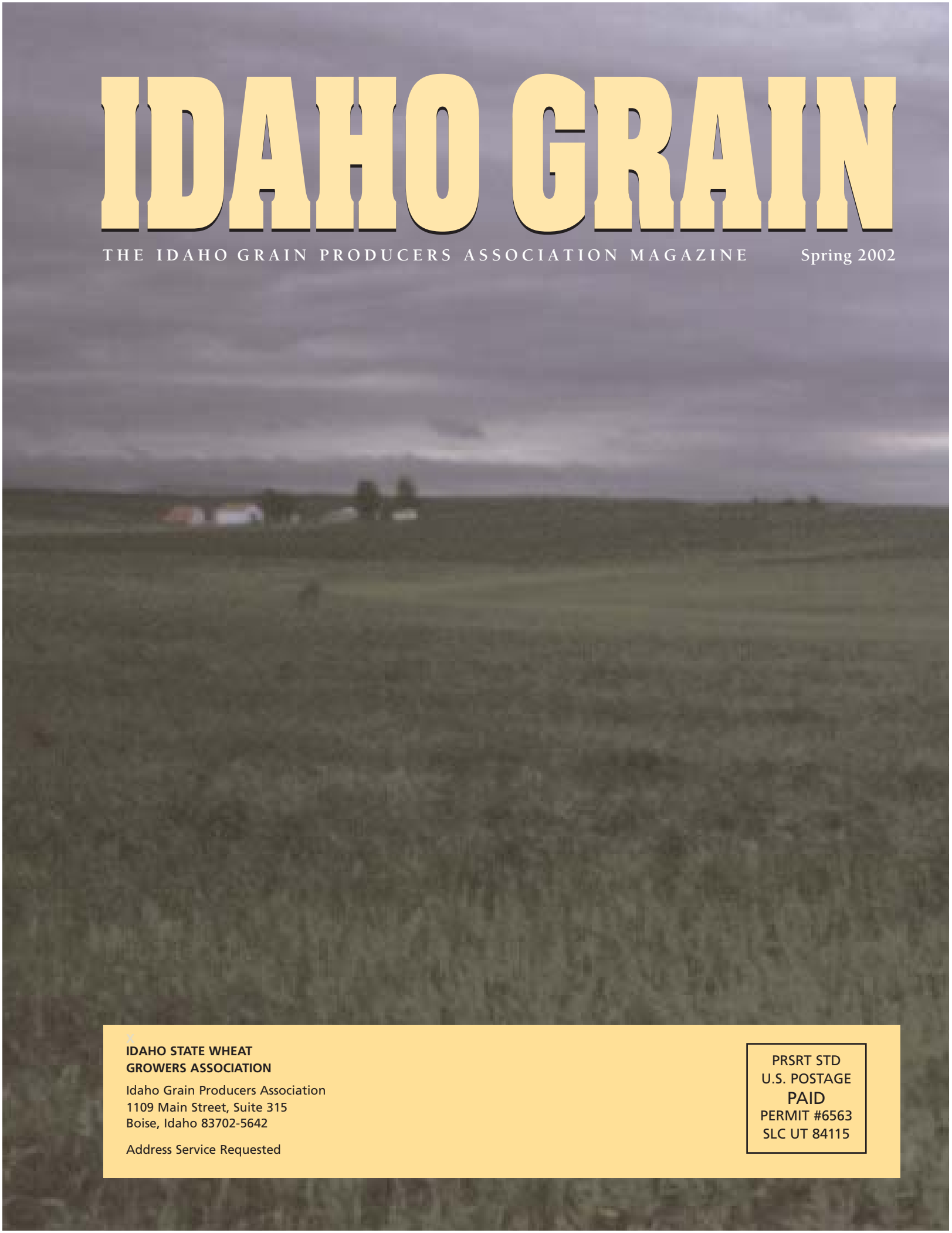

IDAHO GRAIN

THE IDAHO GRAIN PRODUCERS ASSOCIATION MAGAZINE Spring 2002

IDAHO STATE WHEAT GROWERS ASSOCIATION

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WHEAT BARLEY BARLEY & WHEAT

IDAHO GRAIN PRODUCERS ASSOCIATION

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BY ERIC ODBERG, IGPA PRESIDENT

A Call For Unity

As the newly installed President of the Idaho Grain Producers Association (IGPA), I would like to thank my predecessor, Duane Grant, for his dedication and hard work on behalf of Idaho's wheat and barley growers. Among his many accomplishments, Duane helped put more money into growers' pockets through research, and by bringing new technology and business to Idaho. Working to increase dollars for our producers is a goal I share as President of the IGPA.

Another of my primary goals as President will be to bring together commodity groups within the state of Idaho and nationally to speak as one voice for agriculture. Agriculture is not the dominant economic and lobbying force that it once was, and if we do not unify our position, government support will likely be reduced and government regulation increased. Our economic viability will be threatened, and life as we know it will cease to exist.

One example of the negative impact created by lack of unity occurred earlier this fall. About one half of the major commodity groups (National Association of Wheat Growers and National Barley were not among them), signed on to a letter written to Senate Majority Leader Tom Daschle requesting a delay on Farm Bill action in the Senate. This letter was in response to a letter sent out by the Bush Administration criticizing the House Farm Bill as too expensive, a threat to trade, and requesting more time to examine farm policy. Whether or not you agree with the letter is not relevant; the letter to Senator Daschle did more damage than good, because it showed that the agricultural industry could easily be picked apart.

The time for unity is now. American agriculture is under pressure from all angles, chief among them:

- *The pot of money is shrinking*. The budget surplus is rapidly dwindling, the economy is in a recession, and the country is at war.
- *There are more players.* More commodity groups are asking for support.
- *Public and Congressional support is shifting*. Consumers want something in return for their tax dollars; cheap food is no longer good enough.

Thankfully, in Idaho, we are already making progress to come together as a unified industry. The Idaho Grain Producers Association is part of a group called Food Producers —an organization which includes all the commodity associations in the state and meets regularly throughout the year. Food Producers brings state issues affecting agriculture to the table, and if there is 80% agreement on an issue, the group lobbies for the cause. IGPA, along with the Farm Bureau, has also taken the lead in forming the Agricultural and Natural Resource and Industry Political Action Committee (ANRIPAC), which brings an even wider range of groups together within the state.

We should have a new Farm Bill by the spring of 2002, and it will probably look nothing like the one we have been working on for the last three years. While no commodity group will be completely satisfied with the Bill—some will fare better than others—I hope the wheat and barley producers will come out on top

Once the new Farm Bill is in place, we will need to look ahead to the next Farm Bill, and what we can do to ensure that wheat and barley growers are well supported. We need to work towards getting 80% agreement between commodity groups, not 50%. As President of the Idaho Grain Producers Association, I will work on building a broader coalition of commodity groups to create one voice for American agriculture.

Editor's Note

BY STEVE JOHNSON

It's Time To Thank Your Leaders

As I was recapping the activities of the Idaho Grain Producers Association (IGPA) this past year and the amount of time your IGPA volunteers have spent on your behalf, both here in Idaho and at the national level, I concluded it was time to let every wheat and barley grower in Idaho know about the extraordinary amount of time and effort IGPA's volunteers have put into helping your industry. Your IGPA volunteers have spent countless hours working issues at both the state and national level. Additionally, we need to acknowledge the time and effort of volunteers from the National Association of Wheat Growers (NAWG) and the National Barley Growers Association (NBGA). The development of farm policy doesn't just happen, it is driven by dedicated volunteers like the officers and board members of the IGPA.

Starting here at home with the IGPA executive board, each officer has contributed a considerable amount of personal time to help formulate IGPA policy, and then carry Idaho grain policy to our national organizations, to the state legislature, to the Idaho congressional delegation, or to the entire Congress in Washington D.C.. In January of 2001, then IGPA President (now Past President) Duane Grant and Vice President (now President) Eric Odberg, attended the NAWG national convention to represent Idaho on the NAWG board and finalize wheat grower policy for the 2002 farm bill debate. In March, IGPA Past President Evan Hayes and IGPA Sec/ Tres Gordon Gallup attended the NBGA spring board meeting to finalize barley grower policy. Once these meetings were over, the real work began, as those policies had to be conveyed to Congress.

During January, February, and March, IGPA executive board members and several committee members were also making regular trips to Boise to work on legislation under consideration before the Idaho legislature. Repeal of the personal property tax on farm machinery and truck registration fees were the two major issues. Evan Hayes, Twain Hayden, and Past President Duane Grant were weekly visitors to the Idaho Capitol while working on these bills. IGPA Legislative Chairman Dean Stevenson volunteered for several days before and during the session while working on a solution for the minimum wage for farm workers.

In mid March, the entire executive board returned to Washington D.C. with a full three-day schedule of visits on Capitol Hill as they worked on the farm bill and other issues with NAWG. In May, Past President Duane Grant was on the governor's trade mission to Mexico where he helped bring a Mexican malting company to Idaho; a company that will soon be building a new malt plant in Idaho Falls and then will begin buying Idaho barley to malt. In June, Evan Hayes and Gordon Gallup were back in Washington D.C., visiting with members of the U.S. House of Representatives on barley issues that were being debated in the new farm bill. One of IGPA's Executive Board members was in Washington D.C. once-a-month from July through November to work on issues important to IGPA.

Your national officers have also been busy this past year. At least one NAWG officer or a farm bill committee member, has been in Washington D.C. every week from March thru mid December, working on the farm bill and other wheat grower issues. NBGA officers and committee members have also worked overtime, making regular visits to Washington D.C..

In summary, this is only a partial list of activities your IGPA and national representatives have taken on to represent you. I hope you will agree that the effort is truly an extraordinary one. They have taken time away from their family and their farming operation to work on your behalf. Your Idaho Grain Producers Association is a strong and effective organization because of these dedicated volunteers. If you get a chance call one of the IGPA officers or board members who served you this past year and say thanks. Or better yet, include a note of thanks when you pay your membership. These people continue to go the extra mile for your benefit.

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Idaho Grain Producers Association Issues

GENESEE GRAIN GROWER TO LEAD IDAHO GRAIN PRODUCERS ASSOCIATION

Eric Odberg, a Genesee, Idaho grain grower, was elected President of the Idaho Grain Producers Association (IGPA) during the 45th Annual IGPA Convention. Eric, a fourth generation Idaho farmer, and his wife Malia, have one son Ethan. The couple raises wheat, barley, lentils, and garbanzo beans on 2,100 dryland acres in Latah county. The Odberg family has a strong history of leadership in the Idaho grain industry: Eric's father Ellis Odberg served as President of the Idaho State Wheat Growers Association (now IGPA) in 1967, making them the first father and son pair to preside over the statewide association.

During the association's annual banquet, Odberg told IGPA members he will represent all grain producers in Idaho the very best he can. "My primary goal will be to get the new Farm Bill completed this year in the form that IGPA has advocated for the past three years. I also want to continue IGPA's efforts to bring Idaho agriculture groups closer together," said Odberg. He then thanked outgoing President Duane Grant for his efforts during the past year in helping pave the way for passage of the 2002 Farm Bill.

Odberg cited tax relief as another issue he will work on in 2002. "At the state level I want to focus on reducing the tax burden on agricultural lands," Odberg said, adding that at the federal level he wants Congress to implement investment tax credits. Conservation is also on the new IGPA President's agenda. "I believe that conservation payments, paid directly to farmers for conservation practices, is the best way to improve our environment. I want to maximize federal money for conservation practices, while making sure that the money for conservation gets into the hands of growers with minimal administration costs," Odberg concluded.

President Duane Grant passes the gavel to Eric Odberg, President-elect for 2002.

Other grain producers elected to lead the association in 2002 were Vice President Gordon Gallup (Ririe); Secretary/Treasurer Tom Zenner (Craigmont); and Ray Buttars (Weston), who was elected as the new member of the IGPA executive board. Duane Grant (Rupert) will serve as Past President.

The Idaho Grain Producers Association is the state's only voluntary membership organization whose sole responsibility is to protect and advocate for Idaho's wheat and barley growers.

IGPA PRESIDENT REVIEWS IGPA'S YEAR

IGPA President Duane Grant opened the IGPA 2001 convention with a review of the year's activities, emphasizing that IGPA was active on a number of fronts in 2001 that will pay off for the entire membership.

The IGPA:

- Secured another FSA supplemental (Lost Market Payment) for Idaho growers.
- Played a key role in getting the Idaho legislature to remove personal property tax from farm machinery.
- Worked on the 2002 Farm Bill for both the National Association of Wheat Growers and the National Barley Growers Association.
- Testified before Congressional hearings (Duane Grant on the Farm Bill and Evan Hayes on new diesel fuel regulations).
- Protected $5 million of Idaho wheat and barley growers' money in the Commodity Indemnity Fund.
- Led the legislative effort to reduce farm truck registration costs by adding more categories to the truck registration law.

Pictures left to right:

Jake Putnam and Steve Ritter receive their IGPA Media award from ISDA Director Pat Takasugi.

Donna Suchen accepts the IGPA Lifetime Achievment award for her husband Don Suchan.

Gale Harding receives the IGPA Excellence in Extension Award from ISDA Director Pat Takasugi.

IGPA convention staff Becky Rozier, Cheryl Shroll, and Sue Megran prepare for the IGPA Scholarship auction.

IGPA RECOGNIZES PEOPLE WHO HELP THE GRAIN INDUSTRY

Each year during the annual IGPA convention, the association recognizes individuals from Extension and the media who have helped promote the grain industry. Upon recommendation of the IGPA Board of Directors, the association also recognizes individuals for a lifetime of achievement.

Excellence in Extension

This award is given to Extension educators who have provided extraordinary service to the Idaho grain industry. Recipients included Gale Harding, *Excellence in County Extension*; Brad Brown, *Excellence in State Extension*; Larry Robertson, *Excellence in State Extension*; Dr. Ed Souza and Dr. Robert Zemetra, *Excellence in Extension Research*.

Electronic Media Award

This award recognizes individuals who have made an extra effort to help IGPA convey the Idaho grain story. Recipients were Steve Ritter and Jay Putnam.

Lifetime Achievement Award

For his lifetime of service to the Idaho grain industry, IGPA recognized Don Suchan (1937- 2001).

IGPA Scholarship

Each year IGPA sponsors a grain art contest. Entries are auctioned off at the annual IGPA Scholarship Auction, with proceeds used to pay the cash prizes. The artists also receive 20% of the sale price for their entry. The remainder of the auction income is placed in the IGPA Scholarship Fund which provides scholarships to junior and senior agriculture students at the University of Idaho College of Agriculture.

The IGPA Scholarship was started in 1989 with a $10,000 gift from Idaho Barley Commissioner Harvey Bickett. In 1991, IGPA President Don Suchan suggested that the IGPA grain art auction proceeds be used to build the IGPA Scholarship Fund, and as a result, the fund has grown to more than $35,000, allowing the association to award approximately $2,000 a year in scholarships.

IGPA SETS PRIORITIES FOR 2002

Each year at the IGPA annual convention, members from around the state gather to set policy for the coming year. Priorities identified for 2002:

FEDERAL POLICY

- Work with Congress to develop a Farm Bill incorporating the following: (1) fixed decoupled payments (2) increased loan rates (3) countercyclical payments (4) continued planting flexibility.
- Reinstate the investment tax credit policy.

STATE POLICY

- Ease the burden of property taxes on agricultural lands.
- Support voluntary crop residue burning regulations.

TRANSPORTATION

- Support uniform truck regulations.
- Work toward increased rail competition.

CONSERVATION

- Increase payments to farmers for conservation practices.
- Oppose dam breaching and increased water flow for fish recovery purposes.

TRADE

- Support Trade Promotion Authority (TPA) for the President.
- Support conversion of the EEP program to a quality incentive payment program.

RESEARCH

- Encourage research to upgrade the fertilizer rate guides.
- Promote continued research to develop new and improved wheat varieties.

IGPA Legislative Committee reviews resolutions for 2002. Dar Olberding, Mike McDonald, Chairman Dean Stevenson, Robert Blair, and Jay Anderson.

Blackfoot Mill Ties Future to Local Wheat

By Patricia Dailey

"Whether they make pan breads, French baguettes, pizza dough, or pie crust, our customers demand a quality flour product," emphasizes Arlan Gerleman, grain buyer for Pendleton Flour Mills' Blackfoot facility. "We only have 250,000 bushels of storage here, so blending possibilities are minimal. We can't take just any wheat—we are looking for wheat that provides the functionality characteristics required by our end users."

Currently 80% of the Mill's needs are met by area producers, but

Pendleton is not interested in developing wheats on its own. When it comes to the functionality traits demanded by customers, "there is no need to reinvent the wheel," says Gerleman. "We need to get the wheel back on the wagon so advantages can be brought back into the community and everyone can benefit. We want to work with local producers and Universities to find out what works for us in a variety, then track it back to see how differences in fertilizer or water affect it."

Unfortunately, wheat is not a uniform commodity. Different varieties have different inherent characteristics, and these change from year to year, depending on where and how the wheat is grown. This challenge means that a variety favored one year may change the following year.

Reuben McLean, quality assurance manager, uses a state of the art quality lab to test wheat before and after purchase. "The overall suitability of a wheat for milling may be summed up in a single word: quality. The problem is how you define quality. In any one year there are numerous varying characteristics that I, as a miller, have to consider before purchasing wheat."

Pendleton-Blackfoot Mill Specifics

- Approximately 32,000 bushels of wheat are ground per day (12 million bushels per year), producing over 1.3 million pounds of flour per day.
- The Mill currently focuses on hard wheats: 60% is HRS from Idaho, 20% is SWW, and 20% is HRW brought in from other areas. Soft wheat flours are mainly produced at the Oregon facility.
- Customers purchase specific flour blends for a variety of end uses: breads, pizza dough, tortillas, bagels, pretzels, noodles, candies(licorice), and pastries.
- About 70% of the flour produced moves via rail, the remainder by truck.
- Cattle feed operations are an important secondary market for cleanings and other unused product.

Although protein is critical (flour protein may be two percentage points below grain), other traits are equally important. All wheat considered for use is first test milled then the resulting flour is analyzed and baked. Only wheat that passes this crucial quality assurance step is considered for purchase.

"Growers and millers basically want the same things—just in different form," says Reuben. "Growers want high yield potential and stability, good test weight, pest resistance, and other agronomic characteristics. Millers look for flour yield, test weight, uniformity in kernel size, weight, functionality, and hardness. Above all, consistency, in both the physical and quality attributes, is of major importance."

Arlan and Rueben will work with producers to identify the wheat they need. The Mill has a number of strategies to help match their needs with available grain, including loan advances, deferred delivery, forward contracting, deferred payment, and storage payments.

The increasing emphasis on quality and functionality from end users will probably have an impact on variety

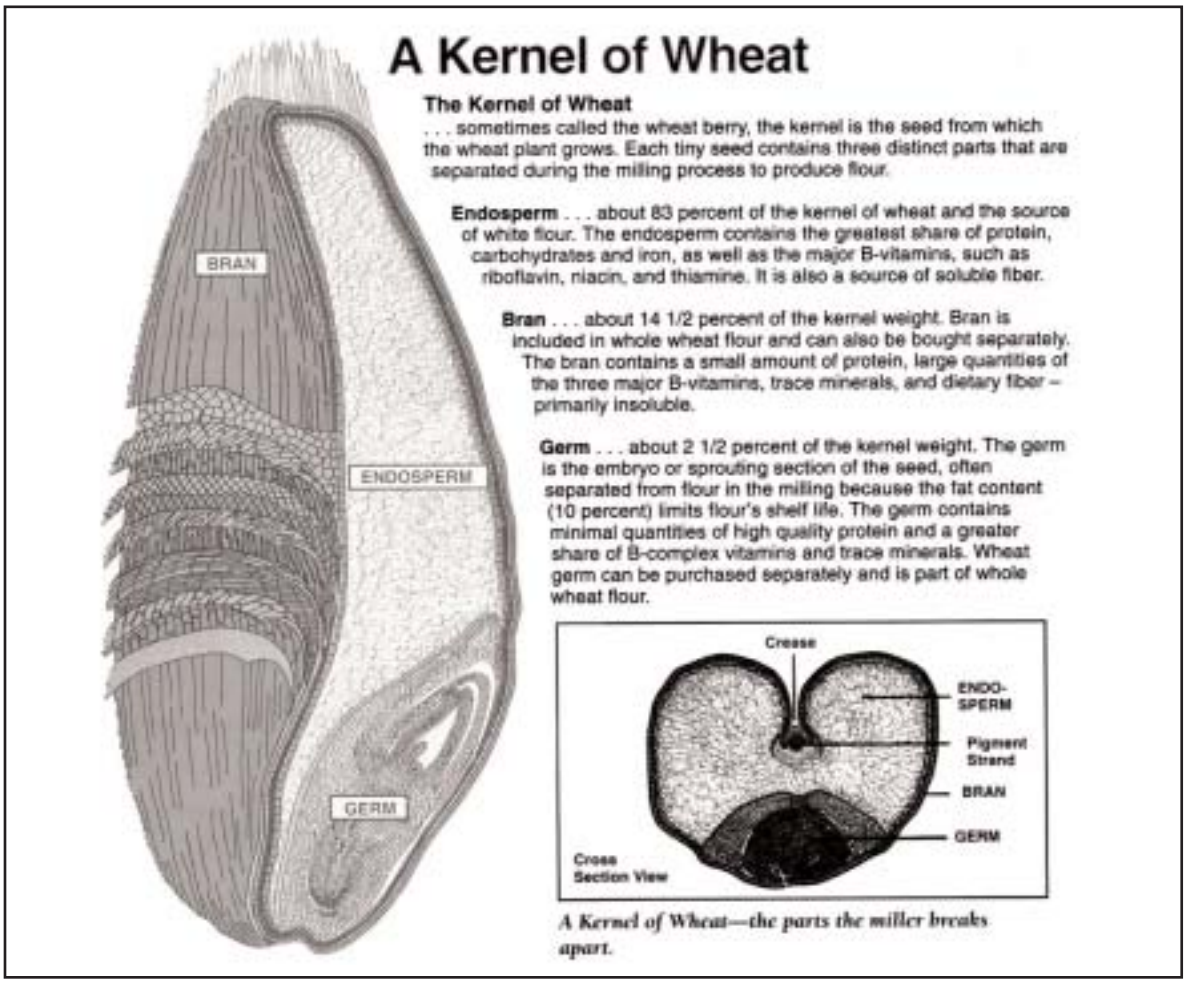
selection and management. Pendleton Mills, along with other users of Idaho wheat, is helping develop the "Idaho Preferred Mix"— a list of varieties that meet most milling and baking attributes—varieties that end users want. The list is available from the IWC office and local elevator and extension offices.

"We're hoping to make this a win-win situation for everyone involved," says Arlan. "As the Mill becomes more successfull, that success can be shared with growers."

For specific information about the Mill's needs, contact Arlan Gerleman, (208) 785-2800 x114, or agerleman@pfmills.com.

Current varieties of interest include Bonneville, Boundary, Declo, Jefferson, Sunstar King, 936r, Stephens, Jubilee, and Klassic.

Representatives from the Blackfoot Mill share their plans with growers during the IGPA Convention. Shown l to r: R. McLean, Pendleton Mills; Joe Anderson, Genesee; A. Gerleman, Pendleton Mills; and Ray Buttars, Weston.



A Kernel of Wheat—the parts the miller breaks apart.

Wild Oat Control in Spring Wheat

By Brad Hanson, Lori Crumley, and Don Thill
University of Idaho

Wild oat is the most widespread, troublesome weed challenging spring wheat producers in the Pacific Northwest. Commercial release of new wild oat herbicides, and new tank mix combinations for control of both wild oat and broadleaf weeds, have prompted multiple weed control experiments each year in the Palouse region of eastern Washington and northern Idaho. Two wild oat studies were established in spring wheat in 2001 near Potlatch, Idaho.

The first experiment was designed to examine wheat injury with wild oat herbicides plus *Aim* and other broadleaf herbicides. Herbicide treatments were applied on May 31, 2001 with a CO_2 pressurized backpack sprayer delivering 10 gpa at 30 psi and 3 mph. At herbicide application, wheat and wild oat were in the 4-5 leaf and 2-5 leaf stages, respectively. Seven days after application, wheat was injured 20% to 28% by all treatments containing *Aim,* and 10% by *Discover* and *Everest* applied alone (Table 1). Wild oat control was 96% to 100% with all herbicide treatments by July 20, 2001. In spite of the transient injury caused by *Aim*, treated plots had an average grain yield of 41 bu/A and were significantly better than the untreated control, which only yielded 28 bu/A.

The second experiment was designed to evaluate wild oat efficacy and antagonism with treatments of *Discover* plus *Harmony GT* and other broadleaf herbicides. In this case, all treatments controlled wild oat 56% to 73% on June 15, fifteen days after treatment (Table 2). By July 20, 2001, wild oat control was greater than 90% only with the *Discover* plus *Harmony GT* plus *Starane,* and for the *Assert* plus *Avenge* treatments. Adding *Harmony GT* at 0.0188 or 0.0234 lb/A to *Discover* did not reduce wild oat control compared to *Discover* alone. Adding *2,4-D amine* to *Discover* plus *Harmony GT* reduced wild oat control 23% to 32%, compared to *Discover* applied alone. Adding *MCPA ester* to *Discover* and 0.0188 lb/A *Harmony GT* reduced wild oat control 39%, compared to a similar treatment without *MCPA ester*. Wheat grain yield was 7 to 17 bu/A better than the untreated control with all herbicide treatments, and tended to be reduced in treatments with less effective wild oat control.

Table 1.
The effect of herbicide treatments on wheat injury, wild oat control, and spring grain yield near Potlatch, ID in 2001.

Treatment[1]	Rate	Wheat Injury	Wild Oat Control		Wheat
		June 6	June 15	July 20	Yield
	lb ai/A	**%**	**%**		**bu/A**
Untreated Control	—	—	—	—	28
Puma	.083	3	63	97	43
Puma+Aim+MCPA[2]	.083+.008+.25	20	58	96	42
Puma+Aim+Harmony Extra+MCPA	.083+.008+.0188+.25	23	65	96	43
Discover	.05	10	50	96	43
Discover+ Aim+MCPA	.05+.008+.25	23	70	97	42
Discover+Aim+Harmony Extra+ MCPA	.05+.008+.0188+.25	20	65	96	40
Everest	.027	10	53	99	39
Everest+Aim+MCPA	.027+.008+.25	25	53	100	43
Everest+ Discover+Harmony Extra+MCPA	.027+.008+.188+.25	20	60	99	41
Assert	.41	5	50	97	41
Assert+Aim+MCPA	.41+.008+.25	28	65	97	40
Assert+Aim+Harmony Extra+MCPA	.41+.008+.0188+.25	23	65	96	38
LSD (.05)		7	13	2	7

[1]A proprietary adjuvant (Score) was applied at 0.32 qt/A with all Discover treatments. A nonionic surfactant (R-11) was applied at 0.25% v/v with all Everest and Assert treatments.
[2]MCPA was applied in the ester formulation.

Table 2.
The effect of broadleaf herbicides tank mixed with Discover on wild oat control and spring wheat yield near Potlach, ID in 2001.

Treatment[1]	Rate	Wild Oat Control		Wheat
		June 15	July 20	Yield
	lb ai/A	**%**		**bu/A**
Untreated Control	—	—	—	29
Discover	.0625	67	82	44
Discover+Harmony GT	.0625+.0188	73	89	46
Discover+Harmony GT+MCPA ester	.0625+.0188+.375	62	50	36
Discover+Harmony GT+MCPA amine	.0625+.0188+.375	60	68	42
Discover+Harmony GT+Clarity	.0625+.0188+.0938	60	79	40
Discover+Harmony GT+Starane	.0625+.0188+.125	61	91	46
Discover+Harmony GT+Starane/MCPA ester[2]	.0625+.0188+.666	61	67	43
Discover+Harmony GT+2,4-D amine	.0625+.0188+.375	50	50	36
Discover+Harmony GT	.0625+.0234	68	85	43
Discover+Harmony GT+MCPA ester	.0625+.0234+.375	60	87	44
Discover+Harmony GT+MCPA amine	.0625+.0234+.375	64	78	43
Discover+Harmony GT+Clarity	.0625+.0234+.0938	55	67	43
Discover+Harmony GT+Starane	.0625+.0234+.125	73	91	46
Discover+Harmony GT+Starane/MCPA ester[2]	.0625+.0234+.666	64	72	39
Discover+Harmony GT+2,4-D amine	.0625+.0234+.375	66	59	37
Assert+Avenge	.23+.5	56	92	43
LSD (.05)		NS	16	5

[1]A proprietary adjuvant (Score) was applied at 0.4 qt/A to all Discover treatments. A nonionic surfactant (R-11) at 0.25% v/v was added to the Assert and Avenge treatments.
[2]Starane/MCPA ester is a commercial premix of Starane and Sword.

MANAGING ROOT DISEASES OF WHEAT AND BARLEY

By C.A. Bradley and R.L. Forster
University of Idaho

Wheat and barley grown in the dryland production areas of Idaho are often subjected to other stresses besides water. Plant pathogens present in the soil are able to infect cereal roots and cause diseases such as common/dryland root rot, Rhizoctonia root rot, and take-all. Diseased roots are less efficient in utilizing soil moisture and nutrients. Researchers at the University of Idaho are participating in a tri-state project dealing with the management of wheat and barley root pathogens. Also involved in the USDA/ARS-funded project are researchers from Oregon and Washington.

SURVEY

In an effort to identify potential root disease problems, University of Idaho scientists conducted a survey in June and July 2001 of dryland wheat and barley fields in southeastern Idaho. Plant and soil samples were collected from 4 to 9 fields in 12 counties (Bannock, Bear Lake, Bonneville, Caribou, Cassia, Franklin, Fremont, Madison, Minidoka, Oneida, Power, and Teton) for a total of 69 fields.

RESULTS

Of the fields sampled, 90% had common/dryland root rot, caused by *Bipolaris sorokiniana* and/or several *Fusarium* species. Rhizoctonia root rot, caused by *Rhizoctonia solani*, was detected in 91% of the fields, and 16% of the fields had take-all, caused by *Gaeumannomyces graminis* var. *tritici*. Soil samples were assayed for the presence of plant pathogenic nematodes: lesion nematodes (*Pratylenchus neglectus* and/or *P. thornei*) were present in 100% of the fields, and stunt nematodes *(Tylenchorhyncus sp.)* in 83%. Pin nematodes *(Paratylenchus sp.)* and dagger nematodes *(Xiphinema americanum)* were found in 10% or less of the fields.

SOLUTIONS

Fungicide treatments may protect seeds and seedlings from fungal pathogens for a short time, allowing germination and emergence, but infection by root pathogens may occur after the effect of the seed treatment has worn off. Rotation to a non-host crop may decrease the populations of the root pathogens over time, and keep pathogen populations at a non-economic level. University of Idaho scientists are planning a long-term study that will begin in the spring of 2002 to determine the effects of tillage and crop rotation on disease and nematode levels. There are few economically viable rotation crops that can thrive in a dryland environment; however, in the planned study, crops such as canola, mustard, and safflower will be evaluated for their agronomic performance as well as their effect on soilborne cereal pathogens. Although resistance to soilborne pathogens would be a good way to manage root diseases, virtually no wheat or barley varieties adapted for southeastern Idaho growing conditions have that resistance. Screening for root disease-resistant wheat and barley varieties will begin in the near future, in cooperation with wheat and barley breeders.

DW—New Hard Red Winter Wheat

By Edward Souza and Mary Guttieri

DW hard red winter wheat was developed for release by Idaho Agricultural Experiment Station in cooperation with the Idaho Wheat Commission. A semi-dwarf wheat adapted to rain-fed production zones of the Pacific Northwest area, DW is characterized by its high yield and superior bread baking quality. DW is named for the late D.W. Sunderman, former USDA-ARS research leader and wheat breeder at the Aberdeen location for 25 years.

DW is a selection from a 1985 cross between Blizzard and an Aberdeen breeding line derived from Neeley. It was tested in replicated, multi-site testing throughout southern Idaho beginning in the fall of 1992. After four years of multi-site testing, DW was evaluated from 1997 to 1999 in the Western Regional Nursery. DW was tested in the University on-farm extension trials under the breeding line number IDO513.

In southeastern Idaho yield trials under rain-fed conditions, DW is one of the highest yielding cultivars available, with yields similar to Promontory and Boundary (Figure 1). It is highly resistant to dwarf bunt, similar to the cultivars Blizzard and Bonneville. In three years of Western Regional Testing in Idaho and Washington, DW had adult plant resistance to stripe rust and seedling resistance to stripe rust races CDL37 and CDL45. In nine trials with significant snow mold infection, DW had tolerance to snow mold similar to the best hard red cultivars, Bonneville and Boundary.

One of the attractive aspects of DW is its combination of grain yield and quality—it is consistently one of the best wheats in our winter wheat trials for bread quality. DW has many of the desirable attributes of Bonneville—including baking quality and disease resistance—but with better yield, lodging resistance, and earlier maturity. It also has an excellent large loaf volume, coupled with a long dough mixing time (Table 1). The baking laboratory ranks DW dough handling characteristics higher than even our best hard red winter wheats, such as Bonneville (Table 1).

With a parent like Blizzard, I know some will ask, "Yes, Ed, but does it shell out?" DW does thresh well, similar to Weston, without many white caps; so, unlike Blizzard, you may have to buy hail insurance. However, DW is shorter than Bonneville and Blizzard and does not have the ability of those wheats to emerge from very deep planting depths (4" and greater). In its emergence ability, it is similar to Promontory and Boundary, but better than Manning.

The protein content of DW is lower than Weston and Bonneville in paired trials, yet similar to Manning, Promontory, and Utah 100. Part of the difference is the higher grain yield of DW relative to the taller wheats like Weston and Bonneville. To achieve both yield and protein, additional nitrogen fertilizer may be needed with high yielding wheats such as DW and Boundary.

DW has a prostrate juvenile growth habit with blue green foliage and no waxy bloom. The flag leaves of DW are erect with auricles that are glabrous and blue-green in color. The heads of DW are lax and awned. DW has a medium maturity heading date—about three days earlier than Bonneville and one day later than Manning. In southeastern Idaho rain-fed trials, DW's mature height is similar to Boundary at approximately 31 inches, and 5 inches shorter than Bonneville. At maturity, DW has a bronze chaff color. Seed of DW is medium-sized, (approximately 31 mg per kernel) similar to Manning and Utah 100, but smaller than Bonneville (37 mg per kernel) and Weston (40 mg per kernel).

DW seed will be maintained by the University of Idaho Foundation Seed Program, and may be obtained by contacting the Foundation Seed Director, University of Idaho, Kimberly Research and Extension Center, Kimberly, ID.

Cultivar	Flour protein %	Milling yield %	Mix time	Dough score	Loaf volume cc
DW	10.4	68.0	3.8	4.3	969
Bonneville	11.2	70.1	3.1	4.0	933
Manning	10.2	67.9	3.2	4.1	937
Promontory	10.4	70.2	3.3	3.8	904
Weston	11.4	68.2	1.8	3.8	977
LSD	0.3	0.4	0.2	0.3	27

Table 1. Milling and baking data for DW hard red winter wheat from 1994 to 1999, 19 trials in southeastern Idaho. *Bake data courtesy of Katherine O'Brien and staff, University of Idaho Wheat Quality Laboratory.*

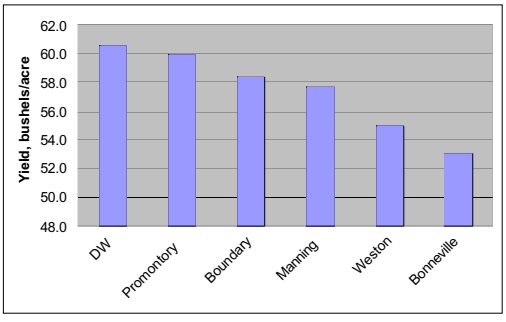


Figure 1.
Comparison of hard red winter wheat yields across seven years of testing in southeastern Idaho rain-fed trials.

Hard Spring Wheat Response to Planting Date and N at Heading

By Brad Brown
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Even with improved soft wheat prices, higher prices for the hard red class are generating interest in hard red among traditional soft wheat producers. However, market prices for the two classes have narrowed over the last two years, and producers should carefully consider the potential returns from hard wheat production, given its higher production costs, lower yields, and the risks of low protein discounts that can erode any price advantage.

Effective nitrogen (N) management is critical for avoiding low protein discounts, especially under irrigation or high rainfall conditions, where high yields are commonly associated with low protein. Any cultural practice that increases yield without increasing the utilization of N will tend to reduce protein at harvest. At least that is the conventional wisdom. After three years of testing in an irrigated system, we found exceptions to the general rule, thanks to support from the Idaho Wheat Commission.

An irrigated hard spring wheat study was conducted each season over three years (1999-2001) at the Parma Research and Extension Center, following sudan grass or corn grown the previous year. Three hard spring wheat varieties (Vandal, WPB936, and ID377s), were planted in late fall, early spring, and late spring, with urea N ranging from 0 to 75 lb N/A applied at heading for each planting. Fertilizer N as urea was uniformly topdressed to all plots in late March at the rate of 95-170 lb N/A depending on the year to support yields of 120 bu/A.

Spring wheat in southwestern Idaho can often be fall planted without winterkill, resulting in higher yields from greater tillering and a longer grain filling period. Yields from fall planted spring hard red (Vandal or WPB 936) or hard white (377s) ranged from 6% higher in 2001 to 26% higher in 2000 than early spring planted wheat. But the higher yielding wheat from late fall planting in two of three years was higher in protein rather than lower—just the opposite of what we expected. The higher yields with late fall planting were hardly surprising, since our research over the past decade has consistently shown the yield advantage to planting spring wheat in late fall rather than the following spring. But it is not clear why protein is also higher with late fall planting in some years.

For maximizing returns, the 50 lb late season N rate was optimum in all years of this study.

Fertilizer N is commonly applied at heading to increase grain protein of hard red wheat. Theoretically, it should take more N in higher yielding wheat to increase grain protein with late season N. However, we found that despite higher yields, the protein increase from late season N was essentially the same in high yielding, late fall-planted spring wheat varieties as it was in the considerably less productive spring plantings.

Varieties in each year differed both in yield and protein as expected, but there were no differences among the three varieties tested in their protein response to late season N. Vandal was consistently the highest in protein, but the protein increase with each addition of late season N was essentially the same in all varieties. Vandal required less N at heading to reach 14% protein than WPB936. Vandal was the only spring hard red to reach 14% protein with late season N in all years.

Protein increased with N rates applied at heading, increasing about 0.6% for the first 25 lb. of N applied at heading and irrigated in, and less with the next N increments (Table 1). The highest N rate at heading (75 lb/A) increased lodging in all years in at least one of the varieties, and yields were reduced in some years.

Returns for the hard red springs were calculated for the first two plantings assuming a price of $3.40 per bushel for 14% protein, a discount of $.24 per bushel for each 1% protein less than 14%, a premium of $.08 for each 1% protein above 14%, and urea N costing $.32/lb. Under the conditions of these trials, returns for the hard reds depended on year, planting date, variety, and N at heading. Returns were highest with the late fall planting due to both higher yields in all years and higher protein in two of three years (Table 2). With late fall planting,

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2001 Idaho Spring Barley Variety Performance Tests and 1999-2001 Yield Summaries

VARIETY TESTING

Idaho spring barley varieties are evaluated each year to provide performance information to help growers select superior varieties for their growing conditions. The tests utilize farmer fields or experiment stations, and varieties are grown under conditions typical for crop production in the area. Varieties are included in these tests based on their potential adaptation in an area and their commercial use. Entries are limited, due to resource availability.

Individual plots were planted as 7 rows, spaced 7" apart for 20' to 25' in length, and replicated 3 or 4 times in a randomized complete block design.

SUMMARY

Agronomic performance data for 2001 spring barley tests are summarized by Idaho Districts in Tables 1-4. District I is northern, District II is southwest, District III is southcentral, and District IV is southeast Idaho. District III and IV results are presented for 2-row barley in Table 3 and for 6-row barley in Table 4. Yield data is given for individual sites, while other agronomic data is averaged over all the sites of each table. Agronomic data and yield averages for District III and IV results are presented as a percentage of the site average. This allows unbiased comparisons when a variety isn't evaluated at all locations. Bushel/acre

Table 1.
Dryland spring barley performance in District 1 at Greencreek, Tammany, Genesee, and Moscow, 2001.

	Yield					Average of Four Sites			
Variety	Greencreek	Tammany	Genesee	Moscow	Avg.	Test Weight	Plant Height	Plumps >6/64	Thins <5.5/64
	bu/acre					lb/bu	Inches	%	%
2-Row Barley									
Bancroft	100	50	48	105	76	52.3	32	69	14
Baronesse	119	46	79	107	88	52.2	31	77	8
Bear	96	35	66	86	71	58.0	32	32	29
Camas	117	48	75	104	86	54.1	31	75	8
Chinook	106	44	62	105	79	52.8	31	69	13
Criton	118	51	64	113	87	51.8	31	84	6
Crystal	112	51	73	112	87	53.3	31	78	7
Farmington	105	37	74	100	79	53.1	28	68	12
Gallatin	107	55	69	109	85	53.2	33	75	9
Garnet	109	39	62	98	77	51.5	31	85	5
Harrington	106	45	62	109	81	52.3	32	63	15
Jersey	112	43	81	102	85	53.1	30	80	7
Merit	118	48	54	116	84	50.5	30	66	15
Orca	104	49	65	96	79	53.1	33	85	5
Valier	113	55	74	94	84	53.2	31	69	11
Zena	130	57	84	111	96	52.9	32	74	9
85Ab2323	112	50	72	109	86	53.3	32	81	7
Average	**111**	**47**	**68**	**104**	**83**	**53.0**	**31**	**72**	**10**
6-Row Barley									
Colter	110	51	71	115	87	50.1	32	70	11
Excel	113	47	67	109	84	50.5	35	72	8
Legacy	108	44	65	108	81	50.7	35	71	11
Morex	106	48	63	95	78	50.6	36	74	7
Stander	110	51	65	98	81	51.5	34	80	6
Steptoe	113	58	82	119	93	49.0	34	84	5
Average	**110**	**50**	**69**	**107**	**84**	**50.4**	**34**	**75**	**8**
Overall Average	**111**	**48**	**69**	**105**	**83**	**52.3**	**32**	**73**	**10**
LSD .10	**6**	**12**	**9**	**11**	**7**	**0.6**	**2**	**5**	**3**

yield results are based on 48 lb/bu at 11% moisture. Lodging ratings are the percent of a plot area lodged. Plump percentage is based on cleaned grain retained on a 6/64" screen. Average values are presented at the bottom of listings and are followed by a least significant difference (LSD) statistic at the 10% level.

Average yield data from variety performance trials in 1999, 2000, and 2001 are presented in Table 5 for all Districts. These data represent results of 6-14 site/years and are a good indication of long term performance of a variety.

INTERPRETATION

The site results reported in this article are for 2001 trials; 1991 to 2000 site results can be found in the spring 1992 to 2001 issues of *Idaho Grain*.

Average past performance of a variety over locations and years is the best indicator of performance potential, and growers should try to evaluate as much information as possible when selecting varieties. Yield is a primary characteristic used to select varieties, but disease resistance, maturity, lodging tendency, and quality characteristics such as test weight and plumpness are also important variety selection considerations.

Reported small differences among varieties in yield and other characteristics are usually of little importance due to chance differences in tests. The LSD statistic can aid in determining true differences: If differences between varieties are greater than the 10% LSD value, the varieties are considered "significantly different." This means that there is a 90% chance that the reported difference between varieties is a true difference and not due to other experimental factors. If no significant differences are determined for a trial, NS. is used in place of the LSD.

FURTHER INFORMATION

Variety characteristic information can be found in Extension publications; "Certified Seed Selection Guide for Spring Barley and Oats" (Progress Report 316) and "Certified Seed Selection Guide for Spring Wheat" (Progress Report 315). Variety performance information for winter wheat and barley has been published in the fall issues of *Idaho Grain*. An excellent general reference for barley producers is the Extension publication, "Idaho Spring Barley Production Guide" (Bulletin #742). To receive these free publications, contact the University of Idaho Agricultural Publications at (208) 885-7982 or your county Extension office. Information is also available on the web at www.uidaho.edu/cereals.

Table 2.
Spring Barley Variety Performance in District II at Parma, Kuna, and Weiser, 2000.

	Yield								
Variety	Parma	Kuna	Weiser	Average	Test Weight	Plant Height	Lodging	Plumps	Thins
	bu/acre				lb/bu	inches	%	%	%
2 Row Barley									
Baronesse	155	133	112	133	56.7	31	2	99	0.3
Camas	138	130	125	131	56.3	33	2	98	0.7
Farmington	154	137	117	136	55.3	28	8	98	0.5
Galena	156	149	91	132	56.0	29	0	99	0.4
Idagold	157	156	123	145	54.5	27	5	98	0.6
Moravian 37	153	139	117	136	57.3	29	2	99	0.4
Merit	148	133	102	128	56.0	32	3	99	0.4
Orca	129	108	101	113	55.0	33	3	99	0.5
Valier	144	132	116	131	56.0	33	19	97	0.6
6 Row Barley									
Brigham	150	130	84	121	50.9	30	3	97	0.6
Century	126	108	80	105	52.7	35	4	95	1.0
Colter	155	136	102	131	52.3	32	1	95	1.2
Gustoe	160	127	117	135	54.1	25	2	98	0.5
Legacy	133	131	72	112	52.8	32	10	97	0.8
Maranna	143	135	90	123	53.8	25	4	95	1.2
Millennium	158	134	113	135	53.5	30	0	95	1.1
Nebula	173	155	113	147	52.2	26	2	99	0.3
Statehood	134	132	83	116	52.7	32	8	97	0.8
Steptoe	152	127	126	135	53.2	33	9	98	0.5
Tango	147	117	102	122	52.9	30	4	97	0.7
Average	**148**	**132**	**104**	**128**	**54.2**	**30**	**5**	**97**	**0.7**
LSD .10	**17**	**16**	**25**	**20**	**1.2**	**4**	**8**	**1**	**0.3**

Table 3. Irrigated and Dryland Two-Row Spring Barley Performance in Districts III and IV at Twin Falls, Rupert, Aberdeen, Idaho Falls, Ashton, Ririe, and Soda Springs, 2001.

	Yield											
	Irrigated					Dryland		% of Location Average				
Variety	Twin Falls	Rupert	Aberdeen	Idaho Falls	Ashton	Ririe	Soda Springs	Yield	Test Weight	Plant Height	Date Head	Lodging[1]
	bu/acre							%	%	%	%	%
85Ab2323	101	143	104	134	105	28	69	103	102	108	100	116
Bush B1202	90	148	100	126	111	22	60	97	99	102	100	114
Bancroft	99	141	89	130	85	26	68	97	99	109	101	110
Baronesse	108	139	103	129	113	26	65	103	102	104	100	76
Bowman	---	---	---	---	---	29	68	111	101	104	100	---
Camas	105	140	105	129	94	26	61	99	102	103	100	100
CDC Bold	---	163	117	141	120	28	63	111	101	99	100	---
Chinook	---	---	98	---	---	28	75	108	101	106	100	---
Cooper	99	127	98	108	103	23	55	92	96	90	102	106
Criton	115	143	103	136	97	29	66	104	101	100	99	84
Farmington	101	139	93	128	94	25	57	95	100	103	100	87
Galena	101	137	109	128	110	---	---	102	97	97	101	97
Garnet	98	145	109	132	93	24	56	97	100	110	101	93
Harrington	103	126	102	124	98	23	52	93	99	103	101	114
Hector	---	---	---	---	---	28	69	110	100	103	100	---
Idagold II	99	139	102	128	101	27	54	98	99	95	100	139
Klages	92	119	78	123	92	23	52	87	99	110	101	122
Logan	92	139	104	126	95	32	58	100	103	105	97	7
Merit	94	150	103	135	114	23	54	99	96	101	101	140
Moravian 14	115	139	99	119	85	24	59	96	102	90	98	112
Moravian 37	120	145	104	123	107	28	70	106	101	96	100	85
Orca	101	128	96	125	77	24	55	91	103	104	98	34
Sunbar 560	102	143	109	126	89	24	66	99	99	96	101	140
Targhee	---	---	---	---	---	24	66	99	100	102	100	---
Valier	108	154	116	145	114	30	63	110	101	104	100	113
Xena	119	161	107	142	110	32	65	111	102	104	100	76
Average	**103**	**141**	**102**	**129**	**100**	**26**	**62**					
LSD .10	**12**	**10**	**9**	**10**	**6**	**2**	**7**					

1. Lodging only at Twin Falls.

Table 4. Irrigated and Dryland Six-Row Spring Barley Performance in Districts III and IV at Twin Falls, Rupert, Aberdeen, Idaho Falls, Ashton, Ririe, and Soda Springs, 2001.

	Yield											
	Irrigated					Dryland		% of Location Average				
Variety	Twin Falls	Rupert	Aberdeen	Idaho Falls	Ashton	Ririe	Soda Springs	Yield	Test Weight	Plant Height	Date Head	Lodging[1]
	bu/acre							%	%	%	%	%
Bringham	133	158	132	161	112	23	71	103	96	98	100	93
Century	---	---	120	---	---	30	73	105	99	110	101	57
Colter	115	158	145	146	109	24	74	102	100	104	100	105
Foster	101	145	109	140	104	26	64	92	103	111	100	101
LeDuc	---	---	---	---	---	27	78	107	95	114	100	---
Legacy	113	171	120	158	104	28	77	103	102	113	100	239
Maranna	98	145	132	132	89	---	---	90	96	84	103	142
Millennium	128	159	123	147	117	21	66	98	100	95	98	36
Morex	119	147	112	129	106	24	74	95	102	119	101	196
Nebula	120	133	109	134	100	---	---	91	95	83	103	81
Statehood	117	163	125	152	111	28	78	104	98	104	100	82
Steptoe	116	149	145	151	115	27	83	105	100	105	100	187
Tango	124	135	136	101	106	25	68	94	98	96	100	128
Average	**117**	**151**	**126**	**141**	**107**	**26**	**73**					
LSD .10	**13**	**10**	**19**	**17**	**7**	**2**	**6**					

1. Lodging taken at Twin Falls and Aberdeen.

Table 5. Spring Barley Yield Average for 1999-2001 in Idaho.

	District				
	I	II	III	IV	IV (dryland)
Site/Years	14	9	7	8	7
Variety	Yield (bu/acre)				
2-Row Barley					
B1202	–	–	126	105	41
Bancroft	83	–	124	107	46
Baronesse	91	132	135	120	46
Bear	70	–	–	–	–
Bowman	–	–	–	–	47
Camas	90	–	128	115	44
Chinook	86	–	–	–	46
Cooper	–	–	125	–	–
Criton	89	–	125	116	46
Crystal	86	–	–	–	–
Galena	–	–	131	115	–
Gallatin	86	–	–	–	–
Garnet	76	–	127	112	43
Harrington	83	–	126	111	37
Hector	–	–	–	–	46
Idagold II	–	137	129	118	42
Klages	–	–	118	104	38
Logan	–	–	128	110	45
Merit	–	–	134	121	40
Moravian 14	–	–	139	106	40
Moravian 37	–	–	136	114	46
Orca	80	–	127	102	41
Sunbar 560	–	–	132	118	46
Targhee	–	–	–	–	45
Xena	99	–	142	121	51
6-Row Barley					
Brigham	–	–	145	131	41
Century	–	–	–	–	43
Colter	82	129	136	108	39
Excel	87	–	–	–	–
Foster	–	–	–	–	36
Gustoe	–	134	–	–	–
LeDuc	–	–	–	–	42
Legacy	–	–	136	114	41
Maranna	–	126	135	–	–
Millennium	–	–	144	105	38
Morex	80	–	122	85	39
Nebula	–	–	131	119	–
Stander	84	–	–	–	–
Statehood	–	–	134	104	42
Steptoe	89	139	137	108	46
Tango	–	–	119	93	40

Continued from page 12

Vandal produced greater returns than WPB936 in two of three years, due to comparable or higher yields and higher protein. With early spring planting, WPB936 generally provided the highest return due primarily to higher yields. The higher protein content of Vandal consistently reduced the low protein discount. WPB 936 required an additional 30 lb. of late season N to match the protein in Vandal. Late season N was essential for minimizing low protein discounts and maximizing returns, especially with WPB 936. For maximizing returns, the 50 lb. late season N rate was optimum in all years of this study. Late season N rates (in single applications) higher than 50 lb/A were sometimes detrimental and tended to reduce the returns for Vandal, even though protein was highest at the highest N rate. Bread baking quality, as indicated by bake loaf volume, was consistently improved with late season N.

The results from three years of study in southwestern Idaho indicate that returns to producers will depend on optimum combinations of variety, planting date, and late season N. Late season N is especially critical, but the protein increase with N at heading appears to be independent of varieties and planting dates.

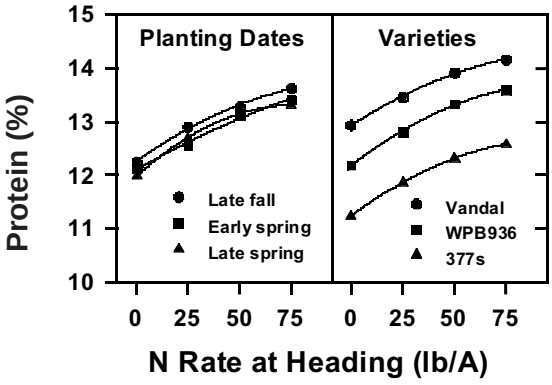

Table 1. Average protein percent of hard spring wheat as affected by planting date, variety, and N applied at heading. (Parma, 1999-2001).

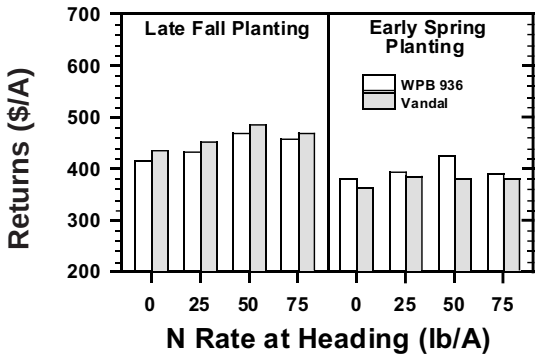

Table 2. Average annual financial returns for hard red spring wheat as affected by variety, planting date, and N applied at heading (Parma, 1999-2001).

2001 Idaho Spring Wheat Variety Performance Tests and 1999-2001 Yield Summaries

Idaho spring wheat varieties are evaluated each year to provide performance information to help growers select superior varieties for their growing conditions. Because of similarities among spring wheat and spring barley tests, details about spring wheat test design and interpretation of the information presented in this article can be found in the preceding article, "2001 Idaho Spring Barley Variety Performance Tests and 1999-2001 Yield Summaries." Agronomic performance data for spring wheat is summarized by state Districts in Tables 1-5. District III and IV results are presented for hard red spring wheat in Table 4, and for soft white spring wheat in Table 5. Yield data is given for individual sites, while other agronomic data is averaged over all the sites of each table. Agronomic data and yield averages for District III and IV results are presented as a percentage of the location average. This allows unbiased comparisons when a variety isn't evaluated at all locations. Bushel/acre yield results are based on 60 lb/bu at 11% moisture. Lodging ratings are the percent of a plot area lodged. Average values are presented at the bottom of listings and are followed by a least significant difference (LSD) statistic at the 10% level. Average yield results from variety performance trials in 1999, 2000, and 2001 are presented in Table 6 for all Districts.

Table 1. Dryland Spring Wheat Performance in District I at Greencreek and Genesee, 2001.

	Yield				
Variety	**Greencreek**	**Genesee**	**Avg.**	**Test Weight**	**Plant Height**
	bu/acre			lb/bu	inches
Soft White					
Centennial	77	58	68	62.1	30
Challis	85	59	72	60.6	31
Jubilee	73	54	64	62.2	33
Penawawa	78	52	65	61.8	30
Vanna	64	56	60	60.4	30
Wawawai	78	64	71	62.0	35
Zak	85	64	75	61.9	32
Average	**77**	**58**	**68**	**61.6**	**32**
Hard White					
Pristine	77	62	70	64.3	30
ID 377s	69	58	63	62.7	31
IDO 533	75	52	64	62.2	32
ML 455	65	57	61	61.9	32
Average	**71**	**57**	**64**	**62.8**	**31**
Hard Red					
Hank	83	67	75	61.3	30
Iona	48	52	50	62.4	30
Jefferson	76	62	69	62.3	31
Jefferson HSR[1]	74	64	69	62.4	31
Scarlet	73	57	65	61.2	33
Tara	70	62	66	62.5	32
Westbred 926	63	60	62	61.8	30
Westbred 936	79	56	68	61.2	29
Average	**71**	**60**	**65**	**61.9**	**31**
Overall Average	**73**	**59**	**66**	**62.0**	**31**
LSD .10	**4**	**5**	**3**	**0.6**	**1**

1. HSR—High Seeding Rate, Normal +20%

Table 2. Soft White Spring Wheat Variety Performance in District II at Parma, Kuna and Weiser, 2001.

Variety	Yield				Protein	Test Weight	Plant Height	Lodging
	Parma	Kuna	Weiser	Average				
	bu/acre				%	lb/bu	inches	%
Soft White								
Alpowa	124	117	121	121	10.7	65.1	38	10
Centennial	119	106	116	114	10.1	64.5	37	0
Challis	113	118	129	120	9.8	63.8	37	7
Jubilee	119	114	124	119	10.2	64.6	38	1
Penawawa	125	119	128	124	10.4	64.3	36	7
Pomerelle	106	98	121	108	9.6	63.0	38	0
Treasure	131	104	120	118	10.2	62.4	37	13
Vanna	116	115	120	117	10.0	63.9	37	2
Whitebird	115	101	117	111	10.1	64.5	39	0
Zak	115	112	117	115	10.0	63.6	38	17
Average	**118**	**110**	**121**	**117**	**10.1**	**64.0**	**38**	**6**
LSD .10	**18**	**17**	**10**	**8**	**1.3**	**0.7**	**1**	**11**

Table 3. Hard Spring Wheat Variety Performance in District II at Parma, Kuna and Weiser, 2001.

Variety	Yield				Protein	Test Weight	Plant Height	Lodging
	Parma	Kuna	Weiser	Average				
	bu/acre				%	lb/bu	inches	%
Hard Red								
Hank	104	100	106	104	12.2	63.6	35	0
Hi-Line	112	109	106	108	12.5	64.2	34	1
Jefferson	110	105	114	112	12.1	64.0	36	0
Scarlet	86	106	109	100	11.7	63.3	39	0
Sunstar King[1]	96	–	–	96	9.2	64.3	34	0
Tara	88	106	90	89	12.2	64.0	37	0
WPB 936	118	108	109	111	11.9	63.8	33	0
Hard White								
IDO 377s	128	108	117	120	11.5	64.2	38	9
IDO 560	116	101	109	110	10.6	63.5	36	1
Lolo	98	95	111	107	11.7	64.6	36	0
Pristine	91	110	94	92	12.2	65.3	35	0
Winsome	110	88	115	112	10.8	63.3	33	0
Durum								
Kronos	106	84	100	101	12.4	64.3	30	0
Matt[1]	86	–	–	86	8.0	64.0	30	0
Utopia	94	99	107	102	11.7	63.7	30	0
WPB 881	91	106	96	98	11.9	63.3	33	0
Average	**102**	**102**	**106**	**103**	**11.8**	**64.1**	**35**	**1**
LSD .10	**15**	**21**	**13**	**10**	**1.9**	**0.7**	**1**	**3**

1. Average values for Sunstar King and Matt are for one location and should not be compared to other averages.

Table 4. Irrigated and Dryland Soft White Spring Wheat Performance in Districts III and IV at Twin Falls, Rupert, Aberdeen, Idaho Falls, Ashton, Fairfield, Ririe, and Soda Springs, 2001.

	Yield								% of location average			
	Irrigated					Dryland						
	Twin Falls	Rupert	Aberdeen	Idaho Falls	Ashton	Fairfield	Ririe	Soda Springs	Yield	Test Weight	Plant Height	Date Head[1]
	bu/acre								%	%	%	%
Variety												
Alpowa	110	121	89	111	93	28	21	53	105	102	102	102
Centennial	95	102	85	92	92	24	20	44	94	100	97	99
Challis	107	111	120	101	94	26	19	54	104	99	99	100
Fieldwin	109	113	92	100	91	26	19	46	99	100	103	100
Jubillee	102	100	76	100	90	28	21	52	97	101	101	101
Penawawa	105	107	120	103	90	25	17	49	101	100	97	100
Pomerelle	94	117	85	107	95	26	20	53	100	100	100	100
Sunstar Promise	–	102	118	98	98	–	21	51	93	99	97	99
Treasure	97	112	126	103	97	–	21	51	93	97	97	101
Whitebird	91	106	90	99	94	24	21	50	97	100	101	101
Zak	94	106	90	96	94	27	22	50	99	99	107	101
Average	**100**	**109**	**99**	**101**	**93**	**26**	**20**	**50**				
LSD .10	**7**	**7**	**9**	**7**	**5**	**3**	**1**	**7**				

1. Heading date was not taken at Rupert.

Table 5. Irrigated and Dryland Hard Spring Wheat Performance in Districts III and IV at Twin Falls, Rupert, Aberdeen, Idaho Falls, Ashton, Fairfield, Ririe, and Soda Springs, 2001.

	Yield								% of location average			
	Irrigated					Dryland						
	Twin Falls	Rupert	Aberdeen	Idaho Falls	Ashton	Fairfield	Ririe	Soda Springs	Yield	Test Weight	Plant Height	Date Head
	bu/acre								%	%	%	%
Variety												
Hard Red												
Amidon	–	–	–	–	–	21	20	36	100	99	99	102
Bannock	–	–	–	–	–	21	19	38	100	100	108	100
HJ 98	–	–	–	–	–	22	18	43	105	101	91	101
Hank	83	104	106	99	84	21	18	44	101	99	90	100
Iona	85	112	103	107	84	22	19	37	102	101	101	101
Jefferson	86	107	107	106	82	23	18	37	101	102	94	100
Probrand751	80	97	93	100	78	–	18	39	95	99	90	101
Rick	83	116	120	109	87	–	19	42	107	100	100	100
Scarlet	76	112	113	110	83	25	21	38	105	102	100	101
Sunstar King	82	105	107	102	73	22	18	40	99	102	93	100
Sylvan	–	–	121	–	–	19	22	40	106	96	107	102
Tara	81	99	97	97	74	22	16	38	94	101	96	99
Westbred 926	–	–	–	–		20	16	31	87	97	94	99
Westbred 936	83	112	110	103	82	22	17	39	100	100	85	100
Zeke	88	116	110	109	85	21	16	42	102	98	92	99
Hard White												
Idaho 377s	81	115	119	112	97	26	21	39	109	100	104	100
IDO 560	80	107	115	109	92	24	20	42	105	99	103	101
Klasic	84	104	104	90	69	–	12	37	89	87	74	98
Lolo	78	122	120	114	87	23	21	42	108	100	109	100
ML455	80	108	117	101	87	20	20	28	97	98	108	103
Pristine	80	109	108	102	84	22	15	35	96	102	98	98
Winsome	84	108	113	106	92	22	19	45	105	98	97	102
Durum												
Kronos	76	105	107	100	76	20	12	30	99	99	103	100
Ocotillo	70	100	101	97	81	20	16	33	100	100	94	99
Utopia	75	112	109	101	81	18	14	36	103	101	97	100
Matt	77	102	96	89	74	19	12	33	96	100	99	101
Average	**81**	**108**	**109**	**103**	**83**	**21**	**18**	**38**				
LSD .10	**8**	**6**	**6**	**1**	**4**	**1**	**1**	**3**				

1. Heading date was not taken at Rupert.

Table 6. Spring Wheat Yield Average for 1999-2001 in Idaho.

	District					
	I	II	III	III (Dry)	IV	IV (Dry)
Site/Years	8	11	6	2	6	6
Variety	**Yield (bu/acre)**					
Soft White						
Alpowa	–	106	112	25	95	37
Centennial	65	111	103	26	92	32
Challis	66	–	109	–	98	37
Fieldwin	–	–	108	25	93	34
Jubilee	62	–	106	–	90	36
Penawawa	61	112	108	21	96	32
Pomerelle	–	111	107	–	98	35
Sunstar Promise	–	–	–	–	98	34
Treasure	–	111	108	–	98	35
Vanna	62	–	–	–	–	–
Wawawai	66	–	–	–	–	
Whitebird	–	109	104	26	93	36
Hard Red						
Amidon	–	–	–	22	–	27
Bannock	–	–	–	–	–	27
HJ 98	–	–	–	–	–	30
Hank	–	–	99	–	99	31
Iona	53	–	–	23	–	27
Jefferson	65	–	98	23	100	29
Probrand 751	–	–	96	–	97	29
Rick	–	–	101	–	110	30
Scarlet	63	–	–	–	–	–
Sylvan	–	–	–	–	–	28
Westbred 926	60	–	–	21	–	25
Westbred 936	62	106	100	22	102	27
Zeke	–	–	101	–	101	28
Hard White						
ID 377s	64	119	102	27	110	32
Klassic	–	–	91	–	93	23
Lolo	–	–	105	25	111	32
ML 455	60	–	–	–	–	–
Pristine	–	–	–	–	97	–
Winsome	–	–	101	23	101	30
Durum						
Kronos	–	–	90	19	99	23
Ocotillo	–	–	85	–	87	24
Utopia	–	–	95	18	96	24
WPB 881	–	92	–	–	–	–