



# The Cereal Sentinel

*A newsletter for Treasure Valley cereal producers*

September 28, 2001

Issue No. 28



## Topics:

## Page

Winter Cereal Variety Performance	2
Irrigated Trials	2
<i>Soft White Winter Wheat</i>	2
<i>Planting Dates and SWWW Variety Performance</i>	4
<i>Mixed Variety Performance</i>	4
<i>Hard Winter Wheat</i>	5
<i>Triticale</i>	7
<i>Winter Barley</i>	7
Dryland Trials	8
Variety Performance in Other Areas	9
The <i>Cereal Sentinel</i> Internet Access	9
The Idaho Preferred Mix	10

## Important Dates:

Idaho Grain Producers Annual Meeting

Nov. 12-14, 2001

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](mailto:bradb@uidaho.edu)).** The *Cereal Sentinel* is made possible in part by a grant from the Idaho Wheat Commission.

*Brad Brown*

Brad Brown,  
Extension Crop Management Specialist

# Winter Cereal Variety Performance

## *Irrigated Trials*

The 2001 season marked the 17th 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 planted for the 2001 season. One of the trials (Mtn Home) was planted in a field later involved in the power buyout and is reported with the dryland testing later in this newsletter.

Production on the Parma station from the October 9 planting was very good but less than the excellent production of last season. Protein in the Parma plantings was below that normally associated with maximum yields (10%) and suggests that despite excellent production the wheat may have been limited somewhat by inadequate N. The Weiser planting on November 1 followed potatoes with no seedbed preparation and stands were reduced. Plant height in the Weiser trial was apparently reduced from early season drought and yields were down considerably. Protein at Weiser was relatively high for soft whites indicating that available N was likely excessive. The late planting at Parma was less productive than the earlier planting as usual.

Test weight was more normal at all locations compared to the excellent test weights recorded last season.

## *Soft White Winter Wheat*

The irrigated soft white winter wheat results for the 2001 trials are given in Tables 1.

**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 weaknesses are test weight (it's only fair) and straw strength (good but not as good as others). For wheel lines it can be too tall. Protein levels tend to be higher than desirable for many Pacific Rim customers, but it has above average milling and baking quality. It has excellent yield potential and is especially appropriate for later (November) plantings (see Table 3).

**Table 1. 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 Oct. 9)</i>					
<b>Brundage</b>	147	9.6	63.0	38	0
<b>BU6W93-477</b>	149	9.1	61.8	42	10
<b>Beamer</b>	149	9.1	61.4	42	15
<b>Hubbard</b>	139	8.8	62.3	44	0
<b>Brundage 96</b>	140	9.2	59.9	39	0
<b>ID87-52814A</b>	148	9.0	60.9	40	0
<b>ID89-17113A</b>	139	8.8	58.0	40	0
<b>KW96019</b>	148	9.1	62.8	37	0
<b>MacVicar</b>	150	8.9	59.5	41	13
<b>Malcolm</b>	156	9.0	59.5	41	3
<b>OR939526</b>	156	9.0	58.3	42	8
<b>OR941904</b>	148	9.8	62.3	40	10
<b>Stephens</b>	148	9.2	60.8	40	10
<b>Ste/470 mix</b>	145	9.8	62.9	40	8
<b>Weatherford</b>	135	10.2	60.3	41	3
<b>WPB 470</b>	160	9.6	68.8	38	0
<b>LSD<sub>.10</sub></b>	11	0.9	2.0	2	17
<i>Weiser (planted Nov. 1)</i>					
<b>Brundage</b>	80	11.9	63.0	24	0
<b>BU6W93-477</b>	91	13.4	61.6	40	0
<b>Beamer</b>	96	11.9	62.4	32	0
<b>Hubbard</b>	88	12.7	61.6	34	0
<b>ID-B-96</b>	89	12.0	59.3	28	0
<b>ID87-52814A</b>	97	12.8	60.9	30	0
<b>MacVicar</b>	76	13.0	60.1	41	0
<b>Malcolm</b>	86	12.4	58.1	31	0
<b>OR936526</b>	90	13.0	59.6	31	0
<b>Stephens</b>	94	12.1	61.8	29	0
<b>Ste/470 mix</b>	96	12.9	63.3	29	0
<b>Weatherford</b>	92	13.4	60.4	32	0
<b>WPB 470</b>	92	12.7	64.0	29	0
<b>LSD<sub>.10</sub></b>	13	0.7	2.3	2	-

**Malcolm** has performed at least as well as **Stephens** in high yield environments, particularly under mid October or earlier plantings. It loses any yield advantage over **Stephens** in later plantings. **Malcolm** does not have the milling and baking quality of **Stephens** although it is acceptable.

**MacVicar** also is comparable in yield to **Stephens**, especially with early plantings. **MacVicar** has test weight and straw strength comparable to **Stephens** and **Malcolm**.

**Brundage** is shorter than **Stephens** by as much as 7 inches depending on the conditions, a couple days earlier

**Table 1-continued..**

Variety	Yield	Protein	Test Weight	Height	Lodging
	bu/acre	%	lb/bu	in	%
<i>Parma (planted Nov. 13)</i>					
Brundage	129	8.7	63.3	34	0
BU6W93-477	118	9.6	62.5	39	0
Beamer	117	8.9	62.8	39	3
Hubbard	109	9.5	62.3	42	0
ID-B-96	113	8.8	59.8	38	0
ID87-52814A	122	9.0	62.0	39	0
ID89-17113A	117	8.7	60.5	39	0
MacVicar	124	9.7	61.8	37	0
Malcolm	122	9.6	62.8	37	0
OR936526	127	8.4	60.5	41	0
Stephens	124	9.5	61.5	36	0
Ste/470 mix	131	9.3	65.1	38	3
Weatherford	117	9.3	61.0	40	0
WPB 470	129	9.4	65.5	37	0
LSD <sub>.10</sub>	23	1.2	0.8	2	1
<i>2001 (all irrigated sites)</i>					
Brundage	119	10.1	63.1	32	0
BU6W93-477	119	10.7	62.0	37	9
Beamer	121	10.0	62.2	37	6
Hubbard	112	10.3	62.0	40	0
ID-B-96	114	10.0	59.6	35	0
ID87-52814A	122	10.0	61.3	35	23
MacVicar	117	10.5	60.5	36	4
Malcolm	122	10.3	60.1	36	1
OR936526	124	10.1	59.5	38	3
Stephens	122	10.3	61.3	35	3
Ste/470 mix	124	10.7	63.2	35	3
Weatherford	115	11.0	60.5	38	1
WPB 470	117	10.6	64.9	35	0
LSD <sub>.10</sub>	10	0.5	1.0	1	6

with better straw strength and is less susceptible to lodging. **WPB 470** is a poor milling wheat as compared to **Stephens** and is not preferred by millers.

**Weatherford** is a recent OSU release with better disease resistance than **Stephens**, is taller but has good straw strength, and comparable test weight and protein. It's yield potential is comparable to **Stephens**.

**Weatherford** is acceptable for milling and baking.

**Hubbard**, an Idaho release, tends to be less productive than **Stephens**. It is taller than **Stephens** by 5-6 inches, but has good straw strength and lodging resistance comparable to **Stephens**. Test weight is a bit better than **Stephens** across all sites. **Hubbard** is acceptable for milling and baking quality.

**OR939526**, the most recent OSU release, looks very promising in early plantings where it averaged 7 bu/A higher than **Stephens** across three site years (Table 3). It is slightly taller than **Stephens** with comparable protein.

Performance in any given trial is not as reliable as the combined performance over several sites and years. The yield results for several periods of testing are shown in Table 3.

**Malcolm, Stephens, and MacVicar** in extensive testing are very comparable in yield. **Brundage** and **Hubbard** have yielded lower than **Stephens** in the testing thus far. **WPB 470** has had difficulty consistently keeping pace with **Stephens**. Of the newer releases, **OR939526, WPB Beamer, and Weatherford** have all yielded comparable to **Stephens** over two years of testing.

heading, and it's test weight is invariably higher than **Stephens, Malcolm, or MacVicar**. **Brundage** protein is typically lower than **Stephens** and the milling and baking quality is excellent. **Brundage** has excellent straw strength and lodges less than **Stephens** where significant lodging occurs. It has yielded less than **Stephens** across several years of testing in the Treasure Valley, especially when moisture stress conditions during vegetative growth reduce plant height.

**WPB 470**, a Western Plant Breeders release, has excellent yield potential, yielding practically as well as **Stephens**. **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 2. Irrigated Soft White Winter Wheat Yield Performance, 1985-01.**

Variety	1985-01	1996-01	1998-01	2000-01
	-----bu/A-----			
Malcolm	130	134	138	142
MacVicar	--	133	137	139
Stephens	128	135	138	140
Brundage--	--	127	129	132
WPB 470--	--	--	134	134
Hubbard	--	--	--	134
Brundage96	--	--	--	132
OR939526	--	--	--	143
WPB Beamer	--	--	--	139
Weatherford	--	--	--	139
ID87-52814A	--	--	--	141
LSD <sub>.10</sub>	1.8	2.8	3.8	5.6

**Table 3. SWWW Variety Performance as Affected by Planting Dates. 1996-01**

Entries	October Planted	November Planted
	-----bu/A-----	
	<b>1996-01</b>	
	(11 sites)	(10 sites)
Brundage	139	126
Malcolm	145	134
MacVicar	146	133
Stephens	<u>144</u>	<u>137</u>
LSD <sub>.10</sub>	3.8	4.8
	<b>1998-01</b>	
	(7 sites)	(6 sites)
Brundage	137	127
Stephens	146	136
WPB 470	143	131
Ste/470 mix	--	142
Hubbard	142	130
BU6W93-477	<u>146</u>	<u>134</u>
LSD <sub>.10</sub>	4.5	7.0
	<b>1999-01</b>	
	(5 sites)	(5 sites)
Brundage	145	129
Stephens	153	139
WPB 470	148	131
Ste/470 mix	152	143
Hubbard	147	131
BU6W93-477	<u>153</u>	<u>138</u>
LSD <sub>.10</sub>	6	8
	<b>2000-01</b>	
	(3 sites)	(3 sites)
Stephens	156	139
WPB 470	150	132
Ste/470 mix	154	143
ID87-52814	162	134
OR939526	163	140
Weatherford	155	138
WPB Beamer	162	131
BU6W93-477	157	135
Brundage 96	<u>143</u>	<u>129</u>
LSD <sub>.10</sub>	9	10

**Planting Dates and SWWW Variety Performance**

Variety performance can be affected by planting dates. Variety performance has been measured using both October and November planting dates to document planting date effects on variety performance (Table 3).

All varieties are less productive if planted in November rather than October. But most varieties appear to be more susceptible to later planting conditions relative

to **Stephens**. Notable exceptions include **OR939526**, **Weatherford**, and especially the **Ste/470 mix**. The continuing popularity of **Stephens** is due in part to its excellent longterm performance in later plantings necessitated by late harvested previous crops of potatoes, corn, or sugarbeets.

**Mixed Variety Performance**

Few varieties have the characteristics necessary to maximize yield year in and year out, even in locations where they are best adapted. 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 in all years.

Variety mixtures are sometimes considered to stabilize yield or reduce the risks associated with planting single varieties. Mixed plantings of varieties are common in the PNW, especially in dryland production systems where winterkill, diseases, or insects can be serious risks. Over 250,000 acres of mixed plantings were reported in Washington during the 2000 season using 14 different combinations of varieties.

What about mixtures in irrigated wheat systems? Two minor weaknesses of **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** can lodge and better lodging

**Table 4. Variety Mixture Performance, 1998-01.**

Entry	Yield bu/A	Test Weight lb/bu	Lodging %
	<b>2001 (3 sites)</b>		
Stephens	122	61.3	3
WPB 470	117	64.9	0
Stephens/WPB 470	<u>124</u>	<u>63.2</u>	<u>3</u>
LSD <sub>.10</sub>	10	1.1	6
	<b>1998-01 (14 sites)</b>		
Stephens	138	61.1	6
WPB 470	134	64.7	1
Stephens/WPB 470	<u>141</u>	<u>62.9</u>	<u>2</u>
LSD <sub>.10</sub>	3.6	0.4	4

<sup>1</sup>50% of each variety by weight

resistance is desirable.

A successful mixture would sacrifice no yield while improving both test weight and lodging resistance. We mixed **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 in 14 trials over four seasons (1998–2001). The performance for each 2001 site is found in Table 1 while the average performance across all sites in 2001 or all years is shown in Table 4.

**WPB 470** test weight was consistently the highest, **Stephens** the poorest, and the mixture intermediate. Lodging was not appreciable enough in most years for a valid comparison but **Stephens** lodged more than either **WPB 470** or the mixture in 1999.

Over this four year period, the **Stephens** and **WPB 470** mixture yielded 7 bu/A better than **WPB 470** and 3 bu/A better than **Stephens**. The mixture in every year yielded at least as well as the highest yielding variety planted alone. Why yield did not average intermediate between the two varieties, as did test weight, is not clear.

The yield performance of the mixture was influenced by planting date. There was little yield advantage with the mixture in the early plantings but it was 6 and 11 bu/A more productive in the later plantings than **Stephens** and **WPB 470** (Table 3).

The results show that this mixture is more stable in yield from year to year than either variety planted alone, especially in later plantings. The results also demonstrate the potential for this mixture to improve grain grade and lodging resistance.

Unfortunately we now know that **WPB 470** has relatively poor milling quality and may not be the most appropriate choice for wheat destined for milling. If sold for animal feed the milling quality is a non-issue.

Would other mixtures be as successful? The variety that comes the closest to **WPB 470** in test weight and lodging resistance is **Brundage**. **Brundage** also has excellent milling and baking quality and therefore a mixture containing **Brundage** would be very acceptable for milling. However, **Brundage** yields less than **WPB 470**. A **Stephens/Brundage** mixture will be evaluated in the coming season.

### ***Hard Winter Wheat***

Hard red, hard white and winter durum wheats were also evaluated in the Cooperative Extension Variety Performance Trials. Irrigated hard winter wheats are generally less productive than the soft white winter varieties but market prices can be higher for the hard red

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

Results for 2001 testing are shown in Table 6. Hard 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 all entries tested and has excellent lodging resistance. **Garland** tends to yield less than **Hawk** or **Hoff**. 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. It has good yield potential.

**Meridian**, a UI release tends to lodge more than **Garland** or **Hoff** but less than **Hawk**. 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 is more competitive in later plantings. Its test weight and protein tends to be lower than **Hawk** and **Hoff**.

**Connie** is an OSU winter durum release developed cooperatively with Pendleton Flour Mills. **Connie** lacks winterhardiness for most areas. **Connie** is less productive than most irrigated hard winter wheats.

**Ivory**, an 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 1999-2001. It has excellent yield potential and is the shortest of the highest yielding entries with good straw strength.

**Table 6. Irrigated Hard Winter Wheat Performance in the Treasure Valley.**

Variety	Yield bu/acre	Protein %	Test Weight lb/bu	Height in	Lodging %
<i>Parma (planted Oct. 9)</i>					
<b>Hard Reds</b>					
Columbia-1	137	7.7	64.0	38	0
Garland	128	8.3	60.6	29	0
Hawk	151	7.7	65.5	46	50
Hoff	146	7.4	64.4	43	0
ID0517	138	8.1	61.8	39	0
Meridian	123	7.8	63.8	42	10
OR850513-8	140	7.3	62.0	39	0
OR941044	140	7.2	61.9	41	0
Pillar	130	8.4	62.9	42	0
Sunstar Declo	134	7.9	62.6	38	8
<b>Hard Whites</b>					
ID377s (HWS)	137	7.1	65.0	43	28
Ivory	141	7.3	62.9	42	0
NuFrontier	132	7.4	64.4	46	15
NuHorizon	152	7.7	64.8	39	0
<b>Durums</b>					
Connie	142	7.3	66.1	38	3
LSD <sub>.10</sub>	11	0.8	1.4	1	13
<i>Weiser (planted Nov. 1)</i>					
<b>Hard Reds</b>					
Garland	73	13.7	59.6	20	0
Hawk	78	12.8	64.6	31	0
Hoff	88	12.9	62.4	30	0
ID0517	69	13.9	60.5	26	0
Meridian	76	13.6	61.6	28	0
Pillar	64	14.5	61.5	29	0
Sunstar Declo	81	14.0	62.0	27	0
<b>Hard Whites</b>					
NuFrontier	71	12.3	63.6	31	0
NuHorizon	83	13.3	64.6	28	0
Ivory	73	13.8	62.1	31	0
<b>Durums</b>					
Connie	59	14.4	63.9	28	0
LSD <sub>.10</sub>	9	0.8	1.4	2	-

**ID0517**, an Idaho advanced line, is short with excellent lodging resistance and possibly higher protein. **ID0517** yielded less than **Declo**, **Hawk** and **Hoff** over the last three years of testing. Test weight is comparable to other hard red winters.

**Pillar** is a Western Plant Breeders release. It is less productive than the leading hard red entries. It is shorter than **Meridian**, **Hoff**, and **Hawk** and but taller than

**Table 6. continued.**

Variety	Yield bu/acre	Protein %	Test Weight lb/bu	Height in	Lodging %
<i>Parma (planted Nov. 13)</i>					
<b>Hard Reds</b>					
Boundary	124	9.0	63.3	37	0
Columbia-1	103	9.8	63.0	34	0
Garland	114	9.8	61.5	27	0
Hawk	126	10.0	65.3	39	0
Hoff	125	9.3	63.5	38	0
ID0517	113	9.8	62.5	33	0
Meridian	125	10.6	63.5	39	5
Pillar	103	9.8	62.0	35	3
Vandal(HRS)	108	11.9	63.3	35	0
WPB 936(HRS)	105	11.8	64.3	35	0
<b>Hard Whites</b>					
NuFrontier	114	8.3	64.8	39	0
NuHorizon	122	9.4	65.5	34	0
ID377s (HWS)	120	10.3	64.8	40	5
Ivory	118	9.6	63.3	37	0
<b>Durums</b>					
Connie	89	9.4	64.5	32	0
LSD <sub>.10</sub>	15	0.8	0.9	2	4
<i>1993-01</i>					
<b>Hard Reds</b>					
Garland	129	12.1	61.6	28	0
Hawk	132	11.6	64.6	39	12
Hoff	132	11.6	64.0	38	1
Meridian	<u>128</u>	<u>11.6</u>	<u>63.4</u>	<u>37</u>	<u>8</u>
LSD <sub>.10</sub>	4	0.7	0.4	1	4
<i>1999-01</i>					
Declo	137	11.0	63.7	35	2
Garland	123	11.3	62.2	28	0
Hawk	138	10.5	65.1	41	15
Hoff	139	10.4	64.6	39	1
ID0517	131	11.0	63.2	35	0
Meridian	133	10.6	63.7	38	5
LSD <sub>.10</sub>	5	0.3	0.5	1	6
<i>2000-01</i>					
<b>Hard Whites</b>					
Ivory	122	10.5	63.7	38	0
NuFrontier	112	10.0	65.0	39	3
NuHorizon	128	10.5	65.5	35	0
LSD <sub>.10</sub>	5	0.5	0.5	1	6

**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 7. Triticale vs Stephens Winter Wheat Performance in the Treasure Valley.**

Variety	Yield	Protein	Test Weight	Height	Lodged
	bu/acre	%	lb/bu	in	%
<b>Irrigated</b>					
<i>SW Idaho 2000-01 (7 sites)</i>					
<b>Alzo</b>	<b>155</b>	<b>9.7</b>	<b>58.3</b>	<b>46</b>	<b>0</b>
<b>Bogo</b>	<b>142</b>	<b>10.3</b>	<b>56.3</b>	<b>45</b>	<b>1</b>
<b>Stephens</b>	<u><b>140</b></u>	<u><b>10.4</b></u>	<u><b>62.6</b></u>	<u><b>37</b></u>	<u><b>3</b></u>
LSD <sub>.10</sub>	6	0.3	0.6	1	5
<i>Ontario (1999-01)</i>					
<b>Bogo</b>	<b>143</b>	<b>9.8</b>	<b>57.3</b>	--	--
<b>Stephens</b>	<b>139</b>	<b>10.4</b>	<b>60.0</b>	--	--
<b>Dryland</b>					
<i>SW Idaho 2000-01 (3 sites)</i>					
<b>Alzo</b>	<b>38</b>	<b>7.5</b>	<b>55.5</b>	<b>31</b>	<b>0</b>
<b>Bogo</b>	<b>33</b>	<b>7.1</b>	<b>57.0</b>	<b>27</b>	<b>0</b>
<b>Stephens</b>	<u><b>28</b></u>	<u><b>8.1</b></u>	<u><b>59.6</b></u>	<u><b>24</b></u>	<u><b>0</b></u>
LSD <sub>.10</sub>	4	0.6	1.0	1	--

**Triticale**

Triticale, a cross of wheat and rye, has been evaluated periodically for grain yield in the Cooperative Extension trials. We have evaluated two Polish varieties for two seasons because of their outstanding performance in OSU trials in western OR.

Local performance of these triticale varieties in relation to **Stephens** winter wheat is shown in Table 7. **Alzo** exceeded by far the yield of **Stephens** under both irrigated and dryland conditions when averaged over all sites. **Bogo** yielded as well as **Stephens** across all irrigated trials but better than **Stephens** under dryland conditions.

The triticales, handled by Resource Seeds, Inc., are considerably taller than Stephens but have good straw strength. The results from two years of testing suggests that **Alzo** in particular has potential for substantially higher production of grain than commonly grown wheat.

**Winter Barley**

Winter barley was evaluated in the two earliest planted irrigated trials at Parma and Weiser (Table 8). Winter barley performance over several site years is also shown in Table 8.

**Strider**, an OSU release with Barley Stripe Rust resistance, has greater yield potential than **Kold**, **Boyer**, and **WPB Sprinter** 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**.

**Table 8. 2001 Irrigated Winter Barley Performance.**

Variety	Yield	Test Weight	Height	Lodged	Thins
	bu/A	lb/bu	in	%	%
<i>Parma (planted Oct. 9)</i>					
<b>WPB Sprinter</b>	<b>129</b>	<b>55.5</b>	<b>43</b>	<b>0</b>	<b>0.6</b>
<b>Stab 7</b>	<b>89</b>	<b>55.3</b>	<b>43</b>	<b>80</b>	<b>2.7</b>
<b>Stab 47</b>	<b>102</b>	<b>55.3</b>	<b>47</b>	<b>88</b>	<b>0.9</b>
<b>Strider</b>	<b>152</b>	<b>53.0</b>	<b>44</b>	<b>0</b>	<b>0.5</b>
<b>Sunstar Pride</b>	<b>159</b>	<b>55.5</b>	<b>41</b>	<b>0</b>	<b>2.1</b>
LSD <sub>.10</sub>	18	1.0	2	9	1.2
<i>Weiser (planted Nov. 1)</i>					
<b>WPB Sprinter</b>	<b>94</b>	<b>52.1</b>	<b>27</b>	<b>0</b>	<b>1.1</b>
<b>Stab 7</b>	<b>72</b>	<b>47.0</b>	<b>32</b>	<b>0</b>	<b>1.4</b>
<b>Stab 47</b>	<b>64</b>	<b>54.4</b>	<b>34</b>	<b>0</b>	<b>0.9</b>
<b>Strider</b>	<b>86</b>	<b>51.3</b>	<b>29</b>	<b>0</b>	<b>1.1</b>
<b>Sunstar Pride</b>	<b>94</b>	<b>49.6</b>	<b>23</b>	<b>0</b>	<b>5.7</b>
LSD <sub>.10</sub>	9	1.6	2	-	1.3
<i>1996-00 (10 sites)</i>					
<b>Boyer</b>	<b>136</b>	<b>49.2</b>	<b>41</b>	<b>26</b>	<b>--</b>
<b>Kold</b>	<b>135</b>	<b>49.3</b>	<b>39</b>	<b>26</b>	<b>--</b>
<b>Strider</b>	<b>151</b>	<b>49.7</b>	<b>41</b>	<b>31</b>	<b>--</b>
<b>Sunstar Pride</b>	<b>152</b>	<b>50.0</b>	<b>38</b>	<b>28</b>	<b>--</b>
<b>WPB Sprinter</b>	<b>138</b>	<b>51.7</b>	<b>40</b>	<b>30</b>	<b>--</b>
LSD <sub>.10</sub>	5	0.4	0.7	6	-
<i>1996-01 (12 sites)</i>					
<b>Strider</b>	<b>145</b>	<b>50.1</b>	<b>40</b>	<b>25</b>	<b>--</b>
<b>Sunstar Pride</b>	<b>147</b>	<b>50.4</b>	<b>37</b>	<b>23</b>	<b>--</b>
<b>WPB Sprinter</b>	<b>133</b>	<b>52.1</b>	<b>39</b>	<b>25</b>	<b>--</b>
LSD <sub>.10</sub>	4	0.4			-

### 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.

**Eltan** and **Madsen** have not proved to be better adapted for this dryland wheat fallow system than other commonly grown soft white winters. **Malcolm** averaged the highest in yield among the soft whites over the 1996 to 2001 period, about 5 bu/A higher than **Stephens**.

Results from previous dryland trials indicated that hard red winter wheat was at least as productive as the soft white winter wheat commonly grown and frequently even more productive. In addition, the hard red winter class averaged about three pounds per bushel higher test weight. Results from this past season are consistent with previous reports. There was a yield advantage with the hard red winter wheats (49 vs 40 bu/A) this past season.

As with the irrigated trials, the hard red varieties are not managed differently than the soft whites. Protein for both the hard red and soft white entries was low and suggests that available N was inadequate for maximum production.

**Promontory** (USU, '91) and **Buchanan** (WSU, '89) averaged the highest in yield among the hard red winters over the years of the evaluations (1996-01). **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** and **Buchanan** averaged 3-4 bu/A more than **Malcolm**, the most productive soft white over the 1996-2001 period and 8-9 bu/A higher than **Stephens**.

**Hoff**, **Meridian** and **Utah 100** are reasonably productive, at least as productive as the better soft whites but have not yielded as well as **Buchanan** and **Promontory**. **Boundary** and **Finley** have been tested for four years and while they have been as productive as the better soft whites, they have not been consistently as productive as the hard red yield leaders.

Hard red winters have proved more productive than soft whites over the last six years of testing in the wheat fallow system. Hard reds should be considered for this production system when prices are favorable

A variety trial was planted near Mtn Home that was not irrigated due to the power buyout. It was to be an

**Table 9. Dryland Winter Wheat Performance in southwestern Idaho.**

Variety	Yield		Protein	Test Weight	Height
	2001	1996-01			
<b>Midvale</b>					
<i>Soft Whites</i>					
<b>Brundage</b>	39	41	8.4	60.5	25
<b>Brundage 96</b>	48	--	8.9	57.6	26
<b>Eltan</b>	41	42	8.8	58.4	30
<b>Foote</b>	36	--	9.0	58.8	28
<b>Hiller (club)</b>	41	38	8.2	56.6	25
<b>ID87-52814A</b>	37	--	7.9	59.5	27
<b>MacVicar</b>	42	44	8.7	59.8	29
<b>Madsen</b>	32	41	8.9	58.3	27
<b>Malcolm</b>	51	46	8.6	59.8	30
<b>Stephens</b>	40	41	8.7	57.9	28
<b>Temple (club)</b>	33	35	8.3	56.4	23
<b>Weatherford</b>	38	--	9.1	59.1	30
<b>WPB 470</b>	40	--	9.5	63.4	27
<b>Average</b>	40	41	8.7	58.8	27
<b>LSD<sub>.10</sub></b>	9	4	0.7	2.2	2
<i>Hard Red and Whites</i>					
<b>Boundary</b>	45	--	9.2	60.1	29
<b>Buchanan</b>	61	49	8.5	61.1	35
<b>Finley</b>	37	--	8.2	64.4	36
<b>Hawk</b>	58	--	8.4	64.0	30
<b>Hoff</b>	46	43	8.7	62.3	29
<b>ID0513</b>	41	--	9.8	63.1	28
<b>ID0550 (HW)</b>	52	--	8.1	62.8	34
<b>Ivory (HW)</b>	36	--	9.1	60.9	28
<b>Meridian</b>	53	45	8.8	63.8	29
<b>Promontory</b>	59	50	8.8	65.4	34
<b>Utah 100</b>	57	47	8.8	62.0	35
<b>NuFrontier</b>	44	--	9.1	64.1	27
<b>NuHorizon</b>	54	--	8.5	64.9	27
<b>Average</b>	49	47	8.8	61.8	31
<b>LSD<sub>.10</sub></b>	13	4	0.8	0.9	4

irrigated site and was planted on 7" rather than 14" row spacings using a seeding rate roughly 40 lb/A higher (about 67% more) than we normally plant dryland trials. It also did not include many dryland entries. The results are presented in the continuation of Table 9.

**Table 9. Continued.**

Variety	Yield 2001 bu/A	Protein %	Test Weight lb/bu	Height in
<b>Mtn Home</b>				
<i>Soft Whites</i>				
Beamer	22	8.0	61.0	17
Brundage	28	7.0	59.1	18
Brundage 96	24	7.7	58.4	17
BU6W93-477	27	7.5	60.4	19
Hubbard	21	7.8	61.1	21
ID87-52814A	30	7.1	60.6	19
ID89-17113A	29	6.6	59.8	20
MacVicar	24	7.1	60.8	19
Malcolm	26	7.4	60.4	19
OR939526	29	6.8	59.3	18
Stephens	26	7.5	60.0	18
Ste/470	26	8.2	60.8	17
Weatherford	26	7.6	60.5	20
WPB 470	<u>23</u>	<u>7.2</u>	<u>63.3</u>	<u>18</u>
Average	26	7.4	60.3	19
LSD <sub>.10</sub>	5	1.0	1.6	2
<i>Hard Reds</i>				
Boundary	22	7.2	60.3	17
Declo	28	7.7		
Garland	26	7.6	61.3	16
Hawk	28	6.8	63.0	20
Hoff	26	7.5	62.8	20
ID0517	26	7.4	62.4	18
King (HRS)	22	8.4		
Meridian	24	7.7	63.0	19
Nora	24	9.0	62.0	21
Norpro (HRS)	21	7.9	61.4	17
Pillar	21	8.4	61.4	17
Vandal (HRS)	24	8.6	62.8	18
W91-233	25	8.0	62.5	21
WB 936 (HRS)	18	9.2	63.5	19
<i>Hard Whites</i>				
ID377s (HWS)	25	8.5	64.3	22
Ivory	19	8.2	61.5	20
Klasic (HWS)	24	7.7	63.8	18
NuFrontier	26	7.0	61.4	18
NuHorizon	22	7.7	64.3	18
OR948027	23	7.6	62.3	20
OR948927	22	7.9	60.0	22
OR971897	20	8.9	61.6	21
<i>Durums</i>				
Connie	14	9.7	62.5	19
Kronos (SD)	<u>17</u>	<u>8.7</u>	<u>61.0</u>	<u>18</u>
Average	23	8.0	61.9	20
LSD <sub>.10</sub>	4	0.9	1.4	2

## 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>.

## The Cereal Sentinel Internet Access

We at University of Idaho Cooperative Extension are pleased to provide this information to you and trust you will find it useful for your enterprise. Producing hard copies of the newsletter is costly but you can help. The *Cereal Sentinel*, including issues 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 could access the newsletter from the website, we would let you know electronically when new issues are available. The advantage for us is that we avoid the costs associated with printing, folding, sealing, labeling, sorting, and mailing a hard copy to you.

Many are currently receiving the newsletter online and we thank you for helping us reduce our production costs. But the number is still a small fraction of the total. If you have internet access and are agreeable to accessing the newsletter from the website, send an e-mail message to me at [bradb@uidaho.edu](mailto:bradb@uidaho.edu).

In addition to the *Cereal Sentinel* newsletter, you may want to check out other relevant information pertaining to variety descriptions and performance on the website. If you have suggestions for the website send them along.

## The Idaho Preferred Mix

You may have seen the Idaho Wheat Commission's list of preferred varieties for milling and baking. You no doubt are aware then that both

**Stephens** and **Brundage** are listed as Quality Plus (Q+), or the most preferred of the varieties currently grown. **Malcolm** is listed as acceptable (AQ) but **WPB 470** is not listed. Some newer releases may not have been fully evaluated for listing. Flour yield is fairly obvious, the miller wants to extract as much flour as possible so the higher the number the better. Both **Malcolm** and **WPB 470** have lower flour yield and make a smaller cookie. Break flour is an indication of the softness of the flour and higher numbers reflect better soft wheat quality. Note that **Brundage, Hubbard**, and the Idaho advanced line have significantly better break flour than other varieties. This in part may be why a small premium has been offered for **Brundage**.

### Acknowledgement

The Idaho Wheat Commission has awarded a grant of \$3000 to subsidize this newsletter. We are pleased to acknowledge their support for this Cooperative Extension educational project.

**Table 10. Milling and Bake Quality of Treasure Valley Soft White Winter Wheat. 1998-2000.**

Varieties	Flour Protein %	Flour Yield &	Break Flour %	Cookie Diameter cm
<b>1998-00</b>				
<b>Brundage</b>	<b>8.2</b>	<b>67.0</b>	<b>44.8</b>	<b>8.76</b>
<b>Hubbard</b>	<b>8.2</b>	<b>67.5</b>	<b>45.2</b>	<b>8.94</b>
<b>Malcolm</b>	<b>7.8</b>	<b>66.8</b>	<b>41.2</b>	<b>8.56</b>
<b>MacVicar</b>	<b>7.8</b>	<b>67.0</b>	<b>42.3</b>	<b>8.75</b>
<b>Stephens</b>	<b>8.3</b>	<b>67.8</b>	<b>40.9</b>	<b>8.79</b>
<b>WPB 470</b>	<b>8.8</b>	<b>65.9</b>	<b>41.1</b>	<b>8.48</b>
<b>WPB 477</b>	<b>8.4</b>	<b>68.7</b>	<b>41.9</b>	<b>8.78</b>
<b>LSD<sub>.10</sub></b>	<b>0.2</b>	<b>0.4</b>	<b>0.8</b>	<b>0.10</b>
<b>2000</b>				
<b>Beamer</b>	<b>8.8</b>	<b>69.0</b>	<b>46.6</b>	<b>8.80</b>
<b>Brundage</b>	<b>8.6</b>	<b>66.0</b>	<b>49.6</b>	<b>8.75</b>
<b>Brundage 96</b>	<b>8.4</b>	<b>64.4</b>	<b>50.5</b>	<b>8.85</b>
<b>ID87 52814A</b>	<b>8.2</b>	<b>65.5</b>	<b>54.6</b>	<b>9.04</b>
<b>OR939526</b>	<b>8.5</b>	<b>66.8</b>	<b>43.7</b>	<b>8.56</b>
<b>Stephens</b>	<b>8.8</b>	<b>66.5</b>	<b>44.9</b>	<b>8.76</b>
<b>Ste/470 mix</b>	<b>9.1</b>	<b>65.4</b>	<b>45.4</b>	<b>8.63</b>
<b>Weatherford</b>	<b>9.0</b>	<b>66.8</b>	<b>44.4</b>	<b>8.64</b>
<b>WPB470</b>	<b>9.5</b>	<b>65.1</b>	<b>45.4</b>	<b>8.38</b>
<b>LSD<sub>.10</sub></b>	<b>0.3</b>	<b>0.7</b>	<b>1.2</b>	<b>0.15</b>

**COOPERATIVE EXTENSION SYSTEM  
US DEPARTMENT OF AGRICULTURE  
UNIVERSITY OF IDAHO  
MOSCOW ID 83844-2338**

Return Address:

Parma Research & Extension Center  
29603 U of I Lane  
Parma ID 83660

PRSRT STD  
US Postage  
PAID  
Parma ID 83660  
Permit No. G-268

AN EQUAL OPPORTUNITY EMPLOYER

Address Correction Requested  
Please Forward