University of Idaho
Cooperative Extension System

The Cereal Sentinel

A newsletter for Treasure Valley cereal producers

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Reminders

Parma R & E Center Field Day	**July 7, 2006**
Malheur Station Field Day	**July 12, 2006**

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:

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Pest Management

Cereal Leaf Beetle

Cereal Leaf beetle (CLB) activity appears to be delayed considerably from the last two years. Adult flying and feeding were evident by April 24 in the spring oats at Parma, but not in the numbers we had in previous years. There didn't seem to be much activity after temperatures cooled off. With warmer temperatures we can expect activity and egg laying to increase. The cooler weather may cause a longer period of egg laying, and a delayed and a more extended period for larval emergence and feeding. Larvae had begun to emerge by May 10 and is now well underway.

Meanwhile, fall planted grain is progressing and CLB likely will not be as much an issue in wheat or barley now headed. This may preclude the need for control measures in these plantings. Spring plantings, particularly later plantings delayed by flooding or rainfall may be more at risk depending on how CLB populations develop locally.

Just a reminder, adult feeding occurs through the entire leaf in short lengths (1/4 to 1 inch) along a vein in a narrow strip (about 1mm wide) and is typically inconsequential in terms of damage to the plant. Larval feeding, the greater concern, is confined to the leaf surface and also occurs in strips along the vein.

Scouting is essential to determine if egg and or larvae populations are high enough to warrant control. The economic threshold is three larvae or eggs per plant before boot stage and one larvae per flag leaf after boot stage. If you suspect from CLB egg numbers that control will be necessary, make sure it is the larvae that you're treating rather than the adults. That means waiting for larvae emergence. Check the label in all cases.

We reported last year on efforts to introduce biological control agents for CLB. Ben Simko, Idaho Department of Agriculture (ISDA), released ***Anaphes flavipes***, a tiny egg parasitic wasp in spring 2004. Additional **Anaphes** were released in May 2005 and eggs were subsequently collected after the release. A low percentage of parasitized eggs were found in those collected in spring 2005.

While not a smashing, immediate success, it takes time for the agents to become established. After all, it's a pretty foreign environment to them. Eggs were collected on May 11, 2006 to assay for parasitism. The results of that assay are not available as yet. It will be the first indication here of the egg parasite over-wintering and parasitizing eggs from a previous year introduction.

On a brighter note, about 50% of the larvae collected in 2005 at Parma were parasitized with ***Tetrastichus julis***, the larval biocontrol agent released in previous years by Mike Cooper (ISDA). It appears to be established and providing some control.

Stripe Rust

From what the rust experts are saying we can expect rust to develop later than last year if it develops locally at all. It is present in the Columbia Basin, eastern WA, and Walla Walla, but then it's not unusual for it to be there and not be a problem for us.

We have not seen it locally yet on susceptible varieties. Most producers have very likely reduced their risks by avoiding varieties such as **Jubilee** that were susceptible to the prevalent races last year. If you do have susceptible varieties be sure and scout for rust early.

Hard Spring Wheat Nitrogen

Excessive N

Much higher prices for hard red spring (HRS) than for soft white wheat have led to increased plantings of HRS in western Idaho. With the increased HRS plantings have come questions related to N management.

Producing irrigated HRS wheat with acceptable protein is always an issue. Most recognize that more N is required to produce acceptable protein HRS than is required to simply maximize yield. In addition, late season applied N for protein enhancement is frequently critical.

There is a temptation to combine the N requirement for yield and the N requirement for protein enhancement together in a single application pre-plant or early in the season, to save application costs. This practice can be risky for production using conventional N fertilizers, and not always for reasons that are apparent.

We have measured the adverse effects on grain yield of excessive available N during early vegetative growth, in the absence of lodging and disease, with hard red winter wheat, soft white winter wheat, winter barley, and more recently in HRS wheat. All these studies were under irrigation.

We don't know just why yields are reduced with excessive N, when there is no lodging or exacerbated diseases or increased moisture stress. The wheat plant's physiological response to excessive N isn't a topic often addressed with research.

The yield loss is not always attributed to excessive N. In our studies, the loss has seldom been much higher than 5 to 15%, losses in good irrigated production that are easily attributed to other factors, differences in growing seasons for example.

Though we don't know why the yields decline with excessive N, we do measure them often enough. To avoid excessive N during vegetative growth, pre-plant soil testing is essential to determine the residual N.

Alternative N fertilizer

Where higher wheat protein is desired, it would be convenient to be able to make one pre-plant N application without incurring yield losses, and save the expenses of a separate application later. There may be a newer generation of N fertilizers that make this possible. Some of the results and major points of a related 2005 study were reported in the last newsletter. The results are more extensively reported here.

The study involved a comparison of slower release polymer–coated urea N (PCU) with conventional urea pre-plant applied for HRS wheat grown under furrow irrigation at Parma. Initial residual N measured 135 lb/A in the first foot. Both fertilizer N sources were broadcast pre-plant at rates of 120, 180, and 240 lb N/A with various combinations of urea and PCU also evaluated as shown in Table 1 with some of the results.

Yield was significantly higher with PCU than with conventional urea at the lowest and highest N rate. The highest rate of both N fertilizers reduced wheat yield from 11 to 13 bu/A, or 13-14%. There was no lodging in the trial despite a total of over 375 lb N per acre available in the first foot. This is a testimony to the straw strength of this new variety, Jerome, and its adaptability to irrigated systems.

The available N with the highest N rate may seem excessive to some. However, it is no more than we have measured on occasion following crops such as onions.

There was a stripe rust infection that did not appear to be worse in the higher N rates. Stripe rust may have limited the yield potential of the wheat in the trial. We did not notice any effect of N fertilizer treatments on seedling establishment or stand.

Protein increased with the higher rates of both N sources. But the protein concentration did not differ between pre-plant N fertilizers. However, with the differences in yield, the total N harvested with the grain was consistently higher with PCU (data not shown).

Delaying the application of 60 lb/A of the urea N until heading may have reduced excessive urea N effects. Delayed N certainly resulted in higher protein concentrations than the total N rate applied pre-plant.

We know it is more difficult to increase protein beyond 14% in HRS with additional N. Still, it is surprising that the protein increase with an additional 120 lb N/A caused no more protein increase in this trial than it did, especially with yield reduced from the higher N rate. Even if yield had not been reduced, the higher N rates were notably inefficient at increasing protein. Less than 5% of the higher N added beyond the 120 lb rate was used for protein enhancement.

Test weight was reduced at the highest N rate with both N fertilizers. Test weight is commonly reduced with higher N even without lodging. Plant height was unaffected by N rates or fertilizers (data not shown).

It is not clear why PCU was more productive. Available N was not a limiting factor for yield based on the protein concentration of the wheat produced with conventional urea. The protein in the lowest N rate (13.9%) was considerably higher than that normally associated with maximum HRS yield (12.5%). Since N

Table 1. HRS wheat response to pre-plant urea and polymer-coated urea. Parma, 2005.

	Pre-plant		Late		
Total N applied	Urea N	ESN N	Urea N	Yield	Protein
	----------lb/A---------			bu/A	%
120					
	120			84	13.9
		120		92	14.0
180					
	180			82	14.2
	120	60		82	14.3
	60	120		84	14.4
	0	180		87	14.4
	120		60	83	14.6
240					
	240			73	14.6
		240		83	14.6
	180		60	79	14.9
CV				8	1.9
$LSD_{.10}$				8	0.3

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

was not limiting, we can not conclude that PCU N was used more effectively.

The results are consistent with a response to excessive N. Faster N release from urea would increase available N initially during early growth and increase the effect of excessive N. Slower release N would reduce the N available initially to ameliorate excessive N effects.

We also can not rule out the effects of higher initial N on stripe rust severity although the affect was not obvious. Whatever the reason, there was a distinct advantage to PCU in this trial. The results are for only one year and the trial is being repeated at Parma in 2006.

The results are encouraging. Although protein did not differ for the two fertilizers, the wheat was better able to withstand higher N rates using a slow release PCU. That suggests some potential for single pre-plant applications that could serve to safely provide the N required for both yield and protein. PCU N fertilizers are more expensive than conventional urea and therefore would probably not comprise the total N application.

If the PCU continues to prove effective, the use of pre-plant slow release N will probably be more commonly used for HRS wheat in furrow irrigated or sprinkler systems that don't have the capability to inject soluble N during the season. Producing furrow irrigated wheat with acceptable protein has been particularly challenging.

The PCU in this study was ESN marketed by Agrium. Other PCU products may give similar results but have not been evaluated for our wheat production.

Hard Wheat Late Plantings

Several questions on nitrogen management on HRS wheat were received as the spring planting went forward. A question that came up in several calls during mid to late April was "Is it too late to plant spring wheat". Whereas earlier plantings are typically the most productive, for many, small grains were still a viable option.

Maturing late planted small grains is not the issue, but lower productivity is. We've planted small grains in mid May and could probably plant later and not worry about problems maturing the crop. But late plantings involve greater disease and insect pressure as well as very inhospitable summer temperatures. We can expect very limited tillering in late planted small grains.

Previous research suggests that yield potential declines roughly 5% for each week delay in planting from the earliest planting date. The problem this year was that some areas had rain soaked or flooded fields that producers could not get into with earlier plantings. Considering field access was delayed as much as six weeks for some, that translates into as much as a 30% loss in yield potential. Also, spring wheat yields aren't that great to begin with for many so the questions indicated some serious consideration of alternatives.

For those committed to a small grain planting, the choice seemed pretty clear. With HRS prices at 14% protein running $1.80 to $2.00 a bu higher than soft white wheat, there weren't many small grain alternatives with comparable income potential. Locally, soft white was being marketed at less than $3 a bu. The HRS premium represented a whopping 60 to 70% price advantage. That would compensate for a fair amount of lost yield potential.

An additional consideration was that soft whites don't enjoy the same yield advantage over hard reds that they do in earlier plantings. Normally 5% more productive in earlier plantings, they may have little if any advantage in later plantings.

Of course, if producers weren't committed to a small grain planting, there were several options involving other crops that would be more productive. Some no doubt opted for beans, corn, or other crops.

Late Nitrogen

One of the questions is "How late can the late season N be added to increase protein". The question was asked earlier than usual this year because several acres of HRS were fall planted, and these fields are much further along than spring planted HRS.

Several research studies suggest that late season N applied for protein enhancement can be applied as late as flowering. Some reports suggest that flowering or later applications are the most effective, assuming the N is applied as a foliar or is otherwise accessible to the plant. Applying the late N after physiologic maturity is clearly too late to be beneficial.

While several studies make comparisons of pre-anthesis (boot or heading) to anthesis (flowering) or post-anthesis applications, there are fewer studies that concentrate on late N applied during successive grain filling stages. Since many reports indicate that post-anthesis N is used effectively for protein enhancement, we assume there is a fairly wide window after flowering and during grain fill to make the applications. But I have not evaluated late N applied beyond flowering in our Treasure Valley studies.

Hard White Wheat

There is a limited acreage of hard white spring wheat grown in the Treasure Valley, primarily because of limited grower experience with the market class and limited marketing opportunities. No local elevators are handling the market class to my knowledge in southwest Idaho, with the possible exception of eastern Elmore or Owyhee County. There is contracting for hard white wheat in the Magic Valley with prices based on a premium over hard red winter prices.

Exportable hard white wheat quantities would allow us to compete more effectively for foreign markets. But until local opportunities to segregate, store, and market this class are available, the production is not likely to occur in western Idaho.

The same acceptable protein issue exists for hard white as for hard red wheat, except that somewhat lower protein is acceptable. In both cases though the acceptable protein concentration is 1.0 to 1.5% protein higher than the protein necessary to maximize production. The principles involved in N management for protein enhancement in hard white wheat are no different than they are for hard red wheat. In fact, our research suggests that hard white wheat will respond no differently to late season N than hard red wheat.

Protein Publication

For a more detailed discussion of the issues and principles of managing nitrogen for increasing hard wheat protein, readers may be interested in "**Nitrogen Management for Hard Wheat Protein Enhancement,** PNW Extension Bulletin 578. This publication is available on-line for viewing or downloading at http://info.ag.uidaho.edu/PDF/PNW/PNW0578.pdf.

Hard copies can be ordered from Ag Publications at the same website or call 208-885-7982.

Cereal Forages

Wheat vs triticale

Triticale is frequently the winter cereal in double crop forage systems commonly used by dairies to increase overall forage production and P removal. Maximizing P removal enables dairies to use higher manuring rates under the current nutrient management standard.

Wheat can also be used as the winter cereal but normally grows more slowly than triticale, produces less forage, and takes up less P by the time the forage is removed for planting subsequent silage corn. The advantage with wheat is that since it's less mature, it is typically a higher quality forage. The results for a three year comparison of winter triticale and winter wheat are shown in Table 2. Winter wheat averaged almost three percent higher protein, over 5% lower ADF, and almost 7% lower NDF.

Table 2. Winter wheat and triticale forage quality averaged over three years (1999-01) at Parma.

Winter Cereal	Forage Protein	Forage ADF	Forage NDF
	----------------	%	---------------
Triticale	13.5	34.9	60.2
Wheat	16.6	29.3	53.4

Wheat Plant P Contents

Our research at Parma indicated that winter forages grown in the same treated plots for three years declined in P concentrations as soil test P declined. This has led to further study of the P concentrations necessary for vegetative stage forage production.

There are limited reports in the PNW on whole plant wheat or triticale concentrations at the boot stage necessary for maximum yield of grain or forage. It is very likely that the concentrations necessary for maximizing forage are different than for the production of grain.

Vegetative growth occurs during the coldest part of the season and colder soil temperatures are known to reduce root activity and P diffusion to roots. When soil temperatures warm, soil P becomes more available, and wheat and other small grains take up P more rapidly, and it is not as limiting to growth.

Relative yield differences, under variable P conditions, are generally considerably greater during earlier vegetative growth than at later growth stages. In other words, it is not unusual to see increased early season vegetative growth that does not translate into the same relative increases in grain yield.

This can be seen in recent measurements of wheat forage and grain yield at Parma. Plots treated two years previous with manure or compost left a considerable range in soil test P (10-65ppm) by fall 2004. Both winter wheat and triticale were grown in these plots to measure their forage response to available P as compared to their grain yield response. The percentage of maximum wheat yield obtained with the lowest soil test P was only 54% for forage yield at mid-stem extension, 97% for forage yield at flowering, and 96% of the maximum grain yield.

Wheat forage production and P contents from this study provide some insights into the dynamics of P in

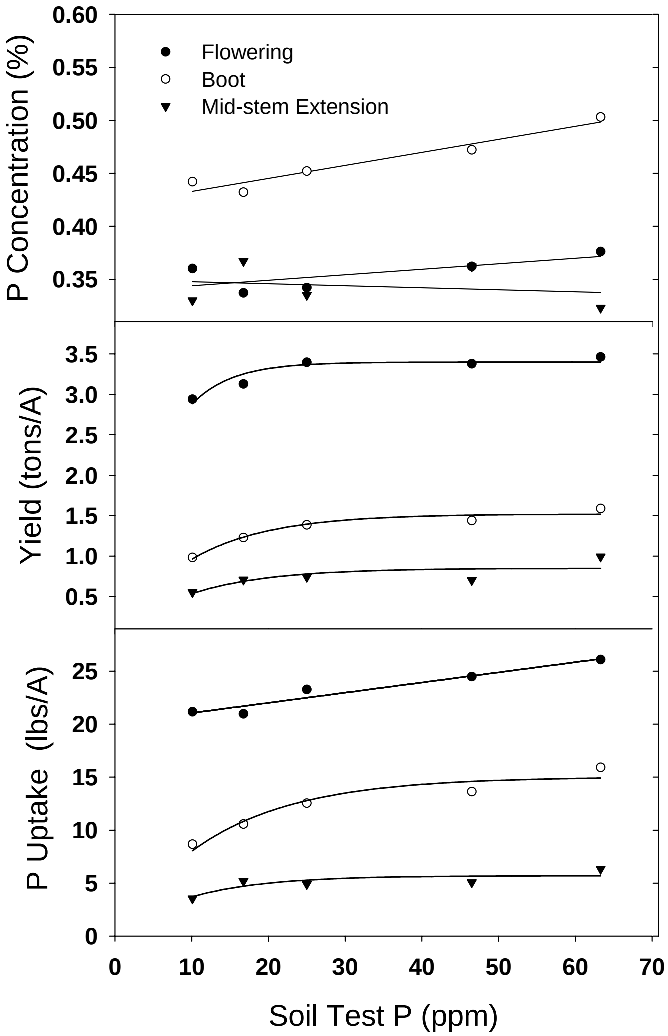

Figure 1. Wheat forage P concentration, yield, and P uptake as affected by growth stage and residual P.

wheat (and triticale) during late vegetative growth. Wheat forage P concentrations, forage dry matter production, and forage P accumulation or uptake as related to soil test P are shown in Figure 1 for three harvest growth stages. Forage P concentrations increased from mid stem extension to the boot stage, but then decreased at flowering.

The whole plant (forage) P concentrations have a number of implications. It is not feasible to assume a constant forage P concentration during vegetative growth for purposes of estimating harvested P for nutrient management planning. That makes it essential to analyze forages for the most accurate harvested P estimates.

Rapidly changing P concentrations also make it difficult to use forage P concentrations for diagnosing P deficiencies. Critical values of forage P would need to be associated with discreet growth stages. Interpolating between critical P concentrations at different stages is problematic when they don't consistently increase or decline with plant development.

Other than the boot stage, forage P concentrations were poorly correlated to soil P. No wonder tissue testing for small grains during vegetative growth is no more popular than it is. Forage P concentrations are a poor index of available P. The reason is that increased biomass tends to dilute increased P taken up by the plant under higher P conditions.

Wheat forage production increased with higher available P at each harvest, increasing 44% at mid-stem extension, 61% at the boot stage, and 18% at flowering. Soil test P required to maximize production was about 25 ppm. Critical soil test P for maximizing grain yield is typically less than 15 ppm. Wheat yield in this trial was not significantly increased with higher P.

Forage phosphorus uptake doubled from mid stem extension to boot stage and quadrupled at flowering. Whereas the critical soil test P for yield was essentially the same for forage production at all three growth stages, the soil test P associated with maximum P uptake progressively increased with each successive harvest. This reflects the capacity of wheat and other small grains to accumulate considerably more P than they need for maximizing either forage or grain production.

Triticale Forage Nitrogen

We have found based on numerous trials that maximum wheat grain yield is obtained in two of three years with late winter or early spring top-dressed N as compared with fall pre-plant incorporated N. Historically, the lower efficiency of early fall N in irrigated winter wheat was attributed in part to excessive vegetative growth. The extra growth did not contribute to greater grain yield but did leave more residue to manage after harvest. The greater vegetative biomass with fall applied N may not be effective for producing grain, but it could be quite useful as increased forage production if that were the objective.

Beginning in 2006 we measured the triticale forage biomass at boot stage from different N rates and timing (fall pre-plant vs spring top-dress). The results are shown in Figure 2. Forage production was higher with higher available P and was also highest with adequate N.

Adequate N in this trial was 120 lb/A, additional N providing no yield advantage. Forage yield was consistently greater with fall pre-plant N than with spring top-dressed N. Apparently, available N in the fall is critical for maximizing forage production, much more so than the production of grain. We can't rule out volatile N losses from the urea N top-dressed in March, despite relatively cool temperatures at the time. Very slight showers measuring only 0.01 and 0.03 inches occurred within days of the top-dress. These light showers would not be sufficient to incorporate top-dressed urea N and could exacerbate volatile losses of N. Forage quality has yet to be determined.

The results are for only one year, but confirm our understanding of N timing effects on winter cereal biomass.

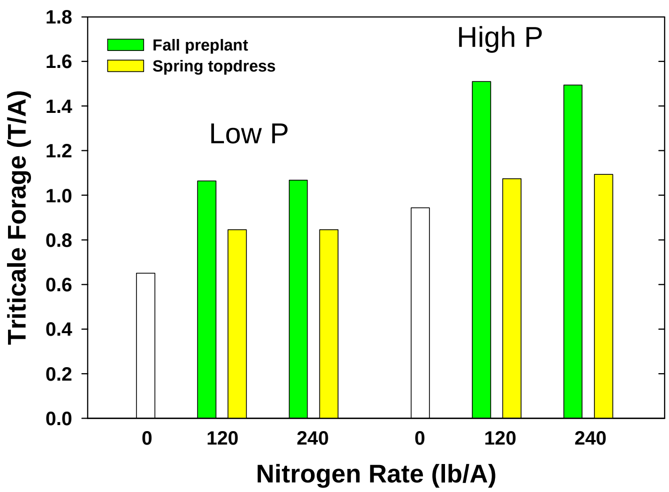

Figure 2. Triticale boot stage forage yield as affected by nitrogen rate and timing. Parma, 2006.

Low-Phytate Barley

Phytate is the primary storage form of P in seed. It is not used effectively by non-ruminants and is excreted in the manure. In some areas the amount of manure applied is limited by its P content. Feeding normal barley or other feed grains with normal amounts of phytate to non-ruminants can limit the amount of manure applied to fields. Manure must then be applied further and further away at increased costs.

Poor feed P efficiency also increases the P supplemented in the ration which increases feeding costs. Finally, higher amounts of applied manure P increase the risk of enriching soils with P and increasing the potential for P to runoff into surface waters where it can cause nuisance algal growth.

Low phytate barley, as the name suggests, has a lower percentage of the phytate in the grain than normal barley grain, without reducing the total amount of seed P. Developed recently by USDA-ARS geneticists at Aberdeen, it is used much more efficiently by non-ruminants resulting in less excreted P. Low phytate barley has potential for reducing manure P loading, the risk of P runoff, and reducing P supplement feeding and manuring costs.

Low phytate barley is new, and while we assume it has agronomic requirements similar to normal barley, we don't know that for a fact. For example, does phytate content change its response to available P in soil? Or does available P affect gene expression responsible for phytate content?

We have begun to address these questions with support from the Idaho Barley Commission. Collaborators include Juliet Windes and Stephen Guy. Four spring varieties were grown at Parma in 2005 under a range of available P conditions. Two of the barleys, Colter (a six-row) and Baronesse (a two-row) are normal phytate spring feed barleys. The low phytate barleys, 00AB1550 (six-row with Colter parentage) and 01AH451H (two-row with Baronesse parentage) are similar to their parents in most respects except are low phytate. 01AH451H is also different from Baronesse in that it is hulless.

Some of the agronomic characteristics of these barleys averaged over available P treatments are shown in Table 3. Each of the varieties were planted using the same number of seeds per linear foot of row. In both the six and two-rows, the low phytate lines resulted in lower plant counts than their normal parents. This has also been observed in low-phytate soybeans.

Table 3. Stand counts, grain yield, and test weight of normal and low phytate barley varieties.

Variety	Phytate	Stand counts[1]	Grain Yield	Test Wt
			bu/A	lb/bu
Baronesse	normal	75.3a[2]	159a	53.2b
01AH451H	low	59.0bc	132c	57.4a
Colter	normal	62.0b	142b	49.8c
00AB1550	low	57.8c	147b	50.0c

[1]Plants per 2.9 ft^2
[2]Means followed by the same letter do not differ significantly.

Baronesse was the most productive of all varieties and considerably more productive than its low phytate offspring. But hulless varieties as a rule are 13 to 17% less productive than hulled varieties. The low phytate gene itself does not render a variety less productive. The low phytate 00AB1550 was at least as productive as its parent Colter.

Test weight was highest in 01AH451H as expected, since hulless barley is generally higher in test weight than hulled types. Likewise test weight was higher in the two-row Baronesse than the six-row Colter or 00AB1550.

Phosphorus increased plant height, lodging, and yield of all varieties (Table 4). Two and six-row varieties differed slightly in their test weight response to P. Whereas six-row barley tended to decrease in test weight with higher P, two-row Baronesse barley tended to increase (data not shown). The low phytate gene did not affect the agronomic response to P. Barley harvested from the trial will be analyzed for total P and the phytate and inorganic P contents.

Table 4. Phosphorus affects on barley.

P added	Height	Lodging	Test Weight	Grain Yield
lb/A			lb/bu	bu/A
0	32.9a[1]	0a	52.4a	99a
75	39.0b	5a	52.6a	150b
150	40.1c	5a	52.7a	167c
225	39.4bc	12b	52.6a	164c

[1]Means followed by the same letter do not differ significantly.

Marketing low phytate barley in southern Idaho could be challenging. Whereas southern Idaho has large ruminant dairy and beef numbers, those would not benefit from low phytate barley as much as the few poultry and swine operations. The aquaculture industry also could benefit.

Low phytate barley may have export potential, but one concern is test weight. Low phytate lines have had lower test weight than their parents in other trials even if they did not in this trial. Given the tendency of P to reduce six-row barley test weight, soils enriched with P may be less suitable for six-row low phytate barley production. The study is being repeated in 2006.

One means to improve barley test weight may be to find genotypes cold tolerant enough to be fall planted. We have fall planted barley previously with mixed success. In two of four years we have encountered significant stand loss. Despite significant winterkill, fall planted spring barley has been surprisingly productive.

For 2005, 00AB1550, the six-row low phytate spring was both fall and spring planted under variable P conditions at Parma. Some results are shown in Table 5.

Despite significant winterkill, the fall planting was 13 bu/A more productive than a spring planting. Test weight averaged 2 lb/bu higher, plumps 10% higher, and thins lower with the fall planting. Lodging occurred in both plantings and did not differ by planting date (77 vs 79). Lodging likely reduced yield in this trial and lowered test weight. Higher available P increased yield in this trial but it did not affect the yield response to planting date.

For improved test weight, planting dates are probably more influential than most other practices we can employ. The fall planting resulted in heading that occurred four days earlier than with spring planting, yet the two plantings matured at about the same time. Better test weight and plumpness, not to mention yield, likely resulted from longer and more complete grain filling. The trial is currently underway for the 2006 season.

Table 5. Affects of fall vs spring planting a spring six row low-phytate barley. Parma, 2005.

Planting	Grain Yield	Test Weight	Plumps	Thins
	bu/A	lb/bu	--------%-------	
Fall	147	49.2	91	1.2
Spring	134	47.2	81	2.8

Miscellaneous

Wheat Breeding Program Change

Many may know by now that the UI Wheat Breeding program at Aberdeen has lost Ed Souza who has taken a Research Leader position with the USDA-ARS in Ohio. While we will miss Ed's foresight and direction in wheat breeding, we wish Ed the best in his new position.

Ed was responsible for several varieties released for Idaho irrigated and dryland production. Those of greatest importance to southwest Idaho were the soft white springs. In the Treasure Valley we can be particularly thankful for his release of **Alturas**, a soft white spring wheat that has been an improvement in production over **Penawawa**, the most commonly grown soft white spring in the area. While **Penawawa** has good yield potential, it is not well received by many exporters due to its poor milling and baking quality. **Alturas** has better yield potential and is recognized for its much better milling and baking quality. **Alturas** was one of the few soft white springs that was resistant to the stripe rust prevalent in 2005.

Ed released a number of varieties in other market classes: hard red winter and spring, hard white winter and spring. The latter were some of the first releases in the PNW. But his focus on spring soft whites is what best served the Treasure Valley.

I'm pleased to report that the UI Department of Plant, Soil, and Entomological Sciences has recognized the importance of filling this position and continuing the program. That is no mean accomplishment these days what with so many positions vacant and College of Agriculture and Life Sciences program resources declining. The process has begun for filling the position.

In the meanwhile, the program will be overseen by Robert Zemetra, the soft white wheat breeder in Moscow. It was the collaboration of Ed and Robert that led to the release of **Brundage,** the soft white winter wheat that is widely planted in irrigated systems in southern Idaho.

Filling faculty positions is a slow process and Ed's position may not be filled before the next growing season. But at least the process has begun.

Treasure Valley Renewable Resources

Recent information from **Treasure Valley Renewable Resources (TVRR)**, the grain fractionation/ethanol enterprise at Ontario, indicated that they are moving along on their facility planning. Financing arrangements are in the final stages and groundbreaking is scheduled this spring. Estimated construction duration is 16 months.

Engineering for the site is also moving along with earth moving plans to be finished by the time the rail spur construction begins. Bids have been released for the rail spur construction. Ground water monitoring to document the initial groundwater quality is underway.

Recent information from the **Idaho Barley Commission** indicated that contracting of barley and wheat for the facility would begin in fall 2006. Estimated needs for barley are 5-8 million bushels and 3 to 5 million bushels of wheat. No corn initially.

To put into perspective, assuming barley and wheat yields of 120 bu/A, the acreage estimates for barley range from about 42,000 to 66,000 acres and the wheat acreage would range from 25,000 to 42,000. Total western Idaho barley acreage in 2004 was 19,000 and wheat acreage was 76,000. These do not include the production capacity in Malheur Co OR.

The fractionated higher value products include beta-glucan from barley, concentrated protein for the aquaculture industry, and food grade starch. Intended ethanol production from the residual has been revised upward to 40-50 million gallons from earlier estimates of 15 million.

It is early yet and there is no word on contract pricing. TVRR has indicated this past year that they would likely pay a premium for higher protein grain. That would be an interesting development for barley. As far as I know few barley feeders source their feed barley based on protein, and high protein in malting barley is typically undesirable.

Agronomic practices, particularly nitrogen management, could differ for high protein barley. Similar practices used for increasing hard wheat protein would likely work for barley, though less research information is available for barley. Current research at the Parma and Malheur Stations is designed to address this need.

Waxy barley and wheat are the desired types. So far only spring varieties are available. Eventually more productive winter varieties would serve area producers best. Barley varieties to be contracted are based on variety performance trials at the Parma R & E Center.

Newsletter Mailing List Update

We are losing the facilities at the Caldwell R & E Center used for the ***Cereal Sentinel*** printing. We know a commercial printing will be more costly and our resources are limited.

While we don't wish to deny the newsletter to anyone interested in the information, we can't afford to provide it to those who aren't. If you have found the newsletter of value and wish to continue receiving it, we need you to confirm your interest.

To continue receiving the ***Cereal Sentinel*** simply verify your return address on the post card attached to the newsletter, provide your correct address if the address on the return label is wrong, and put the pre-postage paid card in the mail. If we don't receive your card by the next newsletter mailing this will be the last issue you receive.

Acknowledgement

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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 bradb@uidaho.edu. The advantage for us? We don't need to produce a hard copy and put it in the mail to you. If you have suggestions for the website send them to me at bradb@uidaho.edu.

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