



The Cereal Sentinel

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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 2005 season marked the 19th 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 UI **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.

Two irrigated spring trials were conducted during the 2005 season. Trials were located at the Parma R & E Center and Weiser. The Parma trial was planted March 1, and Weiser on March 4. Lodging was highest at Parma due to excessive residual N. Plant height averaged 4" shorter and protein 1.2% higher at Weiser but wheat yields differed by only 5 bu/A.

Stripe rust on wheat was widespread in the Treasure Valley during 2005, especially at Parma, but barley was largely unaffected. 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 2005 results for soft white spring wheat varieties are shown in Tables 1-2. Several soft white spring releases offer not only increased yield but significant improvements in milling or baking quality over the most commonly grown **Penawawa**.

The most commonly grown spring wheat in western Idaho has been **Penawawa**, an early maturing, older release that tends to be higher in protein, lower in test weight with very poor milling and baking quality. It was susceptible to stripe rust in 2005 and yielded significantly less than **Alturas** and other stripe rust tolerant varieties. **Penawawa**, though an acceptable feed wheat, is not a preferred variety for milling or export.

Alturas (ID0526) is a high yielding, high quality Idaho release that has performed very well since its introduction. **Alturas** was the most productive variety evaluated from 1999-05. **Alturas** is slightly taller than **Penawawa** but lodging was similar for them. Test weight for **Alturas** is slightly lower than **Penawawa**.

Table 1. 2005 Soft White Spring Wheat Performance in the Treasure Valley. Variety.

	Yield	Protein	Test Weight	Height	Lodging
	bu/acre	%	lb/bu	in	%
<i>Parma</i>					
Alpowa	103	10.4	59.5	42	0
Alturas	144	9.4	61.8	41	10
IDO632	141	8.5	61.5	35	10
Jubilee	71	11.0	55.1	43	0
Penawawa	95	10.6	57.8	39	5
Treasure	92	9.9	58.3	41	13
WB Nick	149	9.3	61.9	42	0
Whitebird	58	10.6	55.2	42	0
Average	107	10.0	58.9	41	5
LSD _{.10}	9	0.5	1.5	1	10
<i>Weiser</i>					
Alpowa	98	11.1	63.0	37	0
Alturas	119	11.0	62.9	37	0
IDO632	114	10.4	62.9	32	0
Jubilee	93	11.0	60.7	38	0
Penawawa	101	11.4	62.4	36	0
Treasure	95	11.5	61.3	37	0
WB Nick	115	11.7	63.2	38	0
Whitebird	80	11.3	60.3	38	0
Average	102	11.2	62.1	37	0
LSD _{.10}	10	0.7	1.0	2	--

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

Alturas showed good resistance to stripe rust prevalent in 2005 and certified seed should be available for 2005.

Alpowa is slightly taller than **Alturas** but has good lodging resistance and excellent test weight. **Alpowa** was more tolerant of stripe rust than **Penawawa** and consequently more productive than **Penawawa** in 2005. **Alpowa** baking quality is better than **Penawawa** but not as good as **Alturas**, **Whitebird** or **Jubilee**.

Whitebird has yield potential comparable to **Penawawa** and **Alpowa**, but less than **Alturas**. Plant height and straw strength is similar to **Alpowa** and **Jubilee**. **Whitebird** has low protein and excellent baking quality. **Whitebird** was the most susceptible to stripe rust in 2005 and yields were extremely poor.

Jubilee, normally high yielding (equal to **Alturas**) with good milling quality, was susceptible to Stripe rust in 2005. Consequently, yields were lower as compared to rust tolerant varieties.

Nick, a Westbred release, has been comparable in yield to **Alturas** the last two years over 5 sites and had

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 %
<i>2005 (2 sites)</i>					
Alpowa	100	10.8	61.3	39	0
Alturas	132	10.2	62.4	39	5
IDO632	128	9.5	62.2	33	5
Jubilee	82	11.0	57.9	41	0
WB Nick	132	10.5	62.6	40	0
Penawawa	98	11.0	60.1	37	3
Treasure	94	10.7	59.8	39	6
Whitebird	69	11.0	57.8	40	0
Average	104	10.6	60.5	38	2
LSD _{.10}	12	0.6	1.2	1	5
<i>1999-05 (20 site years)</i>					
Alpowa	102	11.1	63.4	37	13
Alturas	113	10.6	62.7	35	14
Jubilee	108	10.8	63.0	37	14
Penawawa	106	11.1	62.9	35	16
Whitebird	102	10.8	62.7	37	13
Average	106	10.9	62.9	36	14
LSD _{.10} ¹	3	0.2	0.3	0.4	3

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

good resistance to stripe rust in 2005. **Nick** is similar in height to **Alturas** but has better straw strength and much better test weight.

IDO632 is a very short advanced line from Aberdeen, averaging 6" less than **Alturas**. It had the lowest protein of all entries in 2005. **IDO632** yield, test weight and tolerance of Stripe rust were similar to **Alturas**.

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.

WB936, a Western Plant Breeders release, is the most commonly planted hard red spring in southern Idaho. Historically it has had good yield potential, comparable to **Jefferson**, but less than **Jerome**. **WB936** was susceptible to Stripe rust in 2005 and yields were lower than usual at Parma as a result.

Table 3. Hard Red Spring Wheat Performance in the Treasure Valley. 2005.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>Parma</i>					
IDO593	124	11.1	59.5	38	0
Jefferson	117	12.2	62.4	42	8
Jerome	146	11.4	62.2	39	3
WB936	118	12.2	59.7	36	0
Average	126	11.7	60.9	38	3
LSD _{.10}	10	1.0	1.5	1	11
<i>Weiser</i>					
IDO593	108	11.8	62.6	33	0
Jefferson	91	12.8	63.7	35	3
Jerome	106	12.2	62.7	36	0
WB936	105	13.3	62.9	31	0
Average	102	12.5	63.0	34	0.6
LSD _{.10}	6	1.1	0.8	1	3

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

Jefferson, a release from the UI breeding program at Aberdeen, has yielded as well as **WB936** over several years of testing, but less than **Jerome**. **Jefferson** is taller than **WB936** and more susceptible to lodging. It has protein comparable to **WB936** with excellent milling yield and good baking quality. It was also tolerant of stripe rust in 2005.

Jerome (IDO566) is an Idaho release that is the most productive entry over four years of testing. It yielded higher than **Jefferson** and **WB936** and had good tolerance to stripe rust in 2005. **Jerome** has excellent test weight, better than **WB936**, and is slightly taller than **WB936**. **Jerome** has excellent milling yield, mixing tolerance and very good baking quality. Since **Jerome** is more productive, it has lower protein. **Jerome** may be less tolerant of moisture stress during stem elongation than **Jefferson**.

IDO593 is an advanced line from the UI Aberdeen breeding program. It yielded comparable to **Jerome** with similar protein but is shorter. **IDO593** yielded more than **WB936** and has comparable lodging resistance. Since **Jerome** and **IDO593** are highly productive, they have lower protein than **WB936**, and may require additional N for both yield and acceptable protein.

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>2005 (2 site years)</i>					
IDO593	116	11.5	61.0	35	1
Jefferson	104	12.5	63.1	38	4
Jerome	126	11.8	62.4	37	1
WB936	112	12.7	61.3	34	0
Average	114	12.1	62.0	36	2
LSD _{.10}	9	0.6	0.9	1.0	5
<i>2003-05 (9 site years)</i>					
IDO593	109	12.5	62.4	33	6
Jefferson	102	13.1	63.1	36	20
Jerome	113	12.6	62.9	35	8
WB936	102	13.7	62.2	33	7
Average	106	13.0	62.7	34	10
LSD _{.10}	5	0.3	0.5	0.6	8
<i>2002-05 (11 site years)</i>					
Jefferson	101	13.3	63.1	36	31
Jerome	112	12.8	63.1	35	13
WB936	103	13.7	62.4	33	11
Average	105	13.3	62.9	34	18
LSD _{.10}	5	0.3	0.4	0.6	7

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

Table 5. Hard White Spring Wheat Performance in the Treasure Valley. 2005.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>Parma</i>					
IDO377s	131	11.6	62.7	42	33
IDO596	140	11.0	64.1	42	3
Lochsa(IDO597)	130	11.7	60.1	41	3
Klasic	75	11.8	59.1	31	0
Lolo	124	11.6	62.9	41	40
Otis (WA7931)	138	11.3	63.1	46	13
Winsome	100	10.9	58.8	38	0
Average	120	11.4	61.5	40	13
LSD _{.10}	10	0.6	0.9	1	24
<i>Weiser</i>					
IDO377s	99	12.4	63.7	37	0
IDO596	100	12.5	63.9	37	0
Lochsa(IDO597)	107	12.9	63.1	35	0
Klasic	81	11.8	64.8	26	3
Lolo	105	12.5	63.8	36	0
Otis (WA7931)	102	12.3	63.7	41	0
Winsome	92	11.7	62.4	32	0
Average	98	12.3	63.6	35	0.4
LSD _{.10}	10	0.9	0.7	1	2

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

Hard White Spring Wheat

Hard white spring wheat (HWS) is a different market class from the soft white and hard red classes. Hard whites are used for both noodle and bread making depending on the variety and protein level.

There is considerable breeder and industry interest in hard whites as they have potential for re-capturing significant foreign bread and noodle markets, as well as satisfying an increasing demand for hard white wheat domestically. Southern Idaho and Utah mills are currently milling hard white wheat. Variety Preserved hard white wheat is contracted in southern Idaho at prices above hard red winter by AgriSource.

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.

Significant discounts can result with hard red spring protein below 14%. The protein levels for the hard reds in these trials are lower than desired because late season N was not applied for protein enhancement. The hard red springs are typically about 5% less productive than the soft whites. They are more comparable in yield under more stressful conditions, i.e. later plantings.

For a detailed discussion of N management issues related to hard wheat protein you can access on-line the Cooperative Extension publication PNW 578, "**Nitrogen Management for Hard Wheat Protein Enhancement**" at <http://info.ag.uidaho.edu/pdf/pnw/bul578.pdf>. The publication is also available as a hard copy from Ag Publications (phone 208/885-7982, fax 208/885-4648, email: calspubs@uidaho.edu).

Lolo, a more recent UI release, tends to be higher yielding than **ID377s**, is similar in height, protein and lodging resistance, but has better test weight. **Lolo** also has higher gluten strength and is better for breadmaking than **ID377s**.

Winsome, an OSU release, has yielded as well as **ID377s** but less than **Otis**, **Lolo**, and **Lochsa** over the last two years. **Winsome** is shorter and more lodging resistant than **Lolo** or **ID377s**. It has lower test weight and protein is lower than **ID377s**.

Otis (WA7931), a 2004 WSU release, has been evaluated for the past three years. It was the highest yielding over the last three years with resistance to Stripe rust in 2005. It has protein and test weight similar to **Lolo**. It is taller than most but has excellent straw strength and lodged less than **ID377s** and **Lolo**.

Klasic is the oldest hard white currently produced. It has good gluten strength and is used primarily for breadmaking. It yielded comparable to **ID377s** and **Lolo** in 2004 but is considerably shorter. Test weight for **Klasic** is high. **Klasic** was susceptible to Stripe rust in 2005 and yield was reduced.

Lochsa (ID0597), a recent Idaho release, was comparable in yield but higher in protein than **Lolo**. **Lochsa** was similar in height but had better straw strength than **Lolo**.

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 domestic and export markets. Growers are urged to grow 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 such as western Idaho. There are currently very limited local hard white markets in the Treasure Valley.

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 7-10.

Barley stripe rust was not evident this past season in western Idaho. There was more lodging at Parma than at Weiser where plant heights averaged 3" shorter.

Six-Row Varieties

Steptoe, still the most commonly grown six-row in western Idaho, has serious flaws for an irrigated feed barley. **Steptoe** has been displaced in Washington,

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

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>2005 (2 sites)</i>					
IDO377s	115	12.0	63.2	40	16
IDO596	120	11.8	64.0	39	1
Klasic	78	11.8	61.9	29	1
Lochsa	119	12.3	61.6	38	1
Lolo	115	12.1	63.3	39	20
Otis	120	11.8	63.3	43	6
Winsome	96	11.3	60.6	35	0
Average	109	11.9	62.6	37	7
LSD _{.10}	10	0.6	1.1	1	14
<i>2004-2005 (5 sites)</i>					
IDO377s	103	12.4	61.8	37	25
Klasic	89	12.2	61.8	27	12
Lochsa	103	13.1	60.8	36	12
Lolo	105	12.4	62.2	36	26
Otis	109	12.3	61.6	40	12
Winsome	94	12.0	59.3	33	8
Average	100	12.4	61.2	35	16
LSD _{.10}	7	0.3	0.8	1	8
<i>1999-2005 (20 sites)</i>					
IDO377s	110	12.3	64.0	37	25
Lolo	111	12.2	64.5	36	19
Winsome	108	11.7	62.5	34	10
Average	110	12.1	63.7	36	18
LSD _{.10}	4	0.2	0.3	0.5	5

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

Oregon, and all other Idaho production districts due to its lower productivity, weak straw, and well known inferior feed quality.

WB Nebula, a **Western Plant Breeder** release, is the shortest of the six rows and has excellent lodging resistance. It yields better than **Steptoe** under more optimum conditions but has no better test weight.

Colter, a USDA release from Aberdeen is slightly taller than **Steptoe**, but has better test weight. **Colter** matures earlier than **Steptoe**, is especially susceptible to stripe rust, and has not consistently yielded as well as **Steptoe**.

The most recent Utah State releases, **Millenium** and **Brigham**, were evaluated for the sixth year in 2005. Both are 2 to 3 inches shorter than **Steptoe** with far

Table 7. Six-Row Spring Barley Variety Performance in the Treasure Valley. 2005.

Variety	Yield bu/A	Test Weight lb/bu	Height in.	Lodging %	Thins %
<i>Parma</i>					
01ID255	178	48.1	46	38	2.11
00ID1550	176	50.8	47	35	1.64
Brigham	184	47.5	40	38	1.98
Colter	163	49.8	44	85	6.70
Creel	174	50.3	42	90	2.86
Legacy	175	50.6	44	75	2.10
Millennium	187	50.1	41	30	2.17
Nebula	191	49.8	36	3	0.63
Step toe	157	47.7	46	85	4.04
Tradition	174	51.8	45	55	0.70
Average	176	49.6	43	53	2.49
LSD _{.10}	21	1.3	2	26	2.96
<i>Weiser</i>					
01ID255	141	48.2	43	5	1.00
00ID1550	125	49.2	43	15	1.24
Brigham	131	46.3	37	5	1.02
Colter	133	50.7	44	20	1.85
Creel	136	51.0	41	40	1.82
Legacy	119	50.6	40	68	1.80
Millennium	140	50.5	36	3	1.68
Nebula	152	46.7	31	5	0.93
Step toe	108	47.4	42	90	2.29
Tradition	97	51.5	42	55	0.76
Average	128	49.2	40	31	1.44
LSD _{.10}	22	1.9	2	21	0.77

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

superior straw strength and lodging resistance.

Millennium has the better yield potential and test weight of the two. **Millennium** with **Nebula** ranked highest in yield (14 site years), averaging 16 bu/A higher than **Step toe**. **Brigham** is also higher yielding than **Step toe** under severe lodging conditions but may not have the yield potential of **Millennium** or **Nebula**.

Creel, a 2002 USDA release, is shorter with improved straw strength over **Step toe** and better test weight. **Creel** was higher yielding than **Step toe**.

00ID255, a hulless, and **01ID1550**, a hulled variety, are distinctive in that they carry the low phytate gene. They have significant **Colter** parentage and are similar to **Colter** in most agronomic characteristics. Low phytate grain has a greater percentage of seed phosphorus in forms that are better used by non-

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>2005 (2 sites)</i>					
00ID255	159	48.2	45	21	1.56
01ID1550	150	50.0	45	25	1.44
Brigham	158	46.9	38	21	1.50
Colter	148	50.2	44	53	4.27
Creel	155	50.6	41	65	2.34
Legacy	147	50.6	42	71	1.95
Millennium	164	50.3	39	16	1.92
Nebula	171	48.3	34	4	0.78
Step toe	132	47.6	44	88	3.16
Tradition	135	51.6	44	55	0.73
Average	152	49.4	42	42	1.97
LSD _{.10}	15	1.2	1.4	19	1.54
<i>2003-2005 (6 site years)</i>					
Brigham	145	50.0	37	34	3.13
Colter	138	52.4	41	50	5.75
Legacy	139	52.7	41	61	4.66
Millennium	158	52.5	37	26	5.56
Nebula	148	50.0	32	25	2.74
Step toe	129	50.5	40	67	3.77
Tradition	134	53.9	42	49	2.09
Average	142	51.7	39	45	3.96
LSD _{.10}	9	0.9	0.9	11	1.19
<i>2000-05 (14 site years)</i>					
Brigham	130	50.3	35	28	2.02
Colter	127	52.1	39	39	4.14
Millennium	145	52.7	35	20	3.83
Nebula	144	50.8	31	17	1.73
Step toe	129	51.3	38	56	2.55
Average	135	51.5	36	32	2.85
LSD _{.10}	7	0.6	0.9	8	0.69

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

ruminants. Greater utilization of seed phosphorus by non-ruminants results in less P excreted in manure which provides several advantages to the feeder. The low phytate gene typically leads to somewhat lower test weight. These lines were as productive as **Step toe** and in 2004, but more productive in 2005. They are similar in height to **Step toe** but lodged less in 2005.

Tradition and **Legacy** are Busch Ag malting barleys. They are taller than **Step toe** but as productive with higher test weight.

Table 9. Two-Row Spring Barley Variety Performance in the Treasure Valley. 2005.

Variety	Yield bu/A	Test Weight lb/bu	Height in.	Lodged %	Thins %
<i>Parma</i>					
Burton	152	52.6	43	53	2.98
Conrad	159	52.2	39	75	2.73
Harrington	162	51.0	40	90	3.43
Idagold	155	51.0	33	60	3.61
Merit	169	50.6	41	88	3.71
Moravian 37	161	52.9	35	28	1.57
Radiant	185	53.0	42	73	3.23
WA10701-99	167	51.9	40	60	2.63
Average	164	51.9	39	66	2.99
LSD _{.10}	19	1.2	2	28	1.26
<i>Weiser</i>					
Burton	115	53.4	37	35	1.39
Conrad	136	52.6	37	28	1.14
Harrington	111	51.2	38	60	4.05
Idagold	120	51.5	29	8	2.71
Merit	134	52.2	38	18	1.37
Moravian 37	137	53.5	33	8	1.03
Radiant	117	52.1	36	55	4.28
WA10701-99	118	52.4	37	65	1.61
Average	123	52.3	36	34	2.20
LSD _{.10}	14	1.6	2	21	1.50

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

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

Variety	Yield bu/A	Test Weight lb/bu	Height in.	Lodged %	Thins %
2005 (2 sites)					
Burton	134	53.0	40	44	2.19
Conrad	148	52.4	38	51	1.93
Harrington	136	51.1	39	75	3.75
Idagold	137	51.3	31	34	3.16
Merit	151	51.4	39	53	2.54
Moravian 37	149	53.2	34	18	1.30
Radiant	151	52.6	37	64	3.76
WA10701-99	143	52.2	39	63	2.12
Average	144	52.1	37	50	2.59
LSD _{.10}	13	1.0	1.5	20	1.04
2004-05 (4 sites)					
Idagold	142	51.8	31	42	7.09
Harrington	131	52.3	39	63	6.06
Merit	144	51.7	39	50	6.98
Moravian 37	143	54.0	34	37	3.15
Radiant	143	53.0	38	61	7.35
WA10701-99	132	52.7	39	61	5.30
Average	139	52.6	36	52	5.99
LSD _{.10}	10	0.8	1.1	13	1.50
2001-05 (10 sites)					
Idagold	133	53.7	29	28	3.89
Merit	131	54.0	36	37	4.14
Moravian 37	134	55.6	32	25	1.94
Average	132	54.5	32	30	3.32
LSD _{.10}	6	0.5	0.6	7	0.76

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

Two-Row Varieties

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 **Adolph Coors** feed barley release, has excellent yield potential and better straw strength than older two rows. **Idagold** is six to seven inches shorter than **Baronesse**, the most commonly grown two row in Idaho. **Idagold** has yielded better than **Steptoe** in many trials where lodging was significant.

Moravian 37 is a **Coors** malting variety that has excellent yield potential, comparable to **Idagold** over the last five years of testing.

Radiant, a 2004 WSU release, is considerably taller but yielded comparable to **Idagold** even though it lodges more. **WA10701-99** a WSU advanced line, yields comparable to the two row **Harrington**, but less than other two rows.

Merit, a **Busch** two-row malt barley, is taller than **Moravian 37**, and has lower test weight. It yielded comparable to **Moravian 37** in 2004 and 2005.

Burton is a USDA release with Russian wheat aphid resistance. It does not yield as well as **Moravian 37** or **Radiant** but was comparable to **Idagold**.

Fractionation/Ethanol

The grain (barley, wheat, corn) fractionation/ethanol production facility pursued by **Treasure Valley Renewable Resources, LLC**, a group of local investors, has received Malheur County and Oregon state approval for the location near Ontario, OR. For information on the progress of this proposed facility contact John Hamilton at TVRR@fmtc.com.

Fractionation involves separation of food grade fiber, starch, and protein components from the grain kernel and marketing the residual as feed or ethanol. Components marketed separately bring higher returns than marketing the whole grain or ethanol alone.

Waxy barley is being considered because more food grade starch is recovered. Hulless barley is also desirable. High Beta-Glucan barley is desired as it can be marketed as a cholesterol reducing food ingredient. Specialty barleys are lower yielding and will require a higher contract price to provide higher returns than from feed barley.

We conducted replicated trials involving these barley genotypes and other specialty barleys at the Parma R & E Center in 2003 through 2005. Spring planted barley performance for 2003-05 is shown in Table 11. Feed barley standards included **Idagold** and **Baronesse** for two rows and **Nebula** and **Steptoe** for six rows.

After three years of testing we have a clearer picture of the relative performance of specialty barley. The mean performance among two rows of hulless low phytate barley yielded from 76-80%, hulless waxy barley yielded 90% of the yield of commonly grown two row feed barley standards. Among six rows, a hulled waxy barley yielded 86% of the yield of the most productive six row feed barley standard.

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/>).

Excessive N

Since prices for hard red spring wheat are considerably above soft whites, there may be increased

interest in hard red spring wheat production in 2006. With the understanding that higher seasonal N rates are needed to meet the requirements for both yield and acceptable protein, it will be tempting for some to apply the entire seasonal N requirement in one application either pre-plant or during vegetative growth, to avoid later application costs.

We have in the past measured yield reductions from excessive N available during vegetative growth in the absence of lodging. Yield losses have ranged at most about 9% for hard red winter wheat. Why the high N causes lower yield with no lodging is poorly understood.

Some associate the lower yield with excessive vegetative growth. Excessive growth that contributes to lodging is well known, but that is not the phenomena to which they refer. Excessive vegetative growth can contribute to greater disease incidence, but that does not explain our previous results where leaf diseases were largely absent. Whatever the cause, excessive available N during vegetative growth should be avoided.

Putting the entire N requirement on pre-plant would be advantageous if the N release could be delayed such that excessive N during early vegetative growth was avoided. We evaluated two N sources, urea and slow release polymer coated urea (PCU), this past year that were applied pre-plant at 120, 180, or 240 lb N/A. Initial residual N measured 130 lb N/A in the first foot at planting after dry beans.

There was no lodging in the trial. Hard spring wheat yield decreased with both N sources as the N rate increased from 120 to the highest N rate, 240 lb N/A, decreasing from 10 to 13% depending on the N source. However, yield across all N rates was higher for the polymer coated urea.

Table 12. Excessive N effects on yield (bu/A) of hard red spring wheat. Parma, 2005.

N source	-----N rate (lb/A)-----		
	120	180	240
Urea	84	82	72
PCU	92	87	83

These results are preliminary but encouraging. There was Stripe rust in this trial which may have exacerbated the excessive N effect. Regardless, there was a definite yield advantage in this trial to the slower N release material. Protein concentrations did not differ, but since the PCU was the more productive treatment, more protein N per acre was actually harvested. The research will continue in the coming season.

similar for winter barley. Urea should not be applied to soils sufficiently wet to begin dissolving the prill. Top dressed N sources on spring planted wheat also gave similar results.

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Southwest Idaho Extension Cereals Website

Previous issues of the *Cereal Sentinel* newsletter back to 1996 can be viewed as PDF files on the

Southwest Idaho Extension Cereals Homepage at <http://www.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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