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The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

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Topics: **Page**

Important Dates:

June 29	Parma Research and Extension Center Field Day, Parma
July 11	Malheur Station Field Day, Ontario

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 2000 season marked the 14th 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 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 2000 season. Trials were located at the Parma Research and Extension Center (early planted), Kuna, and Weiser. The Parma trial was planted March 20, Weiser on March 27, and Kuna was planted April 5. There was significant lodging at Kuna, much less at Parma and none at Weiser. Weiser was the least productive and may have been influenced by a slight moisture stress during stem extension as plant heights at Weiser were the lowest of all locations.

Warm temperatures during early spring hastened maturity. Whereas 1998 was characterized by excessive temperatures during grain fill and poor test weight, 1999 and 2000 conditions were considerably more favorable resulting in extraordinarily good test weight at all locations.

There was no incidence of barley stripe rust in the Treasure Valley during 2000 that we are aware of. Spring barley variety performance should be interpreted in that light.

Soft White Spring Wheat

The 2000 results for soft white spring wheat varieties are shown in Table 1 on this page and the next. The best indication of long term variety performance is comparisons involving several sites and years.

WB Challis and **Jubilee** were the highest yielding soft white spring wheats when averaged over all three 2000 trials. When averaged over the last eight years the listed varieties did not differ significantly.

Alpowa, a WSU release has yielded well over the long term. **Alpowa** is slightly taller than many others, but has good lodging resistance and excellent

Table 1. 2000 Early Planted Irrigated Soft White Spring Wheat Performance in the Treasure Valley.

Variety	Yield	Protein	Test Weight	Height	Lodging
	bu/acre	%	lb/bu	in	%
		Parma			
Alpowa	145[1]	11.0	65.3	36	0
Centennial	137	10.0	64.5	37	0
Challis	154	9.4	63.9	37	3
IDO 506	139	9.9	63.3	36	0
IDO 526	143	10.8	63.6	35	10
Jubilee	150	10.5	63.5	39	3
ML042-29,3	143	9.8	65.4	36	5
ML042-409-1,5	122	9.7	62.3	38	3
Penawawa	148	9.6	64.5	37	0
Pomerelle	147	10.4	62.9	41	8
Treasure	142	9.9	63.0	39	6
Vanna	138	9.6	64.4	36	3
Whitebird	132	9.9	64.1	38	8
Zak	132	10.6	62.6	39	23
$LSD_{.10}$	17	1.0	1.0	2.5	18
		Weiser			
Alpowa	88	11.6	63.5	35	0
Centennial	97	11.4	64.4	33	0
Challis	102	11.3	62.6	33	0
IDO 506	92	11.7	62.0	34	0
IDO 526	102	10.9	62.9	34	0
Jubilee	98	11.1	63.6	34	0
ML042-29,3	98	12.2	64.4	33	0
ML042-409-1,5	104	11.6	62.1	34	0
Penawawa	84	12.1	63.5	32	0
Pomerelle	87	11.6	62.0	33	0
Treasure	100	11.3	63.6	34	0
Vanna	92	11.8	62.1	33	0
Whitebird	95	11.1	63.4	33	0
Zak	95	11.9	61.5	35	0
$LSD_{.10}$	7	1.5	0.8	1.5	-
		Kuna			
Alpowa	122	12.2	60.6	39	73
Centennial	116	11.8	61.3	37	65
Challis	129	11.5	61.1	40	78
IDO 506	133	11.5	59.9	40	83
IDO 526	130	11.5	61.8	38	35
Jubilee	135	11.2	63.5	39	15
ML042-29,3	125	12.4	61.1	38	78
ML042-409-1,5	132	11.4	60.6	39	40
Penawawa	125	12.2	61.1	38	78
Pomerelle	126	11.8	60.5	38	85
Treasure	115	11.5	57.6	39	98
Vanna	119	11.6	60.0	39	55
Whitebird	123	11.4	61.4	39	60
Zak	114	12.0	59.1	41	93
$LSD_{.10}$	13	0.6	2.1	1.1	37

Table 1 continued. 2000 Irrigated Soft White Spring Wheat Performance in the Treasure Valley.

Variety	Yield	Protein	Test Weight	Height	Lodged
	bu/acre	%	lb/bu	in	%
			2000 (3 *sites*)		
Alpowa	118	11.6	63.1	37	24
Centennial	117	11.1	63.4	36	22
Challis	128	10.8	62.5	37	27
IDO 506	122	11.0	61.7	37	28
IDO 526	125	11.1	62.8	36	15
Jubilee	128	10.9	63.5	38	6
ML042-29,3	122	11.5	63.6	36	28
ML042-409-1,5	119	10.9	61.7	37	14
Penawawa	119	11.3	63.0	36	26
Pomerelle	120	11.2	61.8	37	31
Treasure	119	10.9	61.4	37	35
Vanna	116	11.0	62.2	36	19
Whitebird	117	10.8	63.0	37	23
Zak	114	11.5	61.1	38	38
Average	121	11.1	62.6	36	24
$LSD_{.10}$	7	0.5	0.9	1	14
			1993-00 (23 site years)		
Alpowa	109	10.6	62.8	37	15
Centennial	109	10.7	62.3	36	11
Penawawa	109	11.0	61.7	36	14
Pomerelle	105	10.3	60.8	36	15
Treasure	105	10.4	60.8	36	16
Whitebird	108	10.5	62.4	37	12
Average	107	10.6	61.8	36	14
$LSD_{.10}$[1]	6	0.4	0.6	0.8	6

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

test weight. **Alpowa** also has better milling and baking quality than **Penawawa**, the other WSU release.

Penawawa is an older Washington release that yields well. **Penawawa** tends to be higher in protein and lower in test weight than **Alpowa**. **Penawawa** is relatively early. It is a poor milling wheat and is not on the list of the Idaho Wheat Commission's acceptable varieties for quality.

Jubilee is a new Idaho release formerly tested as IDO525. It has excellent yield potential and good straw strength despite being a little taller. **Jubilee** also has excellent test weight.

WB Vanna and **Centennial** also have good yield potential and good straw strength. **Pomerelle** and **Treasure** were the least productive when averaged across several years and locations but have superior baking qualities. **Pomerelle** has slightly better straw strength than **Treasure**. **Whitebird** has good yield potential but has not yielded as well as **Penawawa** and **Alpowa. Whitebird** does have low protein and superior baking quality. **Vanna** is among the shorter of the spring wheats with good straw strength and lodging resistance.

The ML0 advanced lines are Merrill Lewis lines and have undergone limited testing. The **ML042-409-1,5** has performed well in the limited testing at Parma the past two years. Despite its taller height, it has excellent straw strength, similar to **Vanna**, and lodged less than most of the other varieties.

WB Challis is a new variety that has ranked the highest in yield in the 1999 and 2000 tests. It has moderate height, test weight, and straw strength.

Zak is a new WSU release. It has only been evaluated in one year of testing. It did not yield as well as **Challis** or **Jubilee** but did not differ from the other released varieties.

Practically all the released spring wheats have acceptable or better milling and baking quality. The lone exception is **Penawawa** which has poor milling yield.

Hard Red Spring Wheat

Hard red spring varieties in the Cooperative Extension nurseries 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 2 and 3. As with any variety comparison, the more years and sites they can be compared over the more reliable the information.

WB 936, a Western Plant Breeders release, historically yields slightly better than **Vandal** and **Hi-Line,** has a test weight advantage over **Vandal** and matures considerably earlier than **Vandal**. **Vandal's** primary advantage over **WB 936** is its protein, which is excellent. Both varieties have good straw strength.

Jefferson is a new hard red spring from the UI breeding program at Aberdeen. It yielded as well as **WPB936** the past two years. Jefferson is taller than **WPB936** and more susceptible to lodging. It generally has lower protein than **WB936** and significantly less than **Vandal. Jefferson** has moderate Hessian fly resistance, excellent milling yield and good baking quality. **Jefferson** is also taller than **Vandal** or **WB 936.**

Hi-Line, a Montana variety, has been evaluated for four years in western Idaho. **Hi-Line** was less productive than **WB 936** but had comparable

Table 2. Hard Red Spring Wheat Performance in the Treasure Valley. 2000.

Variety	Yield	Protein	Test Weight	Height	Lodged
	bu/A	%	lb/bu	in.	%
			Parma		
Hank	130[1]	11.7	64.5	33	0
Hi-Line	128	11.8	65.4	34	0
IDO 528	118	11.6	62.9	33	0
IDO 529	134	11.0	65.8	38	0
Jefferson	119	11.4	63.9	37	10
Vandal	120	12.0	63.1	34	0
WA 7824	126	11.3	65.3	40	10
WA 7839	119	12.2	65.1	36	0
WPB 936	120	11.8	64.3	32	0
Average	124	11.6	64.5	35	2
$LSD_{.10}$	11	0.7	0.7	1.6	8
			Weiser		
Hank	108	13.5	64.5	31	0
Hi-Line	98	13.0	65.3	32	0
IDO 528	91	12.8	62.5	30	0
IDO 529	98	12.8	65.8	32	0
Jefferson	98	12.7	64.6	33	0
Vandal	94	13.4	63.3	30	0
WA 7824	98	12.9	64.8	34	0
WA 7839	93	13.6	65.3	32	0
WPB 936	103	13.1	65.5	30	0
Average	98	13.1	64.6	31	0
$LSD_{.10}$	9	0.4	1.3	1.2	-
			Kuna		
Hank	138	13.9	63.0	35	28
Hi-Line	116	13.3	63.0	36	58
IDO 528	133	13.6	61.4	34	33
IDO 529	130	13.0	63.6	39	25
Jefferson	127	13.4	63.5	37	75
Vandal	126	14.0	59.9	36	18
WA 7824	111	13.8	63.9	38	20
WA 7839	118	13.6	64.0	35	15
WPB 936	144	13.7	63.6	35	15
Average	127	13.6	62.9	36	32
$LSD_{.10}$	7	0.4	1.5	1.4	37

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

Table 3. Hard Red Spring Wheat Performance in the Treasure Valley over several locations or years.

Variety	Yield	Protein	Test Weight	Height	Lodged
	bu/A	%	lb/bu	in.	%
			*2000 (*3 site years)		
Hank	*125*[1]	12.9	64.0	33	9
Hi-Line	114	12.7	64.5	34	19
IDO 528	114	12.7	62.3	32	11
IDO 529	121	12.3	65.0	36	8
Jefferson	115	12.5	64.0	36	28
Vandal	113	13.1	62.1	33	6
Scarlet	112	12.7	64.6	36	10
Tara	110	13.1	64.8	34	5
WPB 936	122	12.9	64.5	32	5
Average	116	12.7	64.0	34	11
$LSD_{.10}$	5	0.3	0.7	0.8	11
			1999-2000 (6 site years)		
Hank	117	12.7	64.0	33	7
Hi-Line	102	12.5	64.8	34	13
Jefferson	108	12.3	64.4	36	18
Vandal	102	13.1	63.0	33	4
WPB 936	108	12.6	64.2	32	3
Average	107	12.6	64.1	34	9
$LSD_{.10}$	5	0.3	0.5	0.7	7
			1997-00 (12 site years)		
Hi-Line	91	12.9	62.7	34	2
Jefferson	101	12.5	62.7	36	3
Vandal	94	13.4	61.1	33	0
WB 936	98	12.8	61.6	32	0
$LSD_{.10}$	7	0.6	1.2	1	2

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

protein and higher test weight. It was taller than **WB 936** but had good straw strength.

Vandal and **Hi-Line** are comparable in yield, both are less yielding than **WPB936** or **WPB Hank**. **Vandal** is relatively late maturing when spring planted and this may account for its poor acceptance in southern Idaho. It has good straw strength. The primary advantage of **Vandal** is it's high protein. **Vandal** has been evaluated in late fall plantings and has been much more competitive in yield. With comparable yield and higher protein, late fall planted **Vandal** should bring greater gross returns to producers than most other hard reds.

WPB Hank is a new release from Western Plant Breeders. It has been the highest yielding variety over the last two years. **WPB Hank** is relatively short with good lodging resistance and good test weight. Protein for **WPB Hank** is comparable to **WPB936**. It has above average milling and baking quality.

Scarlet and **Tara** are new releases from WSU that have undergone limited testing in the Treasure Valley. They are comparable to **Vandal** and **Hi-Line** in yield, have good test weight, and good straw strength.

Significant discounts can result with hard red springs if protein is below 14%. The protein levels reported for the hard reds in these variety trials are low at most locations. The trials were not fertilized with N for maximum protein and quite often the sites are under fertilized with N. The commercial production of these varieties would entail quite different N management than what is provided for soft white spring wheat.

Hard red spring at 14% protein has been trading in Portland the past several months at **$1.05 to $1.15 per bushel** over soft whites. When corrected for transportation these hard red prices are about 40% higher than the soft white price. The hard red springs are typically only about 5% less productive than the soft whites when early spring planted.

Spring Barley

The Southwest Idaho Cooperative Extension Variety Performance trials have evaluated barley varieties and advanced lines since 1987. Spring barley variety performance is presented in Tables 4 and 5 for the six-rows, Tables 6 and 7 for the two-rows.

Barley stripe rust was not evident this past season in western Idaho. Consequently there was no advantage to those releases with stripe rust resistance.

Test weights of six rows at Parma averaged an excellent 51.1 lb per bu indicating very good growing conditions during grain fill. Yields were very good to excellent at all sites despite significant lodging..

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** lodged more than any other variety when averaged across all locations in 2000.

Steptoe has been displaced in Washington, Oregon, and all other production districts in Idaho due to its lower productivity and poorer feed quality. **Steptoe** is generally poorer than other six-rows due to higher hull content.

Table 4. Six-Row Spring Barley Variety Performance in the Treasure Valley. 2000

Variety	Yield	Test Weight	Height	Lodging
	bu/A	lb/bu	in.	%
		Parma		
Brigham	163	53.3	37	5
Century	123	53.1	39	55
Colter	147	52.9	40	40
WPB Gustoe	141	52.3	31	53
Maranna	150	51.6	30	35
Millennium	200	53.3	36	13
WPB Nebula	158	50.8	31	43
Statehood	124	53.0	38	18
Steptoe	138	52.0	38	70
Tango	118	51.0	37	73
6B93-2978	120	53.4	39	68
6B94-8253	146	54.8	40	18
6B95-2482	138	53.3	41	38
Average	143	52.7	37	40
$LSD_{.10}$	37	2.1	3.8	32
		Weiser		
Brigham	147	51.0	29	0
Century	154	51.8	33	30
Colter	146	52.8	34	0
WPB Gustoe	141	51.6	24	5
Maranna	138	51.9	28	0
Millennium	144	50.3	32	0
WPB Nebula	141	51.1	25	0
Statehood	152	50.1	31	30
Steptoe	141	51.9	33	68
Tango	138	50.4	33	63
Average	144	51.3	30	20
$LSD_{.10}$	12	1.3	1.3	30
		Kuna		
Brigham	171	47.6	34	8
Century	130	50.4	36	33
Colter	122	48.6	34	43
WPB Gustoe	170	50.1	29	38
Maranna	155	48.5	31	55
Millennium	178	50.3	35	13
WPB Nebula	166	49.9	32	8
Statehood	141	49.6	35	40
Steptoe	158	50.1	38	80
Tango	154	49.6	36	30
Average	155	49.5	34	35
$LSD_{.10}$	20	2.7	2.6	34

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

Table 5. Spring 6-Row Barley Variety Performance in the Treasure Valley over several sites and years

Variety	Yield	Test Weight	Height	Lodged	Thins
	bu/A	lb/bu	in.	%	%
		2000 (3 sites)			
Brigham	161	50.6	33	4	1.3
Century	136	51.8	36	39	1.4
Colter	138	51.4	36	28	2.7
WB Gustoe	151	51.3	28	32	2.0
Maranna	148	50.7	30	30	1.8
Millenium	174	51.3	35	8	3.5
WB Nebula	155	50.6	29	17	0.5
Statehood	139	50.9	35	29	2.2
Steptoe	146	51.3	36	73	1.7
Tango	136	50.3	35	55	3.8
Average	147	51.1	33	33	2.1
$LSD_{.10}$	15	1.2	1.7	18	1.6
		1997-00 (12 site years)			
Century	119	50.3	37	14	1.5
Colter	122	50.0	37	9	2.8
WB Gustoe	122	49.0	27	10	1.3
Maranna	117	49.5	30	9	3.1
WB Nebula	123	48.3	29	4	0.9
Steptoe	121	49.3	36	12	2.7
Statehood	118	49.6	35	31	1.7
$LSD_{.10}$	5	0.5	0.8	6	1.0

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

WB Gustoe, a Western Plant Breeders release, has better yield potential than **Steptoe** and is substantially shorter with better lodging resistance. Test weight of **WB Gustoe** is less than **Colter** or **Maranna**, especially in the absence of stripe rust.

Maranna, an OSU release, yields better than **Steptoe** in the absence of stripe rust and has better test weight, stronger straw, and is shorter. However, **Maranna** is particularly susceptible to barley stripe rust.

Colter, a USDA release from Aberdeen, has several advantages over **Steptoe** including better yield potential and test weight. Though it tends to be slightly taller than **Steptoe** it has much better straw strength and lodging resistance. **Colter** also matures earlier than **Steptoe**. **Colter**, like **Maranna,** is especially susceptible to stripe rust.

WB Nebula is a Western Plant Breeders release. Until **Millenium** and **Brigham** were entered into testing this year, **WB Nebula** was easily the most productive variety. **WB Nebula** is a short variety with excellent lodging resistance. Test weight is comparable to **WB Gustoe** and **Steptoe** under more favorable conditions but lower than **Maranna** and **Colter**.

Two Utah varieties were tested for the fourth year in 2000. **Century** and **Statehood** were named in honor of Utah's centennial celebration. Both varieties tend to lack the straw strength of the more productive six row varieties but they lodge less than **Steptoe**. These varieties weathered the adverse conditions of stripe rust and heat in 1998 better than **Colter** and **Maranna**.

Two new Utah releases were evaluated for the first time in 2000. **Millenium** was the most productive variety over all sites, followed by **Brigham**. These two varieties also had the least lodging. **Brigham** is the shorter of the two but **Millenium** had the better test weight. **Millenium** is about as tall as **Steptoe**. These two releases appear to be taking us to another yield level.

Tango was released for it's resistance to stripe rust. An OSU release, it has **Steptoe** parentage which accounts for its poor lodging resistance. **Tango** was limited in yield due to lodging in 2000.

Two-Row Varieties

Breeders have made great strides in providing two-row barley for feed or malt with significantly improved yield and straw strength. The difference in yield between available six and two-row varieties had narrowed considerably prior to 1998 and the widespread incidence of stripe rust. With better tolerance to stripe rust, the better two row varieties can now be expected, when stripe rust is present, to be more productive than many six row barleys normally produced in western Idaho.

Baronesse, from Western Plant Breeders (originally from Germany), is now widely grown in the Pacific Northwest. **Baronesse** replaced most of the **Steptoe** acreage in Washington because it yields more in those rainfed environments and has better feed quality in all environments. In the Treasure Valley, **Baronesse** yields better than **Lud**, at one point our most commonly grown two row, but it does not yield higher than the six row **Steptoe** when there is no stripe rust. With stripe rust, **Baronesse** out yielded **Steptoe** by about 14 bu per acre over three sites in 1998.

Table 6. Two-Row Spring Barley Variety Performance in the Treasure Valley. 2000

Variety	Yield	Test Weight	Height	Lodged
	bu/A	lb/bu	in.	%
		Parma		
Baronesse	154	55.5	37	73
BCD47	146	55.4	29	25
Camas	135	54.4	36	53
C32	181	53.9	32	8
C37	144	54.6	36	60
Galena	132	54.9	33	45
H3860224	150	54.9	37	35
Idagold	164	54.4	29	25
Merit	139	52.9	38	45
Orca	126	54.4	35	33
Valier	133	54.1	37	55
WA9504-94	133	56.3	34	30
2B96-5038	122	54.4	40	30
2B96-5119	135	55.9	40	40
Average	142	54.7	35	40
$LSD_{.10}$	32	2.1	2.8	33
		Weiser		
Baronesse	127	53.8	32	43
BCD47	119	51.9	29	0
Camas	132	53.4	32	48
C32	138	52.3	29	0
C37	129	52.5	30	10
Galena	132	52.1	33	10
H3860224	126	52.9	32	30
Idagold	118	49.9	28	45
Merit	115	52.0	34	25
Orca	131	54.5	33	28
Valier	136	54.9	34	8
WA9504-94	123	52.5	30	23
Average	127	52.7	31	22
$LSD_{.10}$	11	1.3	2.6	29

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

Idagold, an Adolph Coors feed barley, has now been tested for several years in the Treasure Valley. **Idagold** is generally better yielding than **Baronesse** due in part to better straw strength and less lodging. **Idagold** is six to seven inches shorter than **Baronesse**. **Idagold** yielded better than **Steptoe** in many trials where lodging was significant. **Idagold** is later than **Baronesse** and has lower test weight, especially when temperatures are higher during grain fill.

Merit is a two-row malting barley from Busch Ag Resources. It yields less than **Idagold** and **Baronesse**.

Table 6 continued. Spring 2-Row Barley Variety Performance in the Treasure Valley. 2000

Variety	Yield	Test Weight	Height	Lodged
	bu/A	lb/bu	in.	%
			Kuna	
Baronesse	147	52.5	34	63
BCD47	166	52.4	30	3
Camas	136	51.9	37	100
C32	175	53.5	32	30
C37	151	53.3	32	50
Galena	154	52.9	33	33
H3860224	148	54.0	35	80
Idagold	153	49.6	31	90
Merit	135	50.8	38	80
Orca	154	52.1	36	28
Valier	134	52.6	36	85
WA9504-94	161	52.5	32	63
Average	151	52.3	34	59
$LSD_{.10}$	20	1.9	2.2	44
			2000 (3 sites)	
Baronesse	143	53.9	34	59
BCD47	`145	53.2	29	9
Camas	134	53.2	35	67
C32	165	53.2	31	13
C37	141	53.4	33	40
Galena	139	53.3	33	29
H3860224	141	53.9	35	48
Idagold	144	51.3	29	53
Merit	129	51.8	36	50
Orca	137	53.7	35	29
Valier	134	53.8	35	49
WA9504-94	139	53.8	32	38
Average	141	53.2	33	40
$LSD_{.10}$	12	1.0	1.5	21
			1999-00 (6 sites)	
Baronesse	134	54.7	34	38
BCD47	121	54.0	28	6
C32	141	54.0	30	8
C37	135	54.6	33	25
Galena	130	54.1	32	18
Idagold	137	52.9	29	32
Merit	125	53.1	3.7	31
Orca	130	54.3	36	18
WA9504-94	129	54.8	31	23
Average	131	54.1	32	22
$LSD_{.10}$	8	0.6	1.1	13

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

Orca, an OSU release, is one of the first two-rows with barley stripe rust resistance. **Orca** is taller than

Idagold but has comparable straw strength and resistance to lodging. It has yielded less than **Idagold** and **Baronesse** when earlier planted.

Galena is a two-row malting barley from Adolph Coors. It typically yields less than **Idagold** with earlier plantings but better than **Idagold** in later seedings. **Galena** is earlier and taller than **Idagold** and has higher test weight. **Galena** is 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 several years.

The Coors lines **C32**, and **C37** have been among the highest yielding 2-row entries for feed or malt during their testing the past three years. **C37** is designed to replace **Galena** as the contracted two row for malting. **C32** is a feed barley alternative to **Idagold** that offers even better yield as well as significantly better test weight and lodging resistance. The 2000 season was particularly agreeable to **C32** as it yielded 20 bu/A higher over all sites than the next highest ranking entry.

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.

Durum Wheat

Pendleton Flour Mills uses over 2 million bushels of durum wheat annually, most of which is produced outside the PNW. Contracts have been written for southern Idaho production in the past but the mill has two primary concerns with our production, the occurrence of black tip and flour ash content. Black tip is the discoloration due to fungal growth on the germ end of the kernel. Black tip discolors the flour as it is not milled from the kernel when processed. It seems to occur more readily with high humidity, rainfall, or sprinkler irrigation during the grain filling period. Whereas sprinkler irrigated wheat may provide more flexibility in managing late season nitrogen, furrow irrigated durum wheat may incur less blacktip.

Ash content is less tractable. Irrigated durum seems to have higher ash content than dryland durum. It doesn't seem as though we have much control over ash content. All the spring varieties we've tested have ash content outside the acceptable range.

Producers are encouraged to contact Pendleton Flower Mills for availability of 2000 contracts (541-276-6511). Contract specifications include at least 13% protein, 85% hard amber vitreous kernels (HVAK), and 60 lb test weight. There is no tolerance for sprout as indicated by falling number values less than 325. Also, there is no tolerance for black tip. Dockage must not exceed 1%.

Only two or three durums were evaluated against the long term quality standard **WPB 881**. Neither **Kronos** or the advanced lines yielded any better than **WPB 881. Kronos** is an Arizona Plant Breeders variety. It tends to average lower in hard amber vitreous kernels (HVAK) than other varieties. It is probably the most commonly grown durum in southern Idaho.

Except for **Kronos** we've had no difficulty obtaining 85% HVAK with most varieties. Protein values have averaged less than 13% in most sites

Table 7. Durum performance in 2000 and over other years and locations.

Variety	Yield	Protein	Height	Test Weight	HVAK	Lodged
	bu/A	%	in	lb/bu	%	%
			Parma 2000			
Kronos	119[1]	11.9	29	64.4	72	0
NPB871104E Sel#92	114	11.6	32	63.5	95	0
D-95-434	99	12.0	32	64.2	86	0
WPB 881	117	11.7	34	63.8	92	0
Average	112	11.8	32	64.0	86	0
$LSD_{.10}$	15	0.6	1.1	1.0	5.5	-
			Weiser 2000			
Kronos	87	13.9	26	64.4	85	0
NPB87114E Sel#92	88	13.6	29	62.1	95	0
WPB 881	89	13.5	29	62.8	96	0
Average	88	13.7	28	63.1	92	0
$LSD_{.10}$	9	0.5	1.4	2.0	3.1	-
			2000 (2 sites)			
Kronos	103	12.9	28	64.4	79	0
NPB87114E Sel#92	101	12.6	31	62.8	95	0
WPB 881	103	12.6	32	63.3	94	0
Average	102	12.7	30	63.5	89	0
$LSD_{.10}$	18	1.3	2.4	1.1	5.6	-

Table 8. Hard White Spring Wheat Performance in the Treasure Valley. 2000.

Variety	Yield	Protein	Test Weight	Height	Lodged
	bu/A	%	lb/bu	in.	%
			Parma		
ID377s	148	11.2	66.1	39	0
ID0560	142	10.1	64.1	38	0
Lolo	141	10.5	66.1	38	0
ML455	134	9.8	63.6	39	0
OR4920307	133	10.2	64.5	35	0
OR4920311	131	10.3	65.3	37	0
UC896	136	10.7	65.5	36	8
Winsome	133	10.5	63.6	35	0
Average	137	10.4	64.9	37	1
$LSD_{.10}$	11	0.8	0.7	1.7	6
			Weiser		
ID377s	103	12.3	65.0	34	0
ID0560	108	11.8	64.9	34	0
Lolo	115	12.8	66.1	36	0
ML455	97	11.6	63.8	35	0
OR4920307	98	11.7	63.5	32	0
OR4920311	85	12.5	63.8	33	0
UC896	91	12.5	65.3	31	0
Winsome	97	11.8	63.3	32	0
Average	99	12.1	64.4	33	0
$LSD_{.10}$	8	0.3	1.4	1.0	--
			Kuna		
D377s	137	13.0	63.9	39	70
ID0560	146	12.2	62.8	37	15
Lolo	151	12.4	65.1	39	15
ML455	108	13.1	59.6	34	53
OR4920307	133	12.0	62.3	36	30
OR4920311	134	12.1	62.7	39	40
UC896	131	12.3	64.3	36	38
Winsome	139	12.4	62.0	35	50
Average	135	12.4	62.8	37	39
$LSD_{.10}$	8	0.5	1.5	1.7	41

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

because the trials have not been managed for durum production. Our results suggest it will be easier to meet the vitreous kernel requirement than the protein specification. Even so, acceptable protein for durums (13%) should be easier to produce than the 14% protein for hard red spring wheat.

On farm storage is required. For seed the numbers are 541-963-8815 (OR) or 208-678-2286 (ID).

Table 9. Hard White Spring Wheat Performance in the Treasure Valley over sites and years. 2000.

Variety	Yield	Protein	Test Weight	Height	Lodged
	bu/A	%	lb/bu	in.	%
			2000 (3 sites)		
ID377s	129	12.1	65.0	37	23
ID0560	132	11.4	63.9	36	5
Lolo	136	11.9	65.8	39	5
ML455	113	11.5	62.3	36	18
OR4920307	121	11.3	63.4	34	10
OR4920311	117	11.6	63.0	36	13
UC896	120	11.8	65.0	34	15
Winsome	123	11.6	63.0	34	17
Average	123	11.7	64.0	36	13
$LSD_{.10}$	5	0.3	0.7	0.8	13
			1999-2000 (6 sites)		
ID377s	116	11.8	65.2	36	18
Lolo	123	11.6	65.6	37	11
ML455	104	11.2	63.2	36	14
UC896	104	11.8	65.2	34	9
Winsome	115	11.3	63.4	34	11
Average	112	11.5	64.6	35	13
$LSD_{.10}$	4	0.3	0.4	0.8	9
			1998-2000 (9 sites)		
ID377s	108	12.1	63.7	38	13
UC896	99	11.9	63.4	34	5
Winsome	104	11.4	61.5	34	6
Average	104	11.8	62.9	35	8
$LSD_{.10}$	3	0.2	0.4	0.5	5

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

Hard White Wheat

Hard white spring wheat is a market class separate and different from the soft white class. Large scale production in the PNW has largely been controlled by the Promar Select Coop through the use of licensed varieties in selected areas of the PNW. **ID377s**, an Idaho release licensed to Promar, was the first to be produced by Promar. Additional hard whites that Promar will produce include **ML455**.

Several hard whites were evaluated in the Cooperative Extension Nurseries in 2000. **Lolo**, a new UI release , was the most productive of all the released

varieties. Although it is as tall as **ID377s**, it has much better straw strength and slightly better test weight.

ML455 is a Merrill Lewis line that is less well adapted to the Treasure Valley. It yields less and test weight is lower than **ID377s**. **Winsome**, an OSU release, and **UC896**, a UC release, did not do as well as **ID377s** in 2000 although the yield of **Winsome** was comparable over two years of testing. Both are shorter than **ID377s**.

The hard white market involves considerable risk to existing soft white markets and visa versa.. Producers are reminded that co-mingling soft white and hard white wheats will destroy the value of the mix for food uses. 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. Co-mingling the two classes and ruining the quality of the mix for either soft white or hard white uses is a sure way to lose both domestic and export markets.

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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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