



The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

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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)**

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Spring Cereal Variety Performance

The 2003 season marked the 17th season of the Southwest Idaho Cooperative Extension Variety Performance Trials for spring cereals. The trials, supported by the **Idaho Wheat Commission, Idaho Barley Commission**, private breeders and the College of Agriculture and Life Sciences, allow the testing of public and proprietary varieties and advanced lines under the irrigated conditions of the Treasure Valley.

Three irrigated spring trials were conducted during the 2003 season. Trials were located at the Parma Research and Extension Center, Kuna, and Weiser. The Parma trial was planted March 14, Kuna March 13, and Weiser on March 11. Lodging was highest at Weiser due to high winds

There was no incidence of barley stripe rust in the Treasure Valley during 2003 that we are aware of but there was stripe rust in susceptible wheat. Spring variety performance should be interpreted in that light. As with any variety comparison, the more years and sites varieties can be compared over the more reliable the information.

Soft White Spring Wheat

The 2003 results for soft white spring wheat varieties are shown in Tables 1-2. The best indication of long term variety performance is a comparison involving several sites and years.

There are several relatively new soft white spring releases for growers to consider that offer not only increased yield but significant improvements in milling or baking quality over the most commonly grown **Penawawa**. They include **Alturas** and **Jubilee**, UI Aberdeen releases, both comparable in quality to **Treasure**, the long term quality standard.

Jubilee (ID0525) and **Alturas** (ID0526) are high yielding, low protein, high quality Idaho releases that have performed very well since their introduction. **Jubilee** is slightly taller, but **Alturas** is more similar to **Penawawa** in height. They have good test weight relative to **Penawawa** and comparable straw strength. Certified seed of **Jubilee** and registered seed of **Alturas** (possibly certified) should be available for spring 2004.

Table 1. 2003 Soft White Spring Wheat Performance in the Treasure Valley.

Variety	Yield bu/acre	Protein %	Test Weight lb/bu	Height in	Lodging %
<i>Parma</i>					
Alpowa	80	12.3	66.5	37	0
Alturas	112	10.9	66.0	37	0
Eden (7902)	86	11.2	65.5	36	0
IDO598	96	11.3	64.1	35	0
IDO599	116	10.7	66.0	37	0
Jubilee	101	11.1	65.5	37	0
Penawawa	101	11.5	66.0	36	0
WA7921	89	11.1	65.0	39	0
Whitebird	93	11.3	66.1	37	0
Average	97	11.3	65.6	37	0
LSD _{.10}	9	0.8	0.8	1	--
<i>Weiser</i>					
Alpowa	99	11.5	66.0	35	3
Alturas	104	10.9	64.4	34	0
Eden (7902)	90	10.8	62.9	34	10
IDO598	101	10.5	63.0	33	3
IDO599	124	10.3	64.3	36	3
Jubilee	100	11.2	65.6	35	3
Penawawa	101	11.6	66.1	33	8
WA7921	82	11.4	61.4	38	70
Whitebird	106	11.4	66.6	35	0
Average	101	11.1	64.5	35	11
LSD _{.10}	9	0.3	1.6	2	20
<i>Kuna</i>					
Alpowa	110	11.2	64.3	38	3
Alturas	110	11.3	62.4	35	13
Eden	107	10.7	63.0	36	32
IDO598	119	10.8	60.6	35	23
IDO599	120	10.2	62.9	36	5
Jubilee	114	11.0	63.5	38	28
Penawawa	110	11.2	62.9	36	20
WA7921	83	11.1	60.3	37	93
Whitebird	113	10.9	62.4	39	18
Average	109	10.9	62.5	37	26
LSD _{.10}	9	0.5	1.3	1	25

¹ Means must differ by more than the LSD to be statistically different

Alpowa is slightly taller than others, but has good lodging resistance and excellent test weight. **Alpowa** baking quality is better than **Penawawa** but not as good as **Alturas** or **Jubilee**.

The most commonly grown spring wheat is **Penawawa**, an early maturing, older release that yields well but tends to be higher in protein, lower in test weight with very poor milling and baking quality. **Penawawa** is considered less than acceptable on PNW

Table 2. Soft White Spring Wheat Performance in the Treasure Valley over several sites or years

Variety	Yield bu/acre	Protein %	Test Weight lb/bu	Height in	Lodged %
2003 (3 sites)					
Alpowa	97	11.7	65.6	37	2
Alturas	109	11.0	64.3	36	4
Eden	94	10.9	63.8	35	14
IDO598	105	10.9	62.6	34	8
IDO599	120	10.4	64.4	36	3
Jubilee	105	11.1	64.9	37	10
Penawawa	104	11.4	65.0	35	9
WA7921	85	11.2	62.2	38	54
Whitebird	104	11.2	65.0	37	6
Average	103	11.1	64.2	36	12
LSD _{.10} ¹	8	0.4	1.3	1	15
2001-3 (9 sites)					
Alpowa	105	11.4	64.3	38	10
Alturas	112	10.7	63.4	35	11
Eden	102	10.6	63.6	35	14
Jubilee	110	10.9	64.0	37	13
Penawawa	108	11.3	63.8	35	14
Whitebird	106	11.0	64.0	38	10
Average	107	11.0	63.9	36	12
LSD _{.10} ¹	7	0.8	0.7	1	10
1999-03 (15 site years)					
Alpowa	102	11.1	64.1	37	6
Alturas	114	10.7	63.4	35	7
Jubilee	112	10.9	64.0	37	8
Penawawa	107	11.0	63.6	35	8
Whitebird	106	10.7	63.9	37	6
Average	108	10.9	63.7	36	7
LSD _{.10} ¹	8	0.7	0.6	1	8
1993-02 (27 site years)					
Alpowa	110	10.7	63.0	37	6
Centennial	109	10.7	62.5	36	5
Penawawa	110	11.1	61.9	36	7
Pomerelle	106	10.3	61.2	36	6
Treasure	106	10.5	61.0	36	9
Whitebird	108	10.6	62.6	38	5
Average	108	10.6	62.0	36	6
LSD _{.10} ¹	5	0.4	0.1	1	7

¹ Means must differ by more than the LSD to be statistically different

Whitebird has good yield potential but has not yielded as well as **Penawawa** and **Alpowa**. **Whitebird** does have low protein and excellent baking quality.

IDO599 is an Idaho advanced line that performed very well in 2003, averaging 11 bu/A higher than **Alturas**, the next highest yielding entry. **IDO599** is comparable in protein, height, test weight, and lodging resistance to **Alturas**.

Eden (WA7902) is a spring club from Washington and yielded less than most common wheat entries. **WA7921** yielded significantly less than all other entries and was weak strawed.

Hard Red Spring Wheat

Hard red spring varieties are evaluated because of their historically higher prices and potential for greater returns to spring wheat producers. Results for hard red spring wheat are given in Tables 3 and 4.

WPB 936, a Western Plant Breeders release, is the most commonly planted hard red spring in western Idaho. It has excellent yield potential but not better than **Jefferson** and less than **Jerome**.

Jefferson, a relatively new release from the UI breeding program at Aberdeen, has yielded as well as **WPB936** over several years of testing. **Jefferson** is taller than **WPB936** and more susceptible to lodging. It has protein comparable to **WPB936**. **Jefferson** has moderate Hessian fly resistance, excellent milling yield and good baking quality.

Jerome (IDO566) is a new Idaho release that is the most productive entry over two years of testing. It yielded higher than **Jefferson**, the previous Idaho release, and higher than **WPB 936** the most commonly grown HRS wheat in southern Idaho. **Jerome** has excellent test weight, better than **WPB 936**, and is slightly taller than **WPB 936**. Since **Jerome** is more productive than other varieties it has lower protein and will require additional available N to meet the N requirements for both yield and acceptable protein. **Jerome** has excellent milling yield, mixing tolerance and very good baking quality.

Hollis (WA7859) is a relatively new WSU release that is taller than most and has not yielded as well as **WPB 936**, **Jefferson**, or **Jerome** in southwest Idaho. **Scarlet** (WA7839) is another WSU releases that has not yielded as well as the more productive hard reds such as **Jefferson**, **WPB 936**, or **Jerome**.

Saxon is a General Mills variety with good protein and test weight but only fair yield potential.

Wheat Commission lists of preferred soft white spring varieties for export. It is an acceptable feed wheat.

Table 3. Hard Red Spring Wheat Performance in the Treasure Valley. 2003.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>Parma</i>					
Hollis	91	13.8	66.1	45	0
IDO592	105	12.7	65.6	37	0
IDO593	96	13.3	65.3	32	0
Jefferson	97	13.4	65.6	36	0
Jerome	99	13.1	65.1	36	0
Saxon	89	14.2	64.9	38	0
Scarlet	91	13.8	65.5	41	0
WA7925	92	14.1	67.3	43	0
WPB936	87	15.4	63.8	34	0
Average	94	13.8	65.5	38	0
LSD _{.10}	11	0.8	1.0	1	--
<i>Weiser</i>					
Hollis	96	14.5	64.4	43	5
IDO592	121	13.8	64.8	34	3
IDO593	116	13.5	64.4	31	0
Jefferson	114	13.9	65.0	37	3
Jerome	127	13.6	65.6	35	3
Scarlet	101	13.8	64.5	40	8
WA7925	110	14.4	66.4	43	3
WPB936	111	14.8	63.5	32	3
Average	112	14.0	64.8	37	3
LSD _{.10}	8	0.5	1.6	1	4
<i>Kuna</i>					
Hollis	87	13.9	63.9	41	58
IDO592	116	12.6	63.5	35	25
IDO593	122	12.1	64.1	32	3
Jefferson	113	12.9	64.3	38	78
Jerome	125	12.2	63.8	35	43
Scarlet	107	13.5	64.0	38	70
WA7925	103	13.5	64.6	39	73
WPB936	121	13.5	64.9	33	8
Average	111	13.0	64.1	36	44
LSD _{.10}	14	1.4	1.0	2	34

¹ Means must differ by more than the LSD_{.10} to be statistically different

Significant discounts can result with hard red spring protein below 14%. The protein levels for the hard reds in these variety trials are lower than desired for many entries at all sites, particularly Kuna despite applying additional N at the boot stage. Note that protein at each site tends to be inversely related to the yield of an entry at that site.

Table 4. Hard Red Spring Wheat Performance in the Treasure Valley over several locations or years.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>2003 (3 site years)</i>					
Hollis	92	14.1	64.8	43	21
IDO592	114	13.0	64.6	35	9
IDO593	111	13.0	64.6	32	1
Jefferson	108	13.4	65.0	37	27
Jerome	117	12.9	64.8	35	15
Scarlet	100	13.7	64.7	40	26
WA7925	102	14.0	66.1	41	25
WPB936	106	14.6	64.0	33	3
Average	106	13.6	64.8	37	16
LSD _{.10}	10	0.8	0.9	1	20
<i>2002-03 (6 site years)</i>					
Hollis	89	14.0	63.9	42	33
Jefferson	103	13.6	64.0	36	43
Jerome	113	13.1	64.2	35	20
Scarlet	98	13.4	63.9	39	31
WPB936	105	14.2	63.4	33	13
Average	102	13.6	63.9	37	28
LSD _{.10}	7	0.8	0.8	2	18
<i>2000-03 (12 site years)</i>					
Jefferson	108	12.9	64.0	36	21
Scarlet	99	12.8	63.7	39	21
WPB936	111	13.3	63.8	33	6
Average	107	13.0	63.8	36	16
LSD _{.10}	6	0.1	0.5	1	11
<i>1997-02 (18 site years)</i>					
Hi-Line	97	13.0	63.3	34	5
Jefferson	105	12.7	63.2	36	10
WPB936	103	12.7	62.6	32	3
Average	102	12.8	63.0	34	6
LSD _{.10}	5	0.5	0.6	1	6

¹ Means must differ by more than the LSD_{.10} to be statistically different

The hard red springs are typically about 5% less productive than the soft whites. They are more comparable in yield when planted late in western Idaho.

Hard White Wheat

Hard white spring wheat (HWS) is a market class separate and different from the soft white and hard red

Table 5. Hard White Spring Wheat Performance in the Treasure Valley. 2003.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>Parma</i>					
Blanca Grande	109	13.5	68.6	32	0
BR7030	92	14.1	67.1	35	0
IDO377s	100	13.1	66.8	38	0
IDO594	107	13.4	66.6	35	0
IDO595	93	13.3	65.4	37	0
Lolo	101	12.2	67.1	38	0
Macon	90	13.4	65.6	37	0
Plata	103	12.8	67.4	32	0
WA7931	113	12.7	66.8	41	0
Winsome	100	12.0	66.3	34	0
WPB Pristine	97	14.2	67.5	37	0
YU995-231W	105	12.9	67.1	25	0
Average	101	13.1	66.9	35	0
LSD _{.10}	11	0.8	1.1	1	--
<i>Weiser</i>					
IDO377s	109	13.3	66.8	36	3
IDO594	111	13.8	65.6	32	3
IDO595	117	12.9	62.8	36	3
Lolo	109	13.1	65.8	37	18
Macon	113	13.4	64.3	37	3
WA7931	107	13.0	64.8	42	5
Winsome	107	12.6	64.1	32	8
WPB Pristine	117	14.1	65.5	35	3
YU995-231W	123	13.6	64.6	24	0
Average	112	13.3	64.9	34	5
LSD _{.10}	7	0.4	2.0	1	13
<i>Kuna</i>					
IDO377s	114	13.0	63.3	37	88
IDO594	107	13.6	64.3	32	33
IDO595	127	11.5	62.6	37	28
Lolo	116	12.7	64.3	38	63
Macon	101	12.6	63.6	35	90
WA7931	122	12.0	64.5	40	13
Winsome	123	12.5	61.8	34	3
WPB Pristine	116	13.1	65.9	35	40
YU995-231W	131	12.1	65.0	25	0
Average	117	12.6	63.9	35	39
LSD _{.10}	13	1.4	1.9	2	24

¹ Means must differ by more than the LSD_{.10} to be statistically different

the potential \$14 per acre HWS marketing production incentive provided in the new farm bill.

There is considerable breeder and industry interest in the hard whites as they have potential for re-capturing significant foreign bread and noodle markets. That interest is evident in the number of entries in the Cooperative Extension Nurseries in 2002 and 2003. The first two commercial sales of US hard white wheat recently moved to Taiwan.

ID377s, an Idaho release, was the first public hard white spring release for the PNW and was licensed to Promar Select Inc. **ID377s** has excellent yield potential, typically equaling that of the best soft whites. **Lolo**, a UI release, is high yielding, is a little shorter than **ID377s**, with better straw strength and slightly better test weight.

Winsome, an OSU release, has yielded as well as **ID377s**, is shorter and more lodging resistant. It has lower test weight and protein is considerably lower than **ID377s**.

WPB Pristine has good yield potential. It has excellent protein and test weight. It is shorter than **ID377s** and more lodging resistant.

The Western Plant Breeders advanced line **YU995-231W** has been evaluated for two seasons and ranked the highest in yield over the six site years. It is very short and has the best lodging resistance of all entries. It also has excellent test weight. Since it has higher yield potential it may require more N to reach acceptable protein.

Macon (WA7899), a WSU release, has not been as productive as **Lolo** or **ID377s**. **WA7931** has been evaluated only in 2003 and ranked second highest in yield over the three sites. It is taller than other entries but has excellent straw strength.

Blanca Grande, a General Mills release, has good yield potential, is short, and has high protein and test weight. It has not been extensively tested.

The hard white market involves considerable risk to existing soft white markets and vice versa. Producers are reminded that co-mingling soft white and hard white wheat will destroy the value of the mix for food uses, a sure way to lose both domestic and export markets.

Growers are urged to venture into the hard whites only if they have a ready market and can insure the segregation of hard whites from soft whites. This is perhaps the greatest concern with large scale hard white production in a traditional soft white production area.

classes. Large scale production in the PNW has largely been controlled by the Promar Select Coop through the use of licensed varieties. But acreage has increased with

Table 6. Hard White Spring Wheat Performance in the Treasure Valley over sites and years. 2002.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>2003 (3 sites)</i>					
IDO377s	108	13.1	65.6	37	30
IDO594	108	13.6	65.5	33	12
IDO595	113	12.6	63.6	37	10
Lolo	108	12.7	65.7	37	27
Macon	101	13.1	64.5	36	31
WA7931	114	12.6	65.3	41	6
Winsome	110	12.4	64.0	33	3
WPB Pristine	110	13.8	66.3	35	14
YU995-231W	120	12.9	65.6	25	0
Average	110	13.0	65.1	35	15
LSD _{.10}	10	0.7	1.3	1	19
<i>2002-03 (6 sites)</i>					
IDO377s	105	13.2	64.6	37	39
Lolo	107	12.9	65.3	36	29
Macon	96	13.4	63.0	35	39
Winsome	109	12.2	63.8	34	17
WPB Pristine	107	13.8	65.7	35	24
YU995-231W	114	12.7	65.0	25	4
Average	106	13.0	64.5	34	25
LSD _{.10}	7	0.8	1.0	2	17
<i>2001-03 (9 sites)</i>					
IDO377s	110	12.6	64.5	37	29
Lolo	107	12.5	65.1	36	19
Macon	101	12.6	65.1	36	26
Winsome	110	11.8	63.6	34	11
WPB Pristine	102	13.3	65.5	35	16
Average	106	12.5	64.5	36	20
LSD _{.10}	7	0.9	0.8	1	13
<i>1999-2003 (15 sites)</i>					
IDO377s	113	12.3	64.8	37	17
Lolo	114	12.1	65.3	36	12
Winsome	112	11.6	63.5	34	7
Average	113	12.0	64.5	36	12
LSD _{.10}	6	0.6	0.5	1	8

¹ Means must differ by more than the LSD_{.10} to be statistically different

varieties and advanced lines since 1987. Spring barley variety performance is presented in Tables 7-10.

Barley stripe rust was not evident this past season in western Idaho. Consequently there was no advantage to those releases with stripe rust resistance. There was considerably more lodging at Weiser than at Parma despite slightly shorter plants.

Six-Row Varieties

Steptoe, still the most commonly grown six-row in western Idaho, has serious flaws for an irrigated feed barley. Its height, weak straw, and susceptibility to lodging limit its yield potential under high yielding conditions. The greater productivity of more recently released varieties is largely related to their greater resistance to lodging. **Steptoe** has largely been displaced in Washington, Oregon, and all other Idaho production districts due to its lower productivity, poor straw strength, and poorer feed quality.

WB Nebula, a Western Plant Breeder release, is the shortest of the six row varieties and has excellent

Table 7. Six-Row Spring Barley Variety Performance in the Treasure Valley. 2003

Variety	Yield bu/A	Test Weight lb/bu	Height in.	Lodging %	Thins %
<i>Parma</i>					
Brigham	128	52.8	37	3	1.69
Colter	134	55.5	41	8	2.44
Legacy	115	53.0	42	25	6.67
Millennium	160	55.9	38	0	4.88
Nebula	117	47.6	32	13	3.98
Steptoe	129	54.4	41	35	2.58
Tradition	127	55.6	41	10	1.89
Average	130	53.5	39	13	3.45
LSD _{.10}	18	2.4	2	20	3.26
<i>Weiser</i>					
Brigham	125	52.0	36	75	3.99
Colter	123	54.0	40	90	6.29
Legacy	137	55.2	37	95	4.68
Millennium	142	54.9	37	98	5.27
Nebula	128	53.1	32	70	1.51
Steptoe	105	52.9	38	90	3.65
Tradition	127	55.5	41	88	2.01
Average	127	53.9	37	86	3.92
LSD _{.10}	14	1.6	2	23	2.00

¹ Means must differ by more than the LSD to be statistically different.

Spring Barley

The Southwest Idaho Cooperative Extension Variety Performance trials have evaluated barley

Table 8. Spring 6-Row Barley Variety Performance in the Treasure Valley over several sites and years

Variety	Yield bu/A	Test Weight lb/bu	Height in.	Lodged %	Thins %
<i>2003 (2 sites)</i>					
Brigham	126	52.4	37	39	2.84
Colter	129	54.8	41	49	4.37
Legacy	126	54.1	40	60	5.68
Millennium	151	55.4	37	49	5.07
Nebula	123	50.4	32	41	2.75
Step toe	117	53.6	39	63	3.12
Tradition	127	55.6	41	49	1.96
Average	128	53.7	38	50	3.68
LSD _{.10}	14	1.8	2	37	2.01
<i>2000-03 (10 site years)</i>					
Brigham	129	51.0	34	18	1.29
Colter	124	52.3	37	23	2.78
Millennium	147	52.9	34	16	2.93
Nebula	140	51.1	30	12	0.93
Step toe	132	52.3	36	34	1.68
Average	134	51.9	34	21	1.93
LSD _{.10}	12	1.0	2	13	0.76
<i>1997-03 (19 site years)</i>					
Colter	118	50.5	37	12	2.90
Nebula	125	49.0	29	6	0.98
Step toe	121	50.4	37	17	1.90
Average	121	50.0	35	12	1.93
LSD _{.10}	9	1.1	1	7	0.68

¹ Means must differ by more than the LSD to be statistically different.

lodging resistance. It has better yield potential than **Step toe** under more optimum conditions but no better test weight.

Colter, a USDA release from Aberdeen is slightly taller than **Step toe**, but has much better straw strength and lodging resistance. **Colter** also matures earlier than **Step toe**. **Colter** is especially susceptible to stripe rust and has not consistently yielded as well as **Step toe**.

The most recent Utah State releases, **Millennium** and **Brigham**, were evaluated for the fourth year in 2003. They have excellent lodging resistance. **Brigham** is the shorter of the two but **Millennium** had the better test weight. **Millennium** is about as tall as **Step toe**. **Millennium** has excellent yield potential and ranked highest in yield over four years of testing. 2003 was particularly favorable for **Millennium** as it averaged over 20 bu/A higher in yield than the next closest entry.

Legacy and **Tradition** are Busch Ag malting varieties that are comparable in height and yield to **Step toe**. They have better straw strength and test weight than **Step toe**.

Two-Row Varieties

Feed

Six and two-row variety yields have narrowed considerably over the years. With better tolerance to stripe rust, moisture stress, and improved lodging resistance, the better two row varieties can now be expected, especially with stripe rust present, to be more productive than many six row barleys normally produced in western Idaho.

Idagold, the first **Adolph Coors** feed barley release, has excellent yield potential and better straw strength than older two row releases we have tested. **Idagold** is six to seven inches shorter than **Baronesse** and shorter than most other two-row barleys. **Idagold** has yielded better than **Step toe** in many trials where lodging was significant.

Table 9. Two-Row Spring Barley Variety Performance in the Treasure Valley, 2003

Variety	Yield bu/A	Test Weight lb/bu	Height in.	Lodged %	Thins %
<i>Parma</i>					
Bob	127	58.3	39	33	2.95
B5057	145	57.0	37	5	1.50
Idagold	132	56.5	31	0	3.66
Idagold II	124	55.6	30	10	2.04
Merit	130	55.9	37	5	3.13
Moravian 37	125	56.3	34	3	2.05
WA8601-97	128	56.3	37	38	1.53
Average	130	56.5	35	13	2.41
LSD _{.10}	12	1.4	2	17	2.41
<i>Weiser</i>					
Bob	90	54.6	36	100	3.84
B5057	110	53.3	35	95	5.49
Idagold	95	53.6	30	78	3.93
Idagold II	102	53.9	30	53	4.84
Merit	120	53.6	37	91	5.74
Moravian 37	103	55.1	32	78	3.02
WA8601-97	104	54.4	35	96	3.78
Average	104	54.1	33	84	4.38
LSD _{.10}	15	1.5	1	24	1.28

¹ Means must differ by more than the LSD to be statistically different.

Idagold II (C32) is another **Adolph Coors** feed barley release with seed to be handled by Western Seed. It has better straw strength than **Idagold** but has not consistently yielded as well.

Bob is a WSU release that is taller and may have weaker straw than **Idagold**. **Bob** has excellent test weight

Malting

Moravian 37 has excellent yield potential, yielding comparable to **Idagold** over the last three years of testing. **Moravian 37** is more productive than **Galena**. It will be contracted primarily in the Magic Valley but seed is available from Coors for non-contracted plantings. Coors may purchase non-contracted production if there are problems in other production areas, as there has been in previous years.

Merit is a Busch two-row malt barley that is taller than **Moravian 37**, has lower test weight, but has good straw strength and yielded somewhat better than **Moravian 37** in 2003. **B5057** is a **Busch Ag** advanced line that ranked first in yield across both 2003 sites.

Treasure Valley producers can now enjoy the high yields typical of six-row barley as well as the superior test weight and feed quality of a two-row. With the uncertainty of barley stripe rust, the more tolerant two rows offer an excellent alternative.

Increased malting capacity in Idaho Falls will eventually increase the competition for malting barley acreage in eastern Idaho. Malting variety performance is evaluated because of the interest of mallsters and brewers in our area and the potential for malting contracts.

Busch Ag Resources will return to the Treasure Valley and contract for an increased acreage of two-row **Harrington** malting barley during the 2004 season. At last report they were offering about \$6.50 a hundred weight (contract price subject to change) if producers meet malting specs. Their two row specs include at least 75% plump kernels on a 6/64 x 3/4" screen and an upper protein limit of 13.5% on a dry matter basis (roughly 12% protein if moisture content is adjusted to 12%).

For irrigated barley the protein specs should not be an issue unless there are irrigation problems or excessive nitrogen. Producers are encouraged to measure residual N and adjust their N fertilization accordingly.

Excessive nitrogen is a problematic beyond exceeding the protein spec. It can promote excessive growth and lodging. With lodging all sorts of specs can be affected. Kernel brightness is reduced, mold and sprout increases. Lodging reduces kernel plumpness

Table 10. Spring 2-Row Barley Variety Performance in the Treasure Valley over several years or sites. 2002

Variety	Yield	Test Weight	Height	Lodged	Thins
	bu/A	lb/bu	in.	%	%
2003 (2 sites)					
Bob	108	56.4	37	66	3.39
B5057	128	55.1	36	50	3.49
Idagold	114	55.1	31	39	3.80
Idagold II	113	54.8	30	31	3.44
Merit	125	54.8	37	48	4.43
Moravian 37	114	55.7	33	40	2.54
WA8601-97	116	55.3	36	67	2.66
Average	117	55.3	34	49	3.39
LSD _{.10}	17	1.6	1	36	1.68
2001-03 (7 sites)					
Idagold	124	54.6	29	25	1.80
Idagold II	114	54.3	29	12	1.71
Moravian 37	122	55.9	31	24	1.22
Average	120	54.9	30	20	1.58
LSD _{.10}	12	1.0	2	15	0.75

¹ Means must differ by more than the LSD to be statistically different.

which in turn causes uneven germination in the malt house. The concern about lodging is why they recommend **Cerone**[®] for those fields prone to lodge.

Harrington was evaluated in the Cooperative Extension nurseries from 1996-1998. It averaged 90% as high in yield as **Steptoe** (99 vs 109 bu/A). **Harrington** test weight was 49.4 lb/bu and 2.2 lb/bu higher than **Steptoe**. **Harrington** averaged 35" in height (three inches shorter than **Steptoe**) and lodging averaged 51% vs 72% for **Steptoe**.

Skinned and broken kernels is another significant concern as they don't germinate uniformly. Slower cylinder speeds are generally required for threshing.

Increased malting acreage is a positive development for Treasure Valley producers. The local facilitating elevator is **Weiser Feed and Storage, Inc.** For contracting information, contact Luke McHenry or Kevin Jones at 208-414-1882.

Fractionation/Ethanol

A grain (barley, wheat, corn) fractionation/ethanol production facility is being pursued in the Treasure Valley. **Treasure Valley Renewable Resources, LLC**, a group of local investors, has received Malheur County

Table 11. Hull-less Spring Barley Performance. Parma, 2003.

Entry	Yield bu/a	Height in	Test wt lb/bu	Lodged %	Heading -----Julian Date----	Maturity
2-Row						
00AH3778	111	42	64.5	10	143	169
00AH4136	117	40	65.6	28	145	174
00AH5590	113	38	64.6	3	149	177
00AH5950	115	38	59.0	5	150	184
00AH6111	112	39	63.3	25	147	173
00AH6155	119	36	63.9	3	147	177
01AH2812	109	36	62.9	20	147	178
01AH2822	118	37	65.4	20	147	180
01ID209H	110	35	61.6	3	152	182
01ID435H	115	36	63.5	20	150	180
97Ab6526	122	37	63.6	50	148	177
Alamo	115	37	62.6	0	150	177
Ab38-5	115	38	63.0	8	149	177
Ab38-6	110	39	61.9	3	150	179
Baronesse	155	37	56.1	25	149	183
Bear	133	38	64.1	3	149	179
BZ596-225	120	38	64.3	70	148	182
BZ598-095	129	37	55.9	18	149	179
Idagold	156	31	54.8	15	152	187
Idagold II	143	30	56.3	0	151	184
McGuire	136	38	66.9	20	150	182
Meresse	111	35	66.9	5	147	177
Merlin	114	28	65.9	0	150	183
Waxbar	96	37	59.4	58	153	178
6-Row						
96M5288	128	41	59.3	0	147	182
Azhul	109	31	56.6	18	143	177
Nebula	133	31	50.6	0	148	184
Steptoe	131	41	51.3	15	147	180
YU502-90	62	35	54.9	0	152	183
YU502-91	87	37	62.9	0	150	181
YU508-88	84	36	62.0	0	150	182
YU599-006	111	27	52.6	0	149	182
YU599-012	91	27	62.3	0	149	184
Mean	116	36	60.8	13	149	180
LSD _{.10}	13	2	3.1	18	1	3

Planning and Zoning and Court approval to site their facility near Ontario, OR.

Fractionation involves separation of food grade fiber, starch, and protein constituents from the grain kernel and marketing the residual as feed or ethanol feedstock. Constituents marketed separately bring higher returns than if the barley or wheat were marketed as whole grain or ethanol alone. It is the sort of value-added processing that is talked about frequently for

improving financial returns to producers. If successful, the first contracted crop would be in 2005.

For barley fractionation, a waxy hull-less barley is being considered. The waxy character allows more food grade starch to be recovered and the hull-less character will mean less residual to market as feed. While the yields from hull-less barleys are traditionally lower than those we currently produce for feed or malting, with sufficiently high contract prices they could still offer significantly higher returns than we have traditionally enjoyed from local feed barley.

We conducted observational and replicated trials involving these barley genotypes at the Parma Research and Extension Center in 2003. Observational trials were conducted with fall plantings, though the data are not presented here. Most of the fall planted entries were spring genotypes and many suffered greatly reduced stands from winter-kill. Nevertheless, yields from the fall plantings were excellent for some entries despite considerable lodging.

The results for the replicated spring planted trial are shown in Table 11. Hull-less entries can generally be identified by their very high test weights. Several hull-less lines, including McGuire (136 bu/A) and Bear (133 bu/A), yielded comparable to Steptoe (131 bu/A) and Nebula (133 bu/A) six-row feed barley. But most hull-less entries yielded considerably less than the two row feed types used for the standards. The two-row feed barleys Idagold and Baronesse were the most productive of all entries (156 and 155 bu/A).

These results are encouraging, as we did not anticipate that any hull-less types would do nearly as well as the standard six-row feed types evaluated. The six-row standards may have yielded less relative to the two-row standards because of the greater high temperature stress in 2003. Additional experience with hull-less barley is needed in the Treasure Valley. Both fall and spring seeded trials are planned for the 2004 season.

Additional Variety Performance Information

Variety performance information from related areas is available from other extension cereal and research breeding program web sites including the following: OSU (<http://www.css.orst.edu/cereals>), USU (<http://wheat.usu.edu>), and UI (<http://www.uidaho.edu/aberdeen/cereals/>).

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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://agweb.ag.uidaho.edu/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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