



The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

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Important Dates:

February 18-19

Idaho Ag Summit

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) (Fax-208-722-6708) (Email bradb@UIDAHO.EDU)**

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Cooperative Extension Variety Trials

The 1996 season marked the 10th season of the Southwest Idaho Cooperative Extension Variety Performance Trials. The trials, supported by the Idaho Wheat Commission, Idaho Barley Commission, private breeders and the University of Idaho College of Agriculture allow the testing of public and proprietary varieties and advanced lines under the irrigated conditions of the Treasure Valley.

Four irrigated spring trials were conducted during the 1996 season. Trials were located at the Parma Research and Extension Center (early and late planted), Weiser, and Kuna.

The early and late Parma trials were planted March 19 and April 15. Kuna was planted March 26 and tended to be the most productive 1996 location. There was significant lodging at the March 18 planted Weiser and early March planted Parma sites. There was little lodging at Kuna and no lodging in the late planted Parma trial. Lodging appears to have limited yield at the early planted Parma and Weiser sites. High temperatures during grain fill likely affected production at all sites.

Soft White Spring Wheat

The 1996 results for soft white spring wheat varieties are shown in Table 1. A better indication of variety performance is possible with comparisons involving several sites and years in Table 2.

Centennial, Alpowa, Penawawa, and WB Vanna all yielded more than **Treasure, Whitebird,** and **Pomerelle** in the last four years of testing. Yield did not differ appreciably among the most productive varieties, but they differed in other characteristics. **Alpowa** is slightly taller, was the most weak strawed and prone to lodge but has excellent test weight. **WB Vanna** had the best straw strength and the lowest protein. **Centennial** and **Penawawa** had higher protein than **Alpowa** or **WB Vanna**.

Pomerelle, released primarily as a replacement for **Treasure**, has not yielded better than **Treasure** in western Idaho, but may be more resistant to

Table 1. 1996 Irrigated Soft White Spring Wheat Performance in the Treasure Valley.

Variety	Yield bu/acre	Protein %	Test Weight lb/bu	Height in	Lodging %
<i>Parma</i>					
Sunstar Promise	110	11.0	60.5	39	48
Alpowa	121	11.5	62.1	39	28
Penawawa	114	12.5	62.0	36	3
Treasure	110	11.6	60.2	37	38
Whitebird	116	11.6	62.2	39	31
Centennial	113	11.4	61.9	37	33
WB Vanna	109	11.6	60.0	39	30
Pomerelle	114	11.0	60.1	38	50
IDO488	118	11.0	62.9	36	50
IDO471	114	11.1	62.2	36	45
IDO474	114	11.5	61.6	38	29
WA7806	104	12.0	58.8	36	80
SDM405	119	10.9	62.0	37	15
SDM50030115	10.9	60.8	37	64	
ML042-409-52,5	121	11.8	60.2	40	48
LSD _{.10}	10	1.7	1.0	2	32
<i>Weiser</i>					
Sunstar Promise	101	10.6	59.5	39	83
Alpowa	121	11.3	60.7	39	63
Penawawa	112	11.4	60.8	37	70
Treasure	98	11.0	59.6	33	63
Whitebird	98	11.1	60.2	39	74
Centennial	108	11.8	60.5	38	38
WB Vanna	111	10.9	60.6	36	43
Pomerelle	105	10.3	60.1	35	18
IDO488	106	11.3	60.0	36	81
IDO471	129	10.7	60.7	36	53
IDO474	100	10.6	60.8	39	74
WA7806	99	11.2	59.7	39	91
LSD _{.10}	12	0.6	1.4	2	28
<i>Kuna</i>					
Sunstar Promise	125	8.5	61.9	34	23
Alpowa	126	9.5	63.7	34	5
Penawawa	126	10.7	63.6	32	0
Treasure	111	9.6	62.9	31	5
Whitebird	121	9.7	63.2	35	5
Centennial	125	8.9	63.4	33	3
WB Vanna	116	9.5	62.9	34	8
Pomerelle	120	9.8	62.6	34	8
IDO488	128	9.5	63.1	32	20
IDO471	137	8.8	63.4	31	20
IDO474	118	10.5	63.1	33	0
WA7806	119	9.0	61.7	35	23
LSD _{.10}	6	0.6	1.2	3	26

Table 2. Soft White Spring Wheat Performance for Selected Years.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>1993-96 (11 site years)</i>					
Alpowa	123	10.3	63.2	38	19
Centennial	120	10.5	62.7	36	11
Penawawa	120	10.9	62.2	36	12
Pomerelle	115	9.9	61.2	36	12
Treasure	114	10.1	61.5	36	16
Whitebird	115	10.2	62.9	37	15
WB Vanna	120	10.0	62.2	37	8
LSD _{.10} ¹	3.4	0.2	0.4	.6	6.6
<i>1995-96 (6 site years)</i>					
Alpowa	118	9.9	63.4	37	17
Centennial	114	9.9	62.7	36	13
IDO471	122	9.6	63.0	34	20
Penawawa	116	10.2	63.3	35	14
Pomerelle	111	9.3	61.3	36	15
Sunstar Promise	114	9.3	62.2	37	27
Treasure	108	9.7	62.1	35	20
Whitebird	110	9.7	63.1	37	18
WB Vanna	112	9.6	62.3	37	13
LSD _{.10}	4.4	0.3	0.5	.8	9
<i>1996 (3 sites)</i>					
Alpowa	123	10.8	62.2	37	32
Centennial	115	10.7	61.9	36	24
IDO471	127	10.2	62.1	34	39
IDO474	111	10.9	61.8	37	34
IDO488	117	10.6	62.0	35	50
Penawawa	117	11.5	62.1	35	24
Pomerelle	113	10.3	60.9	36	25
Sunstar Promise	112	10.0	60.6	37	51
Treasure	106	10.7	60.9	34	35
WA7806	107	10.7	60.1	37	65
WB Vanna	112	10.7	61.1	36	27
Whitebird	112	10.8	61.9	37	37
LSD _{.10}	6.3	0.6	0.8	0.6	19

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

Penawawa, has not yielded as well as **Penawawa**, but it does have better test weight and lower protein.

Sunstar Promise is a new variety from Sundermann Breeding. It is comparable in yield potential to the better yielding released varieties, but is weaker strawed, taller and more susceptible to lodging.

IDO471 is a composite of 16 lines from the Aberdeen breeding program. This composite is well adapted to western Idaho, as it yielded higher than all other entries but one over the last two years.

WA7806 is an advanced line from WSU that does not appear to be adapted to the irrigated Treasure Valley. It is more prone to lodge and has lower test weight than most other entries.

Advances in soft white spring wheat productivity have resulted primarily from increased straw strength and resistance to lodging. Varieties which lodge less should be easier to combine and result in harvested grain with less dockage.

Spring Barley

The Southwest Idaho Cooperative Extension Variety Performance trials have evaluated barley varieties and advanced lines since 1987. The trials evaluate primarily feed barley varieties. Spring barley variety performance over various time periods is given in Table 3.

Six Row Varieties

Six row barley varieties have traditionally yielded more than two row feed types. **Steptoe**, still the most commonly grown six row in western Idaho, has serious flaws for an irrigated feed barley. It's weak straw and susceptibility to lodging limit its yield potential under fertile conditions. The greater productivity of more recently released varieties is largely related to their greater resistance to lodging.

Several six row varieties perform as well or better than **Steptoe** in high yield environments. **WB Gustoe**, and **Maranna** both yielded more than **Steptoe** during the 1994-96 period. **WB Gustoe**, a Western Plant Breeders release, has better yield potential and is substantially shorter with better lodging resistance than **Steptoe**.

Maranna, an OSU release, yielded more than **Steptoe** and has better test weight, higher protein, stronger straw, and is shorter.

Colter, a six row from Aberdeen, has several advantages over **Steptoe** including good yield potential

lodging. **Whitebird**, released as a replacement for

and test weight. Though it tends to be slightly taller than **Steptoe** it has better straw strength and better lodging resistance. **Colter** is also earlier than **Steptoe**.

Steptoe has proved an excellent variety for less productive plantings. Late planted or subjected to less

lodging resistance. Test weight is comparable to **Gustoe** and **Steptoe** but lower than **Maranna** and **Colter**.

GS2379 is the first Germaines Seed barley that we have evaluated in the Treasure Valley for some time. It was as productive as all other six rows with the exception of **WB Nebula**. Like **Gustoe** and **Steptoe**, it has lower test weight than **Colter** and **Maranna**.

Two Row Varieties

Breeders have made great strides in providing two row barley for feed. The difference in yield between available six and two row varieties has narrowed considerably. Substantial gains have also been made in straw strength.

Baronesse, from Western Plant Breeders (originally from Germany), is now widely grown in the Pacific Northwest. **Baronesse** acreage in much of Washington is now greater than **Steptoe** because it yields more in those rainfed environments and has better feed quality. In the Treasure Valley, **Baronesse** yields better than **Lud**, our most commonly grown two row, but it does not yield higher than **Steptoe**.

Idagold, an Adolph Coors feed barley, has now been tested for three years in the Treasure Valley. Over this period **Idagold** yielded more, was seven inches shorter and lodged considerably less than **Baronesse** or **Lud**. **Idagold** is later than **Baronesse** and has lower test weight. **Idagold** yielded as well as the best six row types, and significantly better than **Steptoe**.

Idagold marks a turning point in the development of two row feed barley. Treasure Valley barley producers no longer have only the option of six row barley for maximizing yield and profitability. Producers can now enjoy the high yields typical of six row barley as well as the superior feed quality of a two row. This release should increase the competitiveness of barley producers.

Lud, an Agripro release, does not have the yield potential of **Baronesse**. But **Lud** has both better protein and test weight than **Baronesse** and **Idagold**.

Harrington and **AB1202** are two row malting barleys. They were comparable in yield to **Lud** and **Baronesse**. **AB1202** has the better straw strength of the two. Both of these varieties met the requirements for malting despite considerable lodging in some trials and very high temperatures during grain filling.

Table 3. Spring Barley Variety Performance in the Treasure Valley.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodging %
<i>1994-96 (9 site years)</i>					
<i>Six Rows</i>					
Colter	137		50.7	41	38
WB Gustoe	144		48.8	30	34
Maranna	146		50.4	34	19
Steptoe	132		48.9	41	71
<i>Two Rows</i>					
Baronesse	124		52.5	38	61
Lud	119		53.2	39	61
Idagold	141		51.3	31	31
LSD _{.10}	6		0.7	0.8	9
<i>1996 (3 sites)</i>					
<i>Six Rows</i>					
Colter	123		50.3	42	50
GS2379	126		47.8	30	37
WB Gustoe	131		47.8	32	46
Maranna	131		49.5	35	35
WB Nebula	147		48.0	34	31
Steptoe	127		48.3	42	88
<i>Two Rows</i>					
AB1202	103		50.3	39	58
Baronesse	96		50.7	38	78
Harrington	104		49.7	40	83
Idagold	119		49.8	32	38
Lud	104		51.7	41	79
LSD _{.10}	8.5		1.2	1.5	12

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

intensive management, **Steptoe** generally yields as well or better than many varieties released for high yielding environments.

WB Nebula is a new Western Plant Breeders release. In one year's limited testing over 3 sites WB Nebula out yielded the next highest entry by 16 bu/A or 12%. **WB Nebula** is a short variety with excellent

Table 4. Hard Red Spring Wheat Performance in the Treasure Valley.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
<i>1993-96 (11 site years)</i>					
Vandal	113	13.1	61.5	34	1
WB 936	123	12.2	62.5	33	2
Serra	120	11.5	62.5	35	18
LSD _{.10}	4	0.2	0.4	0.5	6
<i>1996 (3 sites)</i>					
Vandal	116	13.9	60.1	34	3
WB 936	126	12.9	61.4	34	6
Serra	119	12.3	61.1	35	43
IDO462	110	12.9	62.3	37	46
GS EXP1095	112	13.0	57.9	36	20
LSD _{.10}	8	0.7	0.5	1	--

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

Late Planted Wheat

Most spring wheat in the Treasure Valley is planted prior to April 1 to maximize production. Weather permitting, most of the Cooperative Extension Spring Performance Trials are also planted in March. Not all wheat can be planted early, and for a variety of reasons there is always some spring wheat planted well into April. Later plantings can affect the relative performance of varieties, but there is limited information on variety performance under these conditions.

A late planted Spring Wheat Performance trial was conducted at Parma in 1996. Results are shown in Table 4. The results for the most part mirror the performance of varieties earlier planted. **Alpowa** and **Penawawa** were among the most productive late planted varieties, just as they were with earlier plantings. **Treasure** and **Pomerelle** were less productive.

Centennial was an exception. Normally as productive as **Alpowa** and **Penawawa** with excellent test weight, **Centennial** in this late planting not only yielded less, it also had poor test weight.

The hard red **WB 936** and the durum **Cortez** yielded about as well as the better soft whites. This is not unusual. Our research suggests that the yield

Hard Red Spring Wheat

Hard red spring varieties in the Cooperative Extension nurseries are evaluated because of their higher prices and potential for greater returns to spring wheat producers.

WB 936 yields better than **Vandal**, has a test weight advantage, and matures earlier than **Vandal**. **Vandal**'s only advantage over **WB 936** is its protein, which is excellent. Both varieties have good straw strength.

Serra, an older California release, has excellent yield potential, but its protein is substantially lower than **WB 936** or **Vandal**.

Significant discounts can result with the hard red springs if protein is below 14%. The protein levels reported for the hard reds in these variety trials are low. The trials were not fertilized with N for maximum protein and quite often the off-station 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 varieties.

Table 5. Late planted (April 15) spring wheat performance, 1996.

Variety	Yield bu/A	Protein %	Test Weight lb/bu	Height in.	Lodged %
Alpowa	91	8.6	61.8	40	0
Centennial	83	8.9	57.9	36	0
Penawawa	89	9.2	61.3	38	0
Pomerelle	79	8.7	58.3	38	0
Sunstar Promise	91	8.5	59.5	39	0
Treasure	75	8.7	58.2	39	0
WB 936	87	10.4	58.8	36	0
Cortez	88	11.0	61.5	32	0
LSD _{.10}	6	0.7	2.3	2	--

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

advantage of soft white springs largely disappears with later plantings. We will continue to evaluate spring wheat under late planted conditions in future trials.

durums traditionally have not yielded as well as the more productive soft whites. The durums evaluated were shorter than the soft white and tended to lodge less.

Even if durums, with further testing, are not as productive as the soft whites, the percent price

Durum Wheat Prospects

Pendleton Flour Mills informs me that they will be writing durum wheat contracts for southern Idaho producers again this season. The mill uses over 2 million bushels of durum wheat annually, most of which is produced outside the PNW area.

The contract price quoted to me was \$5.00 per bushel at Pendleton. Assuming \$.35 per bushel for trucking, that gives a local price of \$4.65 per bushel. Portland soft white wheat prices by comparison have ranged from \$3.25 to \$3.50 a bushel locally for several weeks now and recent forward contracts for August delivery are only about \$2.94. The price advantage for durum at harvest using the forward contract price is over \$2.00 more per bushel.

Contract specifications include at least 13% protein, 85% hard amber vitreous kernels. They prefer 60 lb test weight and there is very little tolerance for sprout as indicated by falling number values less than 325. There is no tolerance for black tip, the discoloration of the germ end of the kernel.

Black tip and sprout are both increased when wheat lodges or is watered later than necessary for maximum production. Earlier planting promotes both higher yields and better test weight.

Durum wheat performance was measured in seven sites during the 1994-96 seasons. Results for varieties grown in all trials are given in Table 6. **WB Cortez** and **WB Kofa** were more productive than **WB 881**, the older quality standard. Protein percentage and the percentage of hard amber vitreous kernels did not differ among the varieties.

Over these sites, **WB Cortez** and **WB Kofa** yielded at least as well as the soft white and hard red spring varieties included. The results are surprising because

Table 6. Durum performance relative to hard red and soft white spring wheat, 1994-96.

Variety	Class	Yield bu/A	Protein %	Height in	Test Weight lb/bu	HVAK %	Lodged %
1994-96 (seven sites)							
Centennial	Soft White	114	9.9	36	62.7	--	13
Vandal	Hard Red	112	12.9	34	61.8	--	2
WB 881	Durum	112	12.6	33	63.0	89	7
WB Cortez	Durum	119	12.6	32	64.4	91	3
WB Kofa	Durum	117	12.5	33	63.4	92	6
LSD _{.10}		6	0.3	1	0.5		8

differential will normally exceed the percentage difference in productivity.

We've had no difficulty obtaining 85% hard and vitreous kernels with the varieties listed in Table 6. Protein values have averaged less than 13% because the trials have not been managed for hard red spring or durum production. Our experience suggests that 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 for hard red spring wheat (14%).

Economic Return

How do economic returns for durums and soft whites compare? Let's assume soft whites yield 90 bu/A and the durums only 80 bu/A. Assume also that the durums are \$20/A more expensive to produce than soft whites due to additional N management and seed costs. Additional freight costs for the durums are \$.35/bu. If we assume \$5.00/bu prices for durums delivered to Pendleton, the difference in economic returns for the two market classes are shown in Table 7.

The breakeven price for soft whites with \$5/bu durum prices is \$3.91. With lower soft white prices, and these assumptions, there's an economic advantage in favor of the durums. Prices higher than \$3.91 favor the soft whites.

Of course the assumptions on which the economic returns are based could be quite different. The difference in yields could be greater than 10 bu/A. Then again, there might not be any difference in the

production costs for the two market classes, depending on the residual N available at the beginning of the season.

Who should grow durum?

Careful nitrogen management is critical for meeting the 13% protein specification. Sprinkler injection of N provides the optimum flexibility of timing N

Table 7. Economic returns for soft white and durum wheat for different soft white prices.

Soft White Local Price \$/bu	Soft White Returns (\$/A)	Durum Returns (\$/A)	Return Difference (\$/A)	%
3.00	270	352	82	30
3.50	315	352	37	12
4.00	360	352	-8	-2
4.50	405	352	-53	-13
5.00	450	352	-98	-22
5.50	495	352	-143	-29

applications for maximizing grain protein.

Durum wheat production will entail the same nitrogen management as for hard red spring wheats. It involves a delayed N application if available N at the beginning of the season is not adequate for both yield and acceptable protein. Typically 40-60 lb/A of N are injected through the lines between heading and flowering.

If spring wheat can not be planted until mid April or later, durum wheats may be especially appropriate. Late planted soft whites are seldom more productive than durums or hard reds. With late plantings, spring wheat yield is considerably lower, protein is higher and test weight is lower.

The number to call at Pendleton Flour Mills for contract information is 503-276-6511. For seed the numbers are 541-963-

8815 (OR) or 208-678-2286 (ID).

377S Hard White Spring Wheat

As announced earlier, ProMar Select Wheat of Idaho, Inc. has successfully bid for the production and variety preserved marketing of the **377S** hard white spring variety. Variety preserved markets for this Idaho line have been identified with both domestic and foreign customers. The test milling and use of this wheat for noodles was well received by the Koreans last year.

Whereas the Idaho Wheat Commission handled the contracted acreage last year, ProMar will have that responsibility in the future. To produce and market **377S** you need to be a member of the ProMar Coop. Few western Idaho producers participated in the initial offering of ProMar shares when the coop was first organized last fall. Western Idaho producers may not have been fully aware of the opportunities available with this initial offering.

To help western Idaho producers determine whether production of **377S** is feasible for them we have evaluated the variety in the Cooperative Extension Variety Performance Trials since 1993. The results are shown in Table 8.

Over the four year period **377S** proved as productive as the soft white spring varieties evaluated in the same trials. **377S** normally is more productive than **Klasic**, another hard white, but the reverse was true in 1996. **377S** is a little weaker strawed than the soft whites and is more susceptible to lodging. **377S** has excellent test weight, considerably better than the soft

Table 8. Hard white and soft white spring wheat performance in the Treasure Valley. 1993-96, 13 site years.

Variety	Yield				Protein Ave.	Test Weight	Height	Lodging	
	1993	1994	1995	1996					
	-----bu/a-----				%	lb/bu	in	%	
<i>Hard Whites</i>									
377S	116	140	123	113	121	11.6	63.7	37	25
Klasic	105	133	116	126	119	11.9	63.7	29	1
<i>Soft Whites</i>									
Centennial	122	134	112	115	120	10.5	62.7	36	11
Treasure	117	127	110	106	114	10.1	61.5	36	16
Penawawa	118	137	114	117	120	10.9	62.2	36	12
LSD _{.10}	7	8	8	7	4	0.2	0.4	0.6	7

whites evaluated.

The results show that **377S** is well adapted to western Idaho and other areas in southern Idaho. Producers need not sacrifice production to participate in this new opportunity.

As for gaining membership in the Promar coop, that is an issue yet to be determined. The coop board of directors may provide an additional opportunity for nonmembers to participate in this new venture. Current membership in the coop is about 150. Membership is currently restricted to Idaho growers. Questions regarding membership should be directed to Steve Johnson, Administrator, Idaho Grain Producers Assn., (208-345-0706) or Vince Zortman (509-533-5167).

Barley Stripe Rust

Barley stripe rust was prevalent in the Treasure Valley in the 1996 season. Fortunately, it caused little economic loss as the infection levels were very light in the fields I examined. It also helped that the infection occurred later in the season.

We know the inoculum for the disease will probably be with us this coming season. Serious stripe rust occurred in the Willamette Valley and other areas in western Oregon and Washington. Prevailing westerly or northwesterly winds from the coast will likely bring inoculum to our area.

Since variety resistance is confined to a limited number of advanced lines, growers need to be especially vigilant.

Spring Soil Testing

Above normal rainfall this winter will likely move nitrate nitrogen deeper into the soil profile. Soil test nitrate in samples collected last fall may not accurately reflect the residual nitrate currently available, particularly in the first foot.

Wheat planted late that has now emerged has a limited root system and will not access N available at lower profile depths. This N will only be available when roots grow into the depths where the N has been moved.

Wheat N requirements are not very high during early growth stages, but tillering, or the development of new stems, can be reduced if the plant is starved for N.

Soil samples should be collected in late winter or early spring to best determine the availability of residual N. Our research suggests that the total requirement of highly productive wheat for N approaches about 250 lb per acre. This total includes the residual N measured to a depth of two feet, the N we can expect to mineralize following non-cereal crops (about 45 lb/A) other than legumes, and the balance that would be applied as fertilizer N.

Malting Barley

I mentioned in earlier issues that there were improved prospects for malting barley production in the Treasure Valley. Malting barley would be a welcome development for the Treasure Valley, offering another option for spring small grain producers. Malting barley typically is sold for about a \$1 a bushel more than feed barley.

I've heard no more about a new malting plant in Portland. But there continues to be interest among contracting companies in Treasure Valley production. Some contracts have already been negotiated. Now it appears there may be other opportunities for growing malting barley.

Adolph Coors will announce shortly the availability of seed for **Galena**, a two row barley acceptable for both feed and malting. Producers for the first time will have the opportunity to plant this variety for feed. There are no contracts to be written, but if good quality malting barley was in short supply, it's possible that Coors would consider the **Galena** production from western Idaho.

Galena is a moderately short, stiff strawed variety that is well adapted to western Idaho. We evaluated **Galena** in six trials over a three year period as part of the Cooperative Extension Performance trials (Table 9). **Galena** yielded as well as **Steptoe**, the most commonly grown barley in the Treasure Valley. It yielded higher than **Lud** and **Baronesse**, two rows occasionally grown in western Idaho, and did not differ significantly from **Idagold**, another Coors two row barley released for feed. **Galena** has excellent resistance to lodging as compared to **Steptoe**, **Lud**, and **Baronesse**. **Galena** test weight is lower than **Lud**, but appreciably better than the six rows evaluated.

Table 9. Galena malting barley agronomic performance in the Treasure Valley, 1994-96.

Variety	Test			
	Yield	Weight	Height	Lodged
Galena	140	52.5	34	19
Idagold	145	52.0	30	22
Baronesse	132	52.7	37	59
Lud	123	53.2	37	60
Steptoe	137	49.3	40	66
Gustoe	147	48.9	29	28
LSD _{.10}	7.6	0.7	1	13

Coors is also offering seed of **Moravian 14** for production. We have no information on the relative performance of this variety in western Idaho.

Western Idaho producers now have the option of producing malting barley that yields comparable to the feed types commonly grown. For information on seed of **Galena** or **Moravian 14** contact Bruce Waag at 208-278-3586.

Soil Fertility Class Offerings

Two soil fertility courses will be offered this winter, each for one unit of academic credit, 4 continuing education credits for the certified crop advisor (CCA) program, or simply for your personal enrichment. The classes begin February 11 and finish February 27.

“Principles of Soil Fertility 1”, will cover basic principles, essential nutrients, soil pH, ion exchange, nitrogen relationships in soils, and soils as an ecosystem.

“Principles of Soil Fertility 2” will cover phosphorus, potassium, sulfur, calcium, magnesium, and each of the micronutrients.

Each class will involve eight two hour sessions of instruction delivered locally. The classes will consist of a video of the courses as they are offered on the UI campus by Dr. Robert Mahler. However, each session will also include a local discussion session or presentation to relate the principles to our Treasure Valley production system and answer questions that you may have.

The classes can be taken concurrently. One will be offered in the morning, the other in the afternoon. The classes will be prerequisites for future offerings if comparable course work was not taken elsewhere. Costs for each class is about \$90.

If you are interested in either of the classes please call me at (722-6701 ext. 216 or select 0 to speak with the station operator) so that we can determine whether the numbers are sufficient for an offering in this area. If no one answers, please leave a message on ext. 216 indicating your interest in the class and a number where you can be reached.

Marketing Miscellaneous

Soft white wheat

Market prices for all wheat reached all time highs last May largely due to depleted hard red wheat stocks. Drought conditions reduced hard red winter wheat production in the southern plains. Weather conditions also reduced the quality of wheat produced in other areas.

Hard red prices increased as a result and soft white prices also increased. It's not unusual for better hard red prices to improve soft white prices, but the two markets aren't always as closely tied.

There was higher than normal wheat production in all countries (Australia, Europe, Canada, and Argentina), that we compete with in international markets. Our own carryover soft white wheat stocks are the highest in at least ten years. Over 80% of our PNW soft white wheat is exported.

Durum

USDA reports that durum plantings in the southwest and California are down 28% from 1996 as of December 1. The reduced planted acreage was apparently due in part to weather. Rain and wet conditions have precluded earlier and more productive plantings. Durum planting intentions in the Northern Plains were not clear.

Hard Red

Hard red winter and hard red spring stocks are low relative to soft whites as reflected by current price differences at Portland. For example, January 26 bushel prices were \$4.13 for soft whites, \$4.96 for hard red winter (13% protein), and \$5.02 for hard red spring wheat (14% protein). There was very little premium for higher protein in the hard red winters.

Wheat Protein in Southwest Idaho

The *Idaho Grain* magazine reported the Idaho Wheat Commission's protein survey in the winter issue. As I've suggested in earlier issues, wheat protein can be useful for indicating the effectiveness of our nitrogen management. High protein indicates excessive available nitrogen for the conditions during the season, and low protein suggests the opposite. Low protein indicates that wheat production was limited due to a shortage of available N.

Our research suggests that for the variety Stephens, the most commonly grown soft white winter wheat in western Idaho, that 9.5% protein represents a 15% loss of production due to inadequate nitrogen. Maximum production was more closely associated with protein closer to 10.5%. Our spring wheats tend to be higher in protein than our winter wheats.

The protein results for southwest Idaho are disturbing. Over a third (37%) of our wheat had less than 9.5% protein in the 1996 season. It suggests a third of our production was limited in yield by at least 15%. For the production involved, that's over 550,000 bushels

of wheat. At current prices, that's \$1.83 million spread among the producers involved.

At the other extreme, almost a third of producers (31%) marketed wheat with over 10.5% protein. It means that much of the wheat produced had excessive nitrogen available. This excessive nitrogen contributed to increased lodging, more difficult combining, higher dockage, wasted fertilizer, and in some cases lower yield, all of which reduced the financial returns to producers.

Hopefully the situation is not as incriminating as it seems. Weather conditions play a role in protein content. The higher the temperatures during grain filling, the higher the protein. Cooler than normal temperatures promote better than normal grain filling, and reduce protein.

Producers can't predict grain filling conditions and little can be done for influencing yield after flowering. Consequently, protein content varies from year to year as temperatures during grain filling vary.

The overall results suggest that significant income is lost to producers from either excessive or inadequate applied nitrogen. Spring soil testing and following research based fertilizer recommendations should be useful in fine tuning nitrogen management for maximum economic returns.

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