



The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

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Important Dates:

Malheur County Wheat League Annual Meeting Nov. 1, 2000
Idaho Grain Producers and Oregon Wheat League combined Annual Meeting Nov. 14-15, 2000

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 2000 season marked the 16th season of the Southwestern Idaho Cooperative Extension Winter Wheat and Barley 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 conditions of the Treasure Valley and dryland conditions of Washington Co.

Four irrigated winter wheat trials were conducted during the 2000 season. Two of the trials were planted in mid October and two in mid November.

Production in the October plantings was excellent, the highest that we've ever measured. Production was also good in the later plantings, but lower than with October seedings.

Plant height was moderate in all locations suggesting a general absence of stress during vegetative growth. Test weight was excellent to outstanding indicating excellent conditions for grain filling. Protein levels in the soft whites were close to those associated with adequate available N for maximum production.

Soft White Winter Wheat

The irrigated soft white winter wheat results for the 2000 trials are given in Tables 1 and 2.

Stephens, released in 1978, is the oldest variety in the trials, and still the most commonly grown winter wheat in western Idaho. It's primary weakness is test weight, which is only fair. Protein levels tend to be higher than desirable for many Pacific Rim customers, and for sprinkler irrigation it can be too tall. It has good straw strength and lodging resistance but does lodge under high wind conditions. It has excellent 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, particularly under mid October or earlier plantings. It tends to lose its yield advantage over **Stephens** in later plantings. **Malcolm** protein is typically lower than **Stephens**.

MacVicar has been less consistent in yield relative to **Stephens**. In many trials **MacVicar** has been superior to **Stephens**, especially in early October

Table 1. 2000 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. 14)</i>					
Brundage	145	9.8	66.0	37	0
BU6W93-477	150	9.9	65.0	40	0
BU6W93-481	172	9.9	64.4	44	0
Hubbard	166	9.9	64.8	43	0
ID-B-96	140	9.8	63.6	36	0
ID8510085-5	167	10.0	64.4	44	0
ID87-52814A	167	9.4	65.9	37	0
MacVicar	158	9.8	64.6	38	0
Malcolm	163	10.0	63.9	38	0
OR939526	168	9.5	64.0	39	0
OR936528	164	10.1	63.9	39	0
Stephens	151	9.9	65.4	38	0
Ste/470 mix	160	10.2	65.4	38	0
Weatherford	164	10.7	63.9	41	0
WPB 470	160	10.4	68.8	38	0
LSD_{.10}	15	0.3	1.4	1	-
<i>Weiser (planted Oct. 20)</i>					
Brundage	161	10.2	63.8	36	0
BU6W93-477	176	10.5	62.9	41	0
BU6W93-481	170	10.1	61.4	41	0
Hubbard	174	10.2	62.1	46	0
ID-B-96	152	9.7	61.5	36	0
ID8510085-5	173	11.1	62.6	42	0
ID87-52814A	176	9.8	63.3	40	0
MacVicar	179	10.2	62.6	41	0
Malcolm	177	9.8	62.8	39	0
OR936526	169	9.8	61.8	41	0
OR939528	181	10.1	61.4	42	0
Stephens	174	10.4	62.0	38	0
Ste/470 mix	162	10.8	64.0	39	0
Weatherford	170	10.5	61.9	41	0
WPB 470	164	11.3	65.4	38	0
LSD_{.10}	12	0.6	0.8	2	-

plantings. **MacVicar** has test weight and straw strength comparable to **Stephens** and **Malcolm** but protein is lower than **Stephens**, similar to **Malcolm**.

The 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 is invariably higher than **Stephens**, **Malcolm**, or **MacVicar**. **Brundage** protein is typically lower than **Stephens**. **Brundage** has excellent straw strength and lodges less than **Stephens** where significant lodging

Table 2. 2000 Late 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 Nov. 10)</i>					
Brundage	134	9.7	64.9	35	23
BU6W93-477	138	10.4	64.3	41	35
BU6W93-481	138	10.1	63.9	41	20
Hubbard	125	9.9	64.4	44	8
ID-B-96	141	9.6	62.8	38	15
ID86-10085,5	143	10.1	63.9	42	23
ID87-52814	134	9.1	62.8	39	14
MacVicar	148	10.0	64.0	39	8
Malcolm	141	9.7	62.5	38	23
OR936526	133	10.2	62.1	41	25
OR939528	139	10.5	61.4	39	0
Rod	132	10.1	61.3	37	28
Stephens	149	10.3	64.1	37	13
Ste/470 mix	158	11.2	65.1	38	3
Weatherford	143	10.6	63.0	41	15
WPB 470	142	10.9	66.6	37	0
LSD _{.10}	15	0.6	1.1	2	24
<i>Nampa (planted Nov. 19)</i>					
Brundage	134	10.5	64.5	35	0
BU6W93-477	151	10.8	63.3	40	0
BU6W93-481	142	10.3	63.5	40	0
Hubbard	147	10.7	63.1	43	0
ID-B-96	137	9.2	61.5	35	0
ID85-10085-5	142	11.4	63.6	43	0
ID87-52814A	151	10.1	62.8	37	40
MacVicar	148	9.6	64.3	38	0
Malcolm	158	10.6	63.1	37	0
OR939526	163	11.0	62.1	38	0
OR939528	149	10.9	62.8	39	0
Rod	147	10.3	62.5	36	0
Stephens	149	11.4	62.8	39	0
Ste/470 mix	145	11.3	64.3	39	0
Weatherford	157	10.9	63.6	42	0
WPB 470	128	12.3	65.9	36	0
LSD _{.10}	15	0.9	1.1	2	13

with better straw strength and is less susceptible to 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.

Hubbard is a new Idaho release. In three years of testing it has exceeded the yield of **Brundage** in two years but matched the production of **Stephens** in only two of three years. It is taller than **Stephens** by 5-6 inches. Despite its height, it has good straw strength and lodging resistance comparable to **Stephens**. Test weight is a bit better than **Stephens** across all sites.

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 each year) since 1994 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 four of the five years of testing. **Hubbard** has essentially matched the performance of **Stephens** in only two of three years. **WPB 470** has had difficulty consistently keeping pace with **Stephens**.

Table 3. Irrigated Soft White Winter Wheat Yield Performance, 1994-00.

Variety	1994	1995	1996	1997	1998	1999	2000
	bu/A						
Malcolm	155	140	147	126	123	144	158
MacVicar	154	137	149	123	122	145	157
Stephens	145	138	155	124	126	145	154
Brundage	--	--	144	124	120	133	142
Hubbard					128	135	152
WPB 470	--	--	--		130	139	147
LSD _{.10}	6	5	6	7	5	8	7

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 performance has been measured using both October and

occurs. It yields nearly as well as **Stephens** in the absence of stress, but lower than **Stephens** when stress conditions during vegetative growth reduce plant height.

WPB 470, a Western Plant Breeders release, has excellent yield potential, yielding as well as **Stephens** in some sites. **WPB 470** has outstanding test weight, the best of any variety that we have evaluated including **Brundage**. **WPB 470** is slightly shorter than **Stephens**

Table 4. Swww variety performance as affected by planting dates. 1996-00

Entries	October Planted	November Planted
	-----bu/A-----	
	1996-00	
	(10 sites)	(9 sites)
Brundage	138	126
Malcolm	144	136
MacVicar	145	134
Stephens	<u>143</u>	<u>138</u>
LSD_{.10}	4	5
	1998-00	
	(6 sites)	(5 sites)
Brundage	135	127
Malcolm	148	137
MacVicar	150	135
Stephens	146	138
WPB 470	<u>145</u>	<u>131</u>
LSD_{.10}	5	7

November planting dates to document planting date effects on variety performance (Table 4).

All varieties are less productive if planted in November rather than October. But some varieties in particular appear to be more susceptible to later planting conditions. **WPB 470**, **Brundage**, and **MacVicar** seem the most sensitive to delayed plantings. **Stephens** appears to be the least sensitive to planting dates.

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 and other growing conditions vary from one year to the next and from site to site. 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. Over 250,000 acres of mixed plantings were reported in Washington this past season using 14 different combinations of varieties.

Is there a place for mixtures in irrigated wheat? There are weaknesses in current varieties in our area that a mixture 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 frequently graded No. 2 or No. 3. Also, despite good straw strength, **Stephens** does lodge and better lodging resistance is desirable.

A successful mixture would sacrifice no yield 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 early plantings, has extraordinary test weight, and better straw strength than **Stephens**.

The mixture was evaluated at three sites in 1998, four sites in 1999, and four sites in 2000. The performance for each 2000 site is found in Tables 1 and 2. The average performance across all sites in each or all years is shown in Table 5.

Table 5. Variety mixture performance, 1998-00.

Entry	Yield	Test	Lodging
	bu/A	Weight 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
	2000 (4 sites)		
Stephens	154	63.6	3
WPB 470	147	66.7	0
Stephens/WPB 470	<u>155</u>	<u>64.7</u>	<u>1</u>
LSD_{.10}	7	0.6	6
	1998-00 (11 sites)		
Stephens	142	61.1	7
WPB 470	139	64.7	1
Stephens/WPB 470	<u>145</u>	<u>62.8</u>	<u>1</u>
LSD_{.10}	4	0.3	4

¹50% of each variety by weight

Yield for the mixture was significantly higher than **Stephens** in 1998 but did not differ significantly in 1999 or 2000. **WPB 470** test weight was consistently the highest, **Stephens** the poorest, and the mixture consistently intermediate. Lodging did not differ among the entries in 1998 and 2000 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 show that this mixture is more stable in yield from year to year than either variety planted alone. The results from three years and eleven sites also demonstrate the potential for this mixture to improve grain grade and lodging resistance.

Hard Winter Wheat

Hard red, hard white, and winter durum wheats were 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 2000 testing are shown in Tables 6 and 7. Hard winter wheat varieties were managed the same as soft white varieties with no additional fertilizer N added for boosting protein. Protein values consequently may be lower than if managed for higher protein.

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

Garland, a USU release, is the shortest of those listed and has 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 varieties in any winter wheat class that fits conveniently under wheel or hand line sprinklers. **Garland** test weight is only fair compared to most other entries.

Hoff, an OSU release, has good test weight, straw strength and lodging resistance. **Hoff** is taller than **Meridian** in some sites. It has good yield potential and tends to have slightly higher protein than **Meridian**.

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 as suggested by the results in Table 7. Its test weight and protein tends to be lower than **Hawk** and **Hoff**.

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 in 1999 but survived at all irrigated sites in 2000. It does not have the winter hardiness of other hard or soft white winter wheats. **Connie** was among the most productive varieties in the Parma plantings where there was no late season frost. But **Connie** was significantly less productive at off station sites where there was frost on May 12.

Ivory, a relatively new OSU hard white winter wheat, is intermediate in height and yield when compared to other hard winters. The protein content is lower in **Ivory** than in many of the hard red winters.

Sunstar Declo is a release from Sundermann Breeding. It has only been tested in October planted sites in 1999 and 2000. It had good yield potential in the limited testing. Protein percent was good for the yields obtained. It is shorter than most winter entries other than **Garland** and **ID0517** and has straw strength comparable to the more productive entries.

ID0517, an Idaho advanced line, is in its second year of Treasure Valley testing. Compared to **Meridian** and **Boundary**, the previous Idaho hard red winter releases, **ID0517** is higher in protein and tends to be shorter at most sites and more resistant to lodging. Yield performance for **ID0517** has fluctuated widely, ranging from better to worse depending on the growing conditions. Test weight is comparable to other hard red winters. The other Idaho advanced line, **ID0561**, has been dropped from further testing.

Pillar is a new release from Western Plant Breeders. **Pillar** was less productive than the leading hard red entries. It is somewhat shorter than **Meridian**, **Hoff**, and **Hawk** and similar to **ID0517**. Protein for **Pillar** ranked the highest of the hard winter entries.

The GM advanced lines are General Mills hard whites. Of these **GM10002** appears to have the best yield potential.

Table 6. 2000 Irrigated October planted Hard Winter Wheat Performance in the Treasure Valley.

Variety	Yield	Protein	Test Weight	Height	Lodging
	bu/acre	%	lb/bu	in	%
<i>Parma (planted Oct. 14)</i>					
<u>Hard Reds</u>					
Garland	147	11.4	64.3	29	0
Hawk	153	10.6	66.3	44	0
Hoff	164	10.8	67.5	43	0
ID0517	155	11.7	65.9	42	0
ID0561	161	10.7	67.1	42	0
Meridian	163	10.5	66.5	40	0
Pillar	145	12.2	64.5	39	0
Sunstar Declo	158	11.2	66.0	36	0
WPB936 (hrs)	138	12.5	66.8	37	0
<u>Hard Whites</u>					
ID377s (hws)	166	11.1	68.9	42	0
Ivory	148	10.4	66.0	41	0
GM10001	148	10.7	67.1	43	0
GM10002	153	10.7	67.3	36	0
Nuwest	128	11.4	64.3	44	0
<u>Durums</u>					
Connie	170	10.2	69.0	37	0
LSD _{.10}	10	0.6	1.3	2	-
<i>Weiser (planted Oct. 20)</i>					
<u>Hard Reds</u>					
Garland	141	12.0	62.0	29	0
Hawk	154	11.1	65.3	41	0
Hoff	159	11.2	64.6	40	0
ID0517	139	11.3	63.3	36	0
ID0561	146	11.1	65.3	40	0
Meridian	136	11.6	62.8	39	0
Pillar	133	12.3	62.4	37	0
Sunstar Declo	142	11.3	63.5	33	0
WPB936 (hrs)	132	12.3	64.9	35	0
<u>Hard Whites</u>					
Ivory	150	11.0	63.8	40	0
<u>Durums</u>					
Connie	109	10.4	65.0	35	0
LSD _{.10}	18	0.7	0.6	2	-

Table 7. 2000 Irrigated Nov. planted Hard Winter Wheat Performance in the Treasure Valley.

Variety	Yield	Protein	Test Weight	Height	Lodging
	bu/acre	%	lb/bu	in	%
<i>Parma (planted Nov. 10)</i>					
<u>Hard Reds</u>					
Boundary	143	10.3	64.0	40	5
Garland	124	11.3	63.0	30	3
Hawk	137	11.4	66.0	41	25
Hoff	132	11.4	65.4	38	5
ID0517	151	11.9	64.8	37	0
ID0561	133	11.1	65.9	39	0
Meridian	131	11.0	64.5	39	8
WPB936 (hrs)	140	13.0	66.3	34	0
<u>Hard Whites</u>					
ID377s (hws)	147	11.8	67.9	41	23
Ivory	135	10.2	64.3	38	5
<u>Durums</u>					
Connie	143	11.8	67.5	36	0
LSD _{.10}	17	0.9	1.3	2	18
<i>Nampa (planted Nov. 19)</i>					
<u>Hard Reds</u>					
Boundary	141	10.6	63.9	38	0
Garland	148	11.3	63.0	29	0
Hawk	129	10.8	65.6	39	0
Hoff	129	11.6	65.3	39	0
ID0517	116	12.6	63.4	32	0
ID0561	119	11.2	65.5	36	0
Meridian	130	11.3	64.6	37	0
WPB936 (hrs)	83	16.3	63.5	30	0
<u>Hard Whites</u>					
ID377s (hws)	135	12.0	66.6	41	0
Ivory	134	11.5	64.4	40	0
GM10001	102	11.1	65.0	37	0
GM10002	138	12.0	65.5	38	0
GM10003	124	11.0	63.9	34	0
Nuwest	132	11.0	64.8	45	0
<u>Durums</u>					
Connie	88	13.7	63.9	33	0
LSD _{.10}	13	1.7	0.9	3	-

Hard winter wheat variety performance in each of several years is shown in Table 8. No variety has proven to be a clear leader in all years.

Fall Planted Spring Wheat

We continued evaluations of fall planted spring wheats in 2000. One spring hard red (WPB936) and one spring hard white (ID377s) variety were evaluated at selected sites in 2000. The relative performance of these spring varieties can be seen in Tables 6 and 7.

Table 8. Irrigated Hard Red and White Winter Wheat Yield Performance in the Treasure Valley, 1993-2000.

Variety	1993	1994	1995	1996	1997	1998	1999	2000
Boundary	--	--	--	--	110	94	--	--
Garland	138	134	139	137	--	--	128	139
Hawk	125	147	130	154	121	102	--	142
Hoff	134	137	128	148	117	115	--	145
Meridian	131	145	120	139	116	103	150	139
ID0517	--	--	--	--	--	--	145	139
Ivory	--	--	--	--	--	--	139	140
LSD _{.10}	10	5	5	9	10	9	8	7

There was no winter kill of these spring wheats in 2000, but a late season frost on May 12 may have affected the performance of WPB936 at Nampa. WPB936 was significantly less productive than winter wheats in two of four trials. In contrast, ID377s matched the performance of hard winter wheats in all locations.

Small commercial acreages of late fall planted spring wheats continued for the second year this season. Although production may not consistently match winter wheats planted under the same conditions, growers report much improved yields over the same varieties planted in the spring.

Triticale

Triticale, a cross of wheat and rye, has been evaluated periodically for grain yield in the Cooperative Extension trials. We evaluated two Polish varieties this past season because of their outstanding performance in OSU trials in western OR. In those trials the varieties Alzo and Bogo were higher yielding than the best of the winter wheats.

Triticale is used primarily for feed. Much of our Treasure Valley wheat production these past two years has also been fed to livestock due to the poor market price in Portland. If producers conclude from available stocks information or futures prices that their wheat production will be marketed locally as feed for livestock this next year, they might just as well produce as much feed as they can. That just might be triticale.

Local performance of these triticale varieties in relation to Stephens winter wheat is shown in Table 9. Alzo and Bogo yielded as well as Stephens in all locations and better than Stephens in at least one irrigated site. We will continue to evaluate the agronomic performance of these triticales under Treasure Valley conditions.

The triticale varieties are marketed by Resource Seeds, Inc. Resource Seeds has entered into an agreement with Wilbur Ellis that will allow Wilbur Ellis to contract for the production of these varieties in Western Oregon and Western Washington. There are

Table 9. Triticale vs Stephens Winter Wheat Performance in the Treasure Valley.

Variety	Yield	Protein	Test Weight	Height	Lodged
	bu/acre	%	lb/bu	in	%
Irrigated					
<i>Parma (planted Oct. 14, 1999)</i>					
Alzo	197	11.8	60.0	49	0
Bogo	186	12.3	58.0	49	0
Stephens	151	9.9	65.4	38	0
LSD _{.10}	15	0.3	1.4	1	-
<i>Weiser (planted Oct. 20, 1999)</i>					
Alzo	179	9.2	59.4	48	0
Bogo	176	10.1	54.1	47	0
Stephens	174	10.4	62.0	38	0
LSD _{.10}	12	0.6	0.8	2	-
<i>Parma (planted Nov 10, 1999)</i>					
Alzo	153	8.9	57.6	49	3
Bogo	145	9.8	57.6	44	10
Stephens	149	10.3	64.1	37	13
LSD _{.10}	15	0.6	1.1	2	24
<i>Nampa (planted Nov. 19)</i>					
Alzo	163	10.0	59.3	45	0
Bogo	148	10.7	58.1	45	0
Stephens	149	11.4	62.8	39	0
LSD _{.10}	15	0.9	1.1	2	13
<i>Ontario (1999)</i>					
Bogo	138	8.6	57.5	--	--
Stephens	126	10.2	58.6	--	--
LSD _{.10}	16	0.7	3.1	--	--
<i>Ontario (2000)</i>					
Alzo	157	9.5	59.9	52	0
Bogo	149	9.7	56.4	49	0
Stephens	152	10.1	62.7	41	0
LSD _{.10}	16	1.0	0.6	--	--
<i>Midvale Dryland</i>					
Alzo	33	8.7	57.0	34	0
Bogo	22	10.5	62.0	27	0
Stephens	18	9.4	60.8	27	0
LSD _{.10}	6	0.6	1.2	2	--

no contracts available for the Treasure Valley for the coming year, nor will there be seed available for commercial plantings.

Resource Seeds is moving cautiously in the marketing of these varieties. They are well aware of the hype, unfulfilled expectations, and previous contracts written by shysters with local growers who received nothing for their delivered production in decades past.

Winter Barley

Winter barley was evaluated in the two earliest planted irrigated trials at Parma and Weiser (Table 10). Winter barley performance over the last 5 years is also shown in Table 10. Both yield and test weight in 2000 were outstanding at Parma and excellent at Weiser in the absence of lodging.

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 evaluated for the second year. It is very short with good yield potential although it didn't match the yield of the two best entries. It had the poorest test weight and the highest percentage thins of all the entries.

Kold, the first OSU release with Barley Stripe Rust resistance, has yielded as well as **Boyer** over the last five years, but yields less than **Strider** and **Sunstar Pride**. Stripe Rust was not present in 2000.

Strider, the second OSU release with Barley Stripe Rust resistance, has greater yield potential than **Kold** and **Boyer** and comparable to **Sunstar Pride**. It is taller than **Sunstar Pride**.

Sunstar Pride has excellent yield potential but is typically less plump with more thins than **Strider** in years when thins are a problem. **Sunstar Pride** does not have Stripe Rust resistance.

WPB Sprinter averaged the highest in test weight and lowest in thins. **WPB Sprinter** has good yield potential in the absence of Stripe Rust, but yields less than both **Strider** and **Sunstar Pride**.

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 and 2000 were well below normal and dryland production suffered accordingly. In addition, the 1999 dryland variety trial

Table 10. 2000 Irrigated Winter Barley Performance.

Variety	Yield bu/A	Test Weight lb/bu	Height in	Lodged %	Thins %
<i>Parma (planted Oct. 14)</i>					
Boyer	194	54.4	40	0	2.0
BZ5W96-21	173	53.8	30	0	6.4
Kold	181	56.8	37	0	1.3
Strider	208	56.1	40	0	0.4
Sunstar Pride	220	57.4	40	0	2.6
WPB Sprinter	196	57.1	40	0	0.4
LSD _{.10}	9	1.4	2	-	2.0
<i>Weiser (planted Oct. 20)</i>					
Boyer	160	51.6	41	0	0.9
BZ5W96-21	155	47.6	31	0	4.7
Kold	164	50.1	40	0	0.8
Strider	187	49.9	41	0	0.4
Sunstar Pride	192	52.9	39	0	0.7
WPB Sprinter	169	54.6	41	5	0.2
LSD _{.10}	15	1.5	2	5	2.0
<i>1996-00 (10 sites)</i>					
Boyer	136	49.2	41	26	--
Kold	135	49.3	39	26	--
Strider	151	49.7	41	31	--
Sunstar Pride	152	50.0	38	28	--
WPB Sprinter	138	51.7	40	30	--
LSD _{.10}	5	0.4	0.7	6	-

was infested with both cheat grass and rye. Yields were very poor at this site but the data are reported.

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 2000 are consistent with previous reports except there was a distinct advantage in yield with the hard winter wheats (23 vs 16 bu/A) this past season.

There are no clear yield leaders among the soft white varieties. The OSU soft whites **Stephens**, **Malcolm**, and **MacVicar** are as productive 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

Table 10. Dryland Winter Cereal Performance, Midvale, 1996-2000.

Variety	Yield					1996-00	Protein -----2000----- %	Test Weight lb/bu
	1996	1997	1998	1999	2000			
<i>Soft White Winter Wheat</i>								
<i>Commons</i>								
Brundage	55	34	61	8	13	41	9.1	58.5
Eltan	57	37	54	9	17	42	9.4	62.5
Foote	--	--	--	--	9	--	10.2	61.2
ID-B-96	--	--	--	--	16	--	9.2	61.8
ID87-52814A	--	--	--	--	16	--	9.4	63.8
Lambert	59	36	56	11	--	--	--	--
MacVicar	50	41	65	11	18	44	9.2	62.2
Madsen	56	36	64	12	14	43	9.9	61.4
Malcolm	55	38	60	8	22	44	9.3	62.8
Rod	61	32	61	10	18	43	9.2	60.0
Stephens	55	32	61	8	18	42	9.4	60.8
Weatherford	--	--	--	9	17	--	10.0	62.5
WPB 470	--	--	48	9	20	--	9.3	65.2
<i>Clubs</i>								
Hiller	53	30	51	4	15	38	9.4	58.5
Rohde	43	26	41	6	16	32	9.6	62.9
Temple	49	29	46	7	18	36	9.0	60.4
Tres	51	32	56	8	14	38	9.1	60.7
Average	53	34	56	8	16	40	9.4	61.4
LSD _{.10}	6	6	12	6	6	4	0.6	1.2
<i>Hard Winter Wheat</i>								
Bonneville	52	36	41	14	20	38	11.4	64.9
Boundary	--	--	50	24	31	--	9.4	63.3
Buchanan	56	39	53	15	36	46	8.8	63.3
Connie (DW)	--	--	--	1	10	--	12.2	64.7
Finley	--	--	51	11	20	--	10.2	66.0
Hatton	47	32	52	12	20	38	9.7	66.5
Hawk	--	36	58	17	26	--	9.4	64.2
Hoff	50	41	49	7	28	42	9.2	65.2
ID0509	--	--	--	--	33	--	9.2	64.3
ID0513	--	--	--	12	26	--	9.9	64.4
ID0550 (HW)	--	--	--	--	21	--	10.1	63.7
Ivory (HW)	--	--	--	4	21	--	9.9	63.3
Judith	47	31	51	8	--	--	--	--
Meridian	57	38	52	12	24	43	10.7	65.3
Nuwest(HW)	--	--	--	--	20	--	--	--
Promontory	59	37	58	8	33	47	8.8	66.2
Utah 100	57	37	53	8	28	44	10.0	62.8
Average	54	37	52	9	23	42	9.9	64.0
LSD _{.10}	9	7	9	5	6	4	0.6	0.5

Madsen have not proved to be better adapted for this dryland wheat fallow system than other commonly

grown soft white winters.

As with the irrigated trials, the hard red varieties are not managed differently than the soft whites. Protein for the hard red entries averaged about 0.5% higher than the soft white wheats.

Promontory (USU, '91) and **Buchanan** (WSU, '89) averaged the highest in yield among the hard red winters over the years of the evaluations. **Buchanan** was released for it's 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** has higher test weight than **Buchanan**.

Hoff, **Meridian** and **Utah 100** have done reasonably well in these trials but have not yielded as well as **Buchanan** and **Promontory**. **Bonneville**, a UI release, has resistance to snow mold and dwarf bunt, but yield has tended to lag behind the most productive varieties. **Boundary** has been tested for three years and has been as productive as the yield leaders over that time. **Finley** also has only been tested for three years and did not yield as well as the long term leaders. **Connie** in two years of testing appears to be poorly adapted to this system. It is less winter hardy and suffered more winterkill than any other entry.

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 website from the Aberdeen Research and Extension Center Home Page 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>.

Forage Shortage

You may be aware that some southern Idaho stockmen have removed livestock early from summer range due to fires or drought. Consequently the demand for aftermath or winter grazing may be higher this year than normal. Those with aftermath grazing potential, be it volunteer wheat, corn stalks, or under utilized pasture may want to list their forage resources on a new clearing house website at <http://www.ag.uidaho.edu/pasture/>. The electronic clearinghouse is provided through the Cooperative Extension Service and is designed to provide a listing of those needing forage and those who have it. Those with forage can list their offerings by contacting the local Cooperative Extension Educator, contacting Wilson Gray, the web site coordinator at 208-736-3622, or contacting him at pasturelist@uidaho.edu, or enter the information themselves on the interactive web site.

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Southwest Idaho Extension Cereals Website

Previous issues of the *Cereal Sentinel* newsletter back to 1996 can be viewed as PDF files on the Southwest Idaho Extension Cereals Homepage at <http://www.uidaho.edu/cereals/SWIdaho>. If you would like to receive electronic notice of new *Cereal Sentinel* newsletters posted to the website, rather than the hard copy through the mail, send an e-mail message to me at bradb@uidaho.edu. The advantage for us is that we don't need to produce a hard copy and put it in the mail to you. The website is still under development but the content is considerably expanded from the initial website published in June 2000. In addition to the *Cereal Sentinel* newsletters, variety descriptions and performance have been added as well as other topics. If you have suggestions for the website send them to me at bradb@uidaho.edu.

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