Irrigated Hard Red and Hard White Winter Wheat Performance in the Treasure Valley.

Variety	Yield bu/acre	Protein %	Test Weight lb/bu	Height in	Lodging %
<i>Parma (planted Oct. 8)</i>					
Connie (wdur)	148	9.7	63.6	29	0
Garland	139	10.1	63.4	29	0
Hawk	145	10.5	64.5	40	30
Hoff	151	9.7	65.4	36	0
ID0509	129	9.5	64.1	39	40
ID0517	148	10.1	65.0	35	0
Ivory (HWW)	151	9.2	63.9	38	0
Meridian	167	9.2	63.0	39	0
Sunstar Declo	171	10.1	64.0	36	3
LSD _{.10}	18	0.8	1.2	2	25
<i>Weiser (planted Oct. 27)</i>					
Connie (wdur)	97	12.2	62.8	32	0
Garland	114	12.0	63.3	32	0
Hawk	156	10.4	64.5	41	8
Hoff	134	10.5	63.5	40	5
ID0517	146	11.4	62.6	35	0
Ivory (HWW)	136	11.5	62.9	43	3
Meridian	139	10.7	64.4	41	23
Sunstar Declo	143	11.2	64.1	40	8
LSD _{.10}	9	0.6	0.6	5	15
<i>Parma (planted Nov. 12)</i>					
Boundary	144	8.6	63.6	40	3
Connie (wdur)	128	10.5	64.0	27	0
Garland	135	10.1	63.3	29	0
ID0517	149	10.0	63.0	36	0
Ivory (HWW)	137	8.8	64.0	39	0
Meridian	141	9.1	63.1	40	10
LSD _{.10}	18	0.9	1.0	3	5
<i>Mtn Home (planted Nov. 17)</i>					
Boundary	130	10.0	62.0	36	0
Connie (wdur)	117	12.7	62.9	28	0
Garland	125	11.5	63.5	26	0
ID0517	136	11.8	63.3	33	3
Ivory (HWW)	132	10.4	64.0	36	0
Meridian	153	10.8	64.1	36	0
LSD _{.10}	21	1.0	1.0	2	2

Sunstar Declo is a new release from Sundermann Breeding. It was only tested in two October planted sites in 1999. It had very good yield potential in the limited testing. Protein percent was good for the excellent yields obtained.

Table 7. Irrigated Hard Red Winter Wheat Yield Performance, 1992-99.

Variety	1992	1993	1994	1995	1996	1997	1998	1999
Boundary	--	--	--	--	--	110	94	--
Garland	102	138	134	139	137	--	--	128
Hawk	108	125	147	130	154	121	102	--
Hoff	96	134	137	128	148	117	115	--
Meridian	103	131	145	120	139	116	103	150
LSD _{.10}	11	10	5	5	9	10	9	8

Late Fall Planted Spring Wheat

We have reported in the past on the unconventional practice of planting spring wheat varieties in the fall. Spring wheat fall planted under Treasure Valley conditions had not winterkilled in several trials conducted in the area over the last decade. We continued these evaluations in 1999.

A limited number of spring hard red, hard white, or durum varieties were evaluated at two sites planted in mid November 1998. There was significant reduction in stands of some of these spring varieties due to winterkill, the first significant stand reductions that we've measured with late fall plantings since we began the evaluations in the 1990 season. Despite reduced stands these fall planted springs were reasonably productive (Table 8). They were generally less productive than the more winter hardy winter wheats that made up more than half the entries.

That some stand loss of fall planted spring wheat occurred is not surprising given that some winter wheat was lost in the area from winter kill as well. What was noteworthy was the degree to which they recovered. It

Table 8. Yield performance of fall planted spring wheat, 1999.

Entry	Parma	Mtn Home	Average
	-----bu/A-----		
Winter wheat average ¹	139	130	135
Vandal (HRS)	125	109	117
WPB 936 (HRS)	114	129	122
ID0377s (HWS)	120	111	116
Cortez (Sdur)	110	106	108

¹Average of hard red and hard white winters

seems remarkable that this is the first year in nine that measurable winterkill occurred under our conditions.

We have heard reports of some 1998 fall planted spring wheat that was replanted in the spring due to winterkill. These replantings appear to be limited. But several of those who planted **WPB 936** in the late fall reported some reduction in stands due to winterkill. As far as we know **WPB 936** is the only spring wheat that was fall planted a year ago.

Slightly improved soft white wheat market prices and lower prices for hard red varieties may preclude much fall planting of spring wheats this year. The price difference and incentive for choosing the HRS option isn't nearly as great now as a year ago.

Winter Barley

Winter barley was evaluated in the two earliest planted irrigated trials at Parma and Weiser (Table 9). Plant height was lower but yield was higher at Parma. Test weight was also lower at Parma although test weights in 1999 were much improved over those of 1998 as were yields.

Boyer is the oldest of the varieties tested and has good yield potential. It lacks Stripe Rust resistance and is as weak strawed as the other entries. **BZ5W96-21** is a Western Plant Breeders advanced line, the first winter barley from that breeding program that we've had an opportunity to evaluate. It is very short with good yield potential but had the poorest test weight and the highest percentage thins of all the entries.

Kold and **Strider**, OSU releases, are the only released varieties with Barley Stripe Rust resistance. Stripe Rust was not present in 1999. **Strider** has the greater yield potential of the two as well as better test weight.

Sunstar Pride has excellent yield potential but is typically less plump with more thins than other released varieties tested. **Sunstar Pride** does not have Stripe Rust resistance. **WPB Sprinter** averaged among the highest in test weight and lowest in thins even with significant lodging. **WPB Sprinter** has good yield potential in the absence of Stripe Rust.

ORW10 and **ORW11** are OSU advanced lines with Stripe Rust resistance. **ORSW10** was affected by bird feeding at both locations. OSU is not pursuing these lines in the future.

Winter barley performance over the last 4 years is also shown in Table 9.

Table 9. 1999 Irrigated Winter Barley Performance.

Variety	Yield	Test Weight	Height	Lodging	Thins
	bu/A	lb/bu	in	%	%
<i>Parma (planted Oct. 8)</i>					
Boyer	177	48.6	41	15	15
BZ5W96-21	173	47.0	30	0	44
Kold	159	49.6	39	3	15
ORW10	141	52.4	39	0	3
ORW11	127	51.8	41	3	3
Strider	188	48.6	42	23	7
Sunstar Pride	192	50.4	38	3	15
WPB Sprinter	159	52.1	41	20	8
LSD _{.10}	16	1.2	2	21	7
<i>Weiser (planted Nov. 27)</i>					
Boyer	136	52.6	44	0	0.8
BZ5W96-21	127	50.6	34	3	2.5
Kold	116	53.3	42	0	1.1
ORW10	54	54.4	42	0	0.7
ORW11	76	54.1	45	0	0.5
Strider	110	54.5	48	8	0.6
Sunstar Pride	121	54.8	37	0	0.6
WPB Sprinter	141	54.4	43	8	0.4
LSD _{.10}	25	1.1	4	9	0.6
<i>1996-99 (8 sites)</i>					
Boyer	127	48.3	40	33	--
Kold	126	48.3	40	32	--
Strider	139	48.7	41	38	--
Sunstar Pride	139	48.7	37	35	--
WPB Sprinter	127	50.7	40	37	--
LSD _{.10}	8	0.6	1	9	

Dryland Trials

Dryland winter wheat and barley production in southwestern Idaho's outlying areas generally receives less than 15 inches annual rainfall and is planted in a wheat fallow rotation. Rainfall during the 1995-98 period was above normal but 1999 was well below normal and dryland production suffered accordingly. In addition, the 1999 dryland variety trial was infested with both cheat grass and rye. Yields were very poor at this site but the data are reported. Significant winter kill occurred in the winter barley.

Winter Wheat

Results from previous dryland trials indicated that hard red winter wheat was as productive as the soft white winter wheat commonly grown. In addition, the

hard red winter class averaged about three pounds per bushel higher test weight. Results from 1999 are consistent with previous reports.

As with the irrigated trials, the hard red varieties are not managed differently than the soft whites. Nevertheless, protein for the hard red entries averaged well over 13% as expected with lower yields from reduced moisture.

Club wheat does not yield as well as common soft white wheat. It was true in wetter years and was true under the more inclement conditions of 1999. Club wheats averaged about 70% as well as the common soft whites (6.3 vs 8.8 bu/A).

The OSU soft whites **Stephens**, **Malcolm**, and **MacVicar** were as productive over the previous four years as **Eltan** and **Madsen**, the WSU soft white releases targeted for the wheat fallow system. **Madsen** in particular is popular in eastern Washington due to its strawbreaker footrot resistance. **Eltan** was released for its excellent emergence, winter hardiness, and resistance to snow mold, common bunt, and dwarf bunt. **Eltan** and **Madsen** have not proved to be better adapted for this dryland wheat fallow system than other commonly grown soft white winters.

Among the hard reds, OSU's **Hoff** and UI's **Meridian** were irrigated releases that have done reasonably well in these trials. **Bonneville**, a UI release, has resistance to snow mold and dwarf bunt, but yield has tended to lag behind the most productive varieties the past four years.

The more productive hard reds through the first four years of testing were **Promontory** (USU, '91) and **Buchanan** (WSU, '89). **Buchanan** was released for its excellent ability to emerge from deeper planting depths, and winter hardiness due in part to moderate snow mold tolerance.

Promontory has both snow mold and dwarf bunt resistance. **Promontory** appears to have higher test weight than **Buchanan** and higher protein in wetter years.

Boundary was the most productive variety under the conditions of this trial. It is only the second year of dryland testing for **Boundary**. The higher yield of this

Table 10. Dryland Winter Cereal Performance, Midvale, 1996-1999.

Variety	Yield					Protein Test		Height
	1996	1997	1998	1999	1996-99	-----1999-----	Weight	
	-----bu/acre-----					%	lb/bu	inches
<i>Soft White Winter Wheat</i>								
<i>Commons</i>								
Brundage	55	34	61	8	42	11.9	61.8	20
Eltan	57	37	54	9	42	11.9	62.3	23
Lambert	59	36	56	11	43	14.0	61.5	25
MacVicar	50	41	65	11	44	12.6	61.0	24
Madsen	56	36	64	12	44	11.2	59.3	23
Malcolm	55	38	60	8	43	11.9	60.0	23
Rod	61	32	61	10	43	11.2	61.8	22
Stephens	55	32	61	8	41	11.8	60.0	23
Weatherford	--	--	--	9	--	12.8	61.0	25
WPB 470	--	--	48	9	--	13.4	65.0	22
<i>Clubs</i>								
Hiller	53	30	51	4	37	12.0	57.5	20
Rohde	43	26	41	6	31	12.0	63.0	20
Temple	49	29	46	7	34	12.3	58.5	20
Tres	51	32	56	8	39	11.3	61.3	21
Average	53	34	56	8	40	12.2	60.8	22
LSD_{.10}	6	6	12	6	4	1.5	0.5	3
<i>Hard Red Winter Wheat</i>								
Bonneville	52	36	41	14	39	15.0	66.5	26
Boundary	--	--	50	24	--	--	--	--
Buchanan	56	39	53	15	47	12.4	64.0	19
Connie (DW)	--	--	--	1	--	13.9	--	20
Finley	--	--	51	11	--	13.1	66.0	26
Hatton	47	32	52	12	39	13.9	65.0	27
Hawk	--	36	58	17	45	15.0	61.5	19
Hoff	50	41	49	7	41	14.1	61.0	21
ID0513	--	--	--	12	--	14.1	--	24
ID0537 (HW)	--	--	--	10	--	13.2	61.5	25
Ivory (HW)	--	--	--	4	--	13.5	--	22
Judith	47	31	51	8	39	13.6	59.0	25
Meridian	57	38	52	12	46	--	64.5	17
Promontory	59	37	58	8	46	13.4	65.0	21
Utah 100	57	37	53	8	44	12.7	62.0	25
Average	54	37	52	9	43	13.8	63.3	22
LSD_{.10}	9	7	9	5	4	1.4	0.5	4

entry was reflected by its poorer protein. **Finley** also has only been tested for two years. **Utah 100** has yielded above average in previous years but less than **Promontory**. **Connie** suffered more winterkill than any other entry.

No winter barley was harvested due to winter kill. Winter barley stands have been reduced in most years but winterkill was more severe this year than any year previous.

Seed Availability

Occasionally variety performance will be reported in the *Cereal Sentinel* for varieties that are not readily available in western Idaho. If you have interest in a particular variety check first with your regular seed supplier. If not in their inventory they may be able to secure seed from a more distant source.

I will maintain a list of available varieties at the various seed dealers. The list will then be available at local county UI Cooperative Extension offices.

Club Wheat???

The Treasure Valley hasn't seen significant Club wheat production for decades. Club wheats are high quality soft wheats blended with common soft whites (that we normally produce) to constitute the Western White class. It is the Western White class that is exported to many of our best foreign customers in the Pacific Rim. Until fairly recently the Western White class required a minimum of 10% club wheat.

Some foreign customers such as Japan have been persuaded to increase the minimum club percentages in their white wheat purchases to 25%. The Washington and Oregon Wheat Commissions were instrumental in this maneuver and assured these good customers that annual production would be sufficient to meet the demand. By the way, there is little club wheat produced in Idaho.

Well, guess what? It seems that poor club wheat production from the traditional dryland areas isn't sufficient to meet the demand after all. The club wheat premium wasn't sufficient to justify planting club wheat over common soft white wheat last fall and acreage was down. Then lack of rainfall limited production in the fewer acres planted. All this is reflected in the current price. Market prices for club wheat have recently ranged as high as \$1.30 a bushel above common soft white prices. That's about 50% higher price than common soft white wheat.

Can we produce club wheats? Sure can. Most of the winter wheat production in this area was club wheat at one time. We don't grow it now because it is not as

productive as the semidwarf common types we normally produce. It is weak strawed and prone to lodge.

Higher market prices for club wheat are not unusual. Club prices have averaged higher in 14 of the last 16 market years. Since 1982 annual average club prices have ranged from \$.09 less to \$.70 a bushel over common soft whites. The average price difference over that time was \$.17 a bushel.

We have evaluated club wheats in the Cooperative Extension variety trials. They yielded from 81 to 96% of the common soft whites depending on the site and year and were 89% as productive over all.

Let's assume common soft whites yield 120 bu/A and the clubs only 89% as much or 107 bu/A. Using those figures and the historical Portland prices for each year over the period 1982-98, club wheat would have provided higher returns in only 2 of the 16 years.

Let's assume a worse case scenario, that clubs only yield 81% as much or 97 bu/A. The market price would have to be at least 19% better for the clubs to break even, assuming everything else is equal. With local common soft wheat prices of \$2.50/bu, prices for clubs would have to be almost \$3/bu to break even. Current club prices at \$3.50 a bushel are certainly high enough at the moment to do better than break even. But it's doubtful whether you can lock in a current price for next year.

Prices that you can lock in are likely based on the expectations for next year's harvest. With current prices as high as they are, surely dryland plantings will increase, in turn increasing the supply and reducing the new crop price. Unless you can lock in prices for club wheat that are significantly better than the \$3.02/bu recently quoted to me it doesn't appear that club wheat is a viable alternative for most of our irrigated producers.

The Club wheat situation is unsettled at present. I've heard one possibility that the Washington and Oregon Wheat Commissions may try to talk some customers (that they previously persuaded to increase their Club wheat requirement) into reducing their requirement for club wheat. I've even heard some talk that some of the better quality common soft white wheat produced from our area could be substituted for the club wheat. Any reduction in the club requirement in the Western White class would have a significant downward effect on the club wheat premium.

Wouldn't it be something if you could get a hefty club wheat premium for the common soft white winter wheat you normally grow. The Wheat Marketing

Center in Portland has demonstrated that **Stephens** and **Malcolm** varieties historically have better quality from our area than others. We have provided them samples of these varieties from this year's Cooperative Extension trials in western Idaho to verify this year's quality.

Since Club wheat varieties don't have the yield potential and lack the straw strength of common soft whites they should not be fertilized with nitrogen as heavily. There could be some small cost savings there.

On the down side, besides the lower production, it may be necessary to use Cerone to avoid lodging at sites with excessive residual N. And, local elevators will probably not store the production themselves, though they may help you market it. So some production and marketing costs could be higher. I do not know of seed available in this area.

Cereal Variety Performance in other Areas

Small grain seed producers may be interested in the performance of varieties used in other production areas. Variety performance in other irrigated and

dryland areas of southern Idaho can be found at the University of Idaho Cereals Extension Project at the Aberdeen Home Page. It can be reached on the internet at <http://www.uidaho.edu/ag/extension/>. Variety performance in Oregon production systems can also be viewed at the OSU Extension Cereals web site reached at <http://www.css.orst.edu/cereals>.

Past Cereal Sentinels

Previous issues of the *Cereal Sentinel* newsletter can be viewed on the Southwest Idaho Extension Cereals Homepage at <http://www.uidaho.edu/cereals/SWIdaho>. Thanks to Donnie Wicker for the time spent converting the files so that they could be viewed on the web site.

Acknowledgement

The Idaho Wheat Commission has awarded a grant of \$2500 to subsidize this newsletter. We are pleased to acknowledge their support for this Cooperative Extension educational project.

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