

# IDAHO GRAIN

THE IDAHO GRAIN PRODUCERS ASSOCIATION MAGAZINE

SPRING 2016



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**H**AVING served the past three years on Executive Board of the Idaho Grain Producers, it is my honor to be the President for 2016. I gladly accept this position and the challenges that may come forth.

I grew up on the family farm southwest of Filer, Idaho, graduated from Filer High School and Idaho State University, where I earned a BBA in accounting. My future as an accountant meant leaving the farm, but I was lucky to find jobs with companies that were sort of associated with agriculture. I went to work for Morrison Knudsen Co (a worldwide construction company that built highways and dam construction). Accounting and financial reports were all done at or near the actual construction site, so it wasn't too boring

being in an on-site office.

The construction business always meant moving a lot. Morrison Knudsen Co, was building the ABM Missile site in North Dakota and this is where I met Cheryl. Shortly thereafter I was transferred to Boise to work in the auditing department. Long story short, Cheryl and I married and lived in Boise for about two years, then came transfer time again. This time to Hawaii – pretty hard to say no. We lived on the island of Oahu and this is where our daughter, Marcia, was born. Starting a family, it was time to leave the construction industry and put down some roots. I found a job working as office manager for Ehrich's Mfg Co located in Fargo, ND. They were a steel fabrication shop that made component parts for the Steiger Tractor manufacture and parts for the farm equipment maker Melroe. I am getting closer to my farming addiction.

Four years later I was office manager for E. W. Wylie Co. They hauled all the sugar beets from the Red River Valley, Supplying beets to five American Crystal refining factories located in North Dakota and Minnesota. Now I am involved in beets and trucking.

The next addition to our family was a son, Kirby, who was born in Fargo, ND. Toward the end of 1979, my dad asked me if I wanted to come back to Idaho and farm. My answer after very little deliberation was a definite yes. Now we get to raise our family on the farm just as both my wife and I were.

My crops were mainly alfalfa, beans, wheat and some corn, but now only consists of bean and malt barley rotation. My son who worked as an automotive technician for about 8 years has moved his family from San Diego to Idaho to help farm and eventually take over as a fourth generation farmer.

As President, I welcome all comments, suggestions, or issues you may have. Thank you and I hope your farming gets off to a good start this spring. ■

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**W**ITH the new year came the start of the 2016 legislative session – the statehouse has been a busy place, and will continue to be until the legislators adjourn sine die, which is likely to be sometime toward the end of March.

The beginning of a legislative session is like cracking open a brand new book – you don't know where the story will take you, but it's sure to be a wild ride full of plot twists and turns before its conclusion.

Between the excitement and anticipation of the early weeks of session and the exhausted end, Idaho's legislators will have considered hundreds of issues, many of which will

impact your bottom line.

In addition to what is happening in Boise, I was able to travel to Washington, DC along with IGPA's executive board and two participants in IGPA's mentorship program to take part in the annual meetings of our national affiliates, the National Barley Growers Association and the National Association of Wheat Growers. You can read more about Jonathan and Justin's DC experience on pages 7-9. But as we headed back west, I was reminded of two things. First, how many significant issues are before our federal decision makers – and second, how important it is to have a voice in that debate, both individually and collectively.

In DC, we talked with members of our delegation about:

- Passage of the Trans Pacific Partnership (TPP)
- Normalizing trade with Cuba
- Importance of crop insurance
- Waters of the United States
- GMO labeling
- Craft Beverage Modernization and Tax Reform Act (read more on pages 12-13)
- Agriculture research

We also thanked the member of our delegation who voted for the highway bill, which paved the way for 129,000 lb. trucks to run on Idaho's interstates – and we pressed the other members of our delegation on why they did not.

This issue takes us back to the Idaho legislature. The state appears to be on track to pass legislation authorizing 129,000 lb. trucks on the interstate system. Thanks go to Senate Transportation Chairman Brackett for introducing that bill.

Additionally, education has been a key issue this session, and a small part of that is funding for the University of Idaho College of Agricultural and Life Sciences, which is a priority for IGPA. Water has been another pervasive issue this session; there have been a number of bills introduced that support the settlement agreement on the Eastern Snake Plane Aquifer. We are also tracking proposals on how to enforce the use of dyed fuel.

It is critical to be involved in all of these issues. You need to have a voice at the Statehouse and at the U.S. Capitol. But because you can't be at the Statehouse every day, nor make the long trip to Washington, DC week in and week out – that's why you're a member of IGPA. It is IGPA's job to represent you at the county, state, and federal level. But, we in turn need you – each of our members adds to the strength of our organization. And while you can't be in DC – you can send an email to our federal legislators and weigh in on critical issues. While you have spring work to do that will keep you away from Boise – you can have a relationship with your local legislators while they're home. You can be active in your county grower organization. You can be informed and share information with other growers in your area. You can be a member of IGPA. ■



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# DC an eye-opening trip for Idaho growers



Justin and Jonathan in front of the Lincoln Memorial in Washington, DC

By Cindy Snyder

**J**ONATHAN Rosenau and Justin Place traveled to Washington, DC, in early February along with the executive board of the Idaho Grain Producers Association (IGPA) to attend meetings for the National Barley Growers Association and the National Association of Wheat Growers. It was the first time either had traveled to Washington, DC. The two were participants in IGPA's mentorship program.

Jonathan Rosenau is a dryland farmer near Grangeville (north Idaho) who grows both wheat and barley. Justin Place raises irrigated barley and wheat near Hamer (southeastern Idaho).

## First impressions of DC

Justin Place didn't know what to expect going to DC for the first time. Even though he'd been to Atlanta before, DC was tremendously large. The long lines of cabs waiting to take people places took him by surprise.

The National Barley Growers Association (NBGA) lined up a Capitol Hill tour for those who had never been to DC before. A Congressional staff member guided them to places the public doesn't usually visit. At one point the guide stopped and pointed out the difference in tile on one side of a doorway versus the other side. Then said, those doors were the original front doors of the Capitol. The hinges have been changed but it's still the same doors that John Quincy Adams stepped through, Place said.

Every president, on Inauguration Day, walks down the Capitol staircase from the crypt to a platform outside where they are sworn in. Place said it was awe-inspiring to stop and think of all the presidents, all the leaders of our country, who have walked down those stairs.

"If you're not humbled by that, you either don't have a heart or you don't know your his-



The group in Congressman Simpson's office preparing for a meeting

tory," he said.

While seeing the historical monuments was fun, most of their time was spent attending NBGA and NAWG meetings as well as visiting Congressional representatives. They were fortunate to meet personally with all four of Idaho's delegation: Rep. Mike Simpson, Rep. Raul Labrador, Sen. Mike Crapo and Sen. Jim Risch.

Jonathan Rosenau was surprised to see firsthand just how wide the gap is between what farmers do and what people in Washington, DC, think they do. "There is so much misinformation out there," he said.

A social event NBGA hosted is just one example of why Rosenau came back believing farmers need to spend more time telling their story. As the grain growers made their rounds on the Hill, they invited their representatives, senators and staffers to attend the reception and try free micro-brew samples. Between 500 and 600 people — mostly aides and runners — attended. Many were younger than 25.

"They wanted to know about farmers, about what farmers do," Rosenau said. "A lot of these people are working for representatives of farm states but they really don't know anything about farming."

While Idaho's delegation has been very supportive of agriculture and agricultural issues, Washington DC has a different mentality. "Even in a big city like Boise there is still some connection to agriculture," he said.

Here are a few of the issues discussed that Place and Rosenau felt were the most important:

**Beer taxes:**

One of the big issues on the Hill was the Craft Beverage Modernization and Tax Reform Act. If passed, the tax on the first 60,000 barrels of beer sold by a domestic craft brewer would be cut in half. Brewers could pour that money into infrastructure or hire more labor, Place said. Large domestic brewers would also

get a tax cut, but it wouldn't be as large as the one for craft brewers.

**Federal crop insurance:**

The Grangeville area suffered the worst drought it has seen since 1977 last summer. Without federal crop insurance, many of the farmers in his area likely would have gone broke last year, Rosenau said.

He attended meetings with the USDA Risk Management Agency. "We are continuing to work with RMA to better justify our crop insurance grades," he said.

One of his concerns is talk on the Hill about reducing federal subsidies for crop insurance. Another concern is that the price loss coverage and agricultural risk coverage policies don't offer the safety net legislators think they do unless commodity prices drop below even today's weak prices. And by then, Rosenau said, farmers will be out of business anyway.

The disconnect between what a farm program intends and what it actually means to farmers was frustrating for him.

**Trade:**

For south Idaho growers whose grain is used primarily in the domestic market, the Trans-Pacific Partnership agreement can seem a bit abstract. But Place was still interested to hear more details about the trade agreement.

If the agreement can open up trade so that more Idaho wheat is exported, than the domestic markets might improve also, he said.

**Research gap:**

He was also struck by a statistic provided by NAWG that showed the average American corn grower makes approximately \$270 per acre while the average wheat farmer makes \$107 per acre.

"That indicates how far wheat research and development is behind," Rosenau said. "I knew we were behind but I didn't know we were that far behind."

He asked how to make up that research gap, whether it should be through land grant universities or other agencies. The answer seemed to be a little of both. Now that a draft sequence of the bread wheat genome has been published, wheat research can move forward faster. Better collaboration between researchers and increased germ plasm sharing will also help.

**Tell our story**

"What I took away from the trip is that if we (farmers) don't stay involved on a macro level — whether that's DC or state or local — we will keep losing traction and our share in the marketplace," Rosenau said.

While Idaho growers are fortunate to have IGPA, in addition to NBGA and NAWG in DC, lobbying for measures that should help the grain industry, farmers themselves need to



Back row: Justin Place, Idaho Barley Commissioner Scott Brown, IGPA Secretary/Treasurer Dwight Little, Jonathan Rosenau  
Front row: IGPA Past President Sid Cellan, Senator Jim Risch, IGPA President Terry Kulik, IGPA Executive Director Stacey Satterlee





Justin and Jonathan at the Lincoln Memorial

speak out.

Deputy Secretary of Agriculture Krysta Harden stressed that point when she met with Idaho's grain growers. Both Rosenau and Place mentioned that Harden encouraged farmers to get their wives to tell agriculture's story.

Women talk all the time, Harden said. Women get advice from their friends about which pediatrician to use, which brand of detergent to buy, what tomatoes taste the best. Women will believe another woman more than other specialists, and more than a male farmer telling the same story.

"If the public doesn't understand it, they are scared of it," Place said.

Both Rosenau and Place appreciated the opportunity to make the trip and encourage other growers to say yes when asked to attend.

"I've gotten a much better understanding of how things work," Place said.

For Rosenau, meeting other growers was a highlight. "You meet good people from all across the nation who are fighting the same fight as you. They want to know how you do what you do because they're looking for other ideas." ■



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# Parrella looks forward to new role as CALS dean

By Bill Loftus, College of Agricultural and Life Sciences, University of Idaho

**A**s a researcher and administrator at the University of California, Davis, Michael Parrella found that collaboration was key to achieving goals. Even before he began serving as dean of the College of Agricultural and Life Sciences Feb. 1, he began preparing for the new role by visiting the Moscow campus and Boise to meet key faculty, staff, legislators and others influential in his work at the University of Idaho.

His position at UC Davis, one of the West's top agriculturally-focused land-grant universities, also equipped the new dean with connections to a broad mix of leading scientists. A case in point: when the college selected molecular wheat geneticist Daolin Fu to a new faculty position supported by the Idaho Wheat Commission, Parrella met with him at Davis to begin a connection.

Fu worked with Jorge Dubcovsky, a wheat breeder and geneticist at Davis. As the leader of a coordinated agriculture project funded by USDA with \$25 million in 2011, Dubcovsky assembled a team of researchers to address critical issues in the vital grain. Among the researchers is UI CALS wheat breeder Jianli Chen at Aberdeen, who evaluated 3,000 wheat and barley lines for water and nitrogen-use efficiency.

Maintaining a close working relationship between academic researchers and the agricultural industry is a hallmark of Parrella's professional life. During his first month on the job, the new dean spent three fourths of his time on the road meeting with friends and alumni of the college, attending the Larry Branen Idaho Ag Summit and visiting with Idaho legislators and growers.

As an entomologist focused on integrated pest management and California's agricultural industry, Parrella's career interests led him to work closely with flower growers and greenhouse and nursery operators. Parrella's



Dean Parrella with College of Agricultural and Life Sciences ambassadors Kailyn Gady, left, and Cassidy Berry, right, at the Spokane Ag Expo during a Feb. 4 career fair for high school students. Berry is a senior from Kimberly majoring in sustainable crop and landscape systems: soil and land resources. Gady is a senior from Rockford, Wash., majoring in agricultural and extension education: agricultural science, communication and leadership.

work with that industry focused on insect and disease challenges.

"Sixty new invasive species come into California every month," he said. "Most just don't survive, but we have enough of them that do with major economic consequences that it is a real concern. There are big issues with invasive species."

Invasive species are a very big deal for the industry, one of its leaders agreed with Parrella.

"The pest control part of our business is a very big deal because what we're selling is the "look," what something looks like. We have very, very low tolerance for pest damage in general," said Mike Mellano, Sr. His father, Giovanni, founded what grew to become one of California's major flower companies in 1925 and now spans three generations. "Mike got us started on using predators. Everything we do on the entomology side goes back to working with Mike, and we started working with Mike when he first got here."

"I sent him an email when I heard he was leaving. I told him this was Idaho's gain and our loss down here," Mellano said. "He's great."

"He's an outstanding entomologist and he established contact with the industry people and we're willing to support him because he's so good and because he's available," Mellano said. His relationship with Parrella goes back to 1980 when he first joined the UC Riverside faculty after finishing his doctorate at Virginia Tech.

"He does a lot of applied research and a lot of basic research, and he integrates it. An ongoing problem in agricultural research is that the relationship between the industry and the researchers can easily become distant. I think that can easily affect the relationship in a negative way," Mellano said. "But the big thing is he has contact with the industry all of the time."

His work with the nursery industry led to more than 30 years of consecutive research funding from the American Floral Endow-

ment and the Society of American Florist's top research and education award.

"Mike was first and foremost a researcher and scientist, but his research was always conducted with an eye toward practical applications for growers. He did not conduct research just for the sake of conducting research but rather was always considering what was important to the grower — and ultimately to the industry," said Drew Gruenburg, chief operating officer for the Society of American Florists.

"A good example of this is his participation probably 30 years ago in the creation of a conference on the leafminer, a pest that was seriously affecting chrysanthemums. Mike was instrumental in creating a conference to bring together the brightest minds in pest and disease control to see what could be done," Gruenburg said.

Kelly Olson, Idaho Barley Commission administrator in Boise, said she was impressed with Parrella when he met with stakeholders during the search process in Boise. Parrella was the clear favorite from among the dean candidates who visited Idaho, she said.

"I think he brings a good combination of passion, energy and fresh ideas that is going to work very well for the College of Agricul-

tural and Life Sciences and all of its stakeholders," she said. "He clearly has an excellent history of industry collaboration working with stakeholders in California, where they have a huge, diverse agricultural industry.

That meeting with stakeholders in Boise was significant. Parrella said, "What impressed me there was the tremendous passion for supporting agriculture, supporting CALS and supporting the University of Idaho. There is a higher level of satisfaction you get by knowing there are people who are really passionate and believe in the college."

Idaho Dairyman's Association Executive Director Bob Naerebout, a member of the dean search committee, welcomed Parrella's selection. Idaho is a leading dairy state, ranking behind California and Wisconsin.

"We had 22 strong candidates for the position of dean. We in the livestock industry were extremely pleased that Dr. Parrella was able to become the next dean," he said. "I think it was important to get a fresh set of eyes from outside of Idaho to look at how we can proceed forward as an agriculture industry. I think the appealing thing was that he did an outstanding job of connecting with stakeholders throughout the process."

Parrella applied because he was seeking

new challenges.

"Davis is a great school," he said, "The impact I've made here, I think it's been significant. But in a sense I've been there and done that, so I feel like I need a new challenge. I'm looking forward to it. There will be a learning curve there, certainly, given the size of the state and statewide responsibility with Extension, but I enjoy that."

Making the change to leading CALS as its dean is something that he looks forward to.

"I think I'm ready to lead a college," he said. "I have the experience, the background and the energy. And I think Idaho is a great place to live. The college is already doing great things and is poised to do even more great things."

Outside of work, Parrella enjoys playing racquetball, rating himself a B player and jokes that he hopes he's at least competitive if he plays UI President Chuck Staben. Another passion is fly fishing.

"I'm hoping to get involved in the community as well," he said when selected as dean in October. "I went to the Moscow Farmers Market downtown and it just seems like the community is pretty tight-knit and my wife, Deborah, and I are looking forward to getting involved," he said. ■

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# The Craft Beverage and Modernization Tax Reform Act: *A bill for all beer*

By *Katie Marisic, Federal Affairs Manager of the Brewers Association, and Joe Heaton, Director of Federal Affairs at the Beer Institute*

**A**S representatives of brewers and suppliers, we at the Beer Institute and Brewers Association understand how critical grain is to making the quality beer Americans enjoy every day. We live by the phrase “no barley, no beer.” Beer has been a dynamic industry in America for centuries. Today, there are more than 4,000 breweries in the country, the highest total since the 1870s. The beer industry creates jobs, supports other businesses and pours billions of dollars into the economy.

But an outdated tax code is placing an undue burden on this industry and could become a barrier to growth for brewers, importers and also brewer suppliers.

The Craft Beverage Modernization and Tax Reform Act (H.R. 2903, S. 1562) gives brewers the needed capital infusion to invest in their companies and boost production in order to meet consumer demand and invest in product innovation giving consumers more choice when ordering their favorite alcohol beverage.

Although various pieces of legislation aimed at recalibrating the federal excise tax on beer have been introduced in Congress over the years, none have captured the spirit of the whole alcohol beverage industry like the Craft Beverage Modernization and Tax Reform Act (also known as CMBTRA). This bipartisan legislation introduced by Senators Ron Wyden (OR) and Roy Blunt (MO), and Representatives Erik Paulsen (MN-3) and Ron Kind (WI-3), creates a fair, equitable and comprehensive tax structure for brewers, beer importers, as well as wine and spirits, while modernizing antiquated regulations.

For the past 25 years, the excise tax on beer hasn't changed, becoming a burden on beer itself. For the brewing industry, if passed, CMBTRA would recalibrate the federal excise tax to



provide relief for small and large brewers and importers. These new excise tax rates recognize the changes in the brewing industry that have occurred over the last several decades. There are brewers in every single state and corner of this country and this critical and comprehensive legislation positively affects them all.

Here's how it works. CBMTRA reforms the federal excise tax structure on beer by:

- Reducing the federal excise tax to \$3.50 per barrel on the first 60,000 barrels for domestic brewers producing fewer than 2 million barrels annually and reducing the amount they pay from 60,001-2 million to \$16 per barrel.

- Reducing the federal excise tax to \$16 per barrel on the first 6 million barrels for all other brewers and all beer importers.

While overall manufacturing employment in the U.S. declined from 2007-2013, brewing has been a bright spot. Overall the beer in-

dustry contributes nearly \$253 billion in economic output - equal to about 1.5 percent of the U.S. Gross Domestic Product. Beer is an employment intensive industry, with jobs in brewing growing more than 23 percent from 2007-2013 according to Economic Census data. The total jobs impact from the U.S. brewing industry is 1.75 million, with small brewers employing over 115,000 full- and part-time employees. Additionally, one out of four small brewers

that produce between 5,000-15,000 barrels per year, is running at greater than 80 percent of their capacity.

The roughly \$130 million saved through this recalibration of the tax code allows breweries across the country the possibility to create additional job opportunities and gives them the means they need to expand to meet the growing demands for their products. As Bill Butcher of Port City Brewing located in Alexandria, VA puts it, “The savings we would realize by passing CBMTRA would enable us invest in additional capacity. In the very first year, we would be able to buy two new fermentation tanks. For every tank I add, I have to hire two new brewers to fill this new capacity. These are well paying, permanent and skilled jobs that we would be adding.”

The effects of CBMTRA will be felt beyond the brewery doors too. Barley production is valued annually at over \$900 million dollars.

Additionally, barley contributes to the nearly 9,000 brewing jobs in Idaho alone. These numbers only stand to increase as brewers have the ability to increase capacity.

In addition to the tax recalibration benefits, this legislation eases a number of burdens for brewers, including simplifying label approvals and repealing unnecessary inventory restrictions.

By recalibrating the taxes on brewers and importers these businesses have the ability to create more jobs for the industry and beyond. For instance, every one job in a brewery could generate one job in agriculture, one job in transportation, three jobs in distribution, seven jobs in business services, twelve and a half jobs in packaging, machinery and other industries and more than twenty jobs in retail.

Because CBMTRA will have such a positive impact on brewers, importers, and brewing suppliers, it is supported by both the Brewers Association and the Beer Institute along with the National Barley Growers Association, the Glass Packaging Institute and the Hop Growers of America.

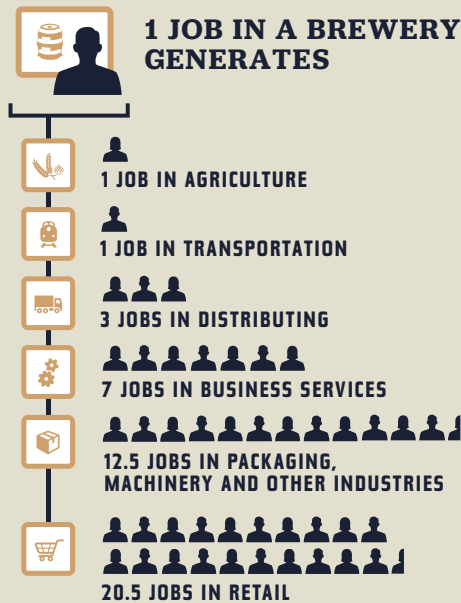
Congress has also heard our call. In just a few short months, CBMTRA has gained the support of over 160 members of the House of Representatives, including Idaho Congress-

man Mike Simpson. Additionally, over 30 Senators have lent their support to the bill.

Our work is far from over, however. Both the Beer Institute and Brewers Association will continue to advocate for CBMTRA until we see its passage. We hope that you'll be part of our team and talk to your Representative and Senators and ask them to cosponsor CBMTRA, and to work for its passage.

Our strength is in our partnership. Only by working together will we be able to see meaningful reforms to the tax code for brewers. Only as one team, will we be able to make these critical changes to the tax code that will result in growth for our industry. Let's

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®



Alex and Leah Reed

- Alex farms approximately 900 acres in Twin Falls and Owyhee counties
- Farm is headquartered near Filer
- Wife — Leah
- Children — Cash (6), Abel (3) and Lela (1)

# Grower Profile

# Alex Reed

By *Cindy Snyder*

**A**LEX Reed returned to farming full-time four years ago after working as a lineman for a power line contractor for a decade. Coming back to farm at a time when commodity prices were strong was an incentive, but the primary reason was to raise their young family on a farm as both he and his wife had been.

### What brought you home to farm?

When I graduated from high school in 2000, I decided to go to school to become a lineman. My dad was in his 70s at the time and had leased out the home farm northwest of Filer.

I spent about 10 years building big power transmission lines, often using a helicopter assist, across the West. Along the way I met my wife, Leah, who was also raised on a farm. I was living in Colorado when my dad called to say that the home farm was for sale and asked if I wanted to buy it.

That was in 2009. I bought 160 acres the first year, then a 40, another 40 and then a 100-acre piece. Putting pivots on those pieces allowed me to irrigate from my phone while I was still building transmission lines. I'd come home on the weekends to check on the crops and do fieldwork.

After a few years of doing that, Leah and I decided to move to the farm full-time. Leah teaches kindergarten at Filer Elementary School.

### Had you always wanted to farm?

Not really. I was part of the Barley Kernels 4-H Club as a teenager and raised malt barley for Coors. And I'd set water when I had to.

My dad had Thoroughbred race horses that we were moderately successful with at times. We traveled around California, Oregon and Washington – and of course, Boise — to the races. We also had a few cows around.

But I always remembered the fun times I had when I was growing up on the farm. My wife was also raised on a farm and we wanted to share those values with our own children.

We've got everything — cows, donkeys, horses, sheep, goats, pigs, a dog. My kids love to go a with me to help move wheel lines, check pivots and feed cows.

### What's the greatest challenge you face?

Getting started as a young farmer takes a lot of experience, capital and knowledge. I'm limited on all three. I will get there eventually, but I have a lot to learn.

My grandfather was a farmer but he died before I was born. My dad is now in his mid-80s and can only help with advice. Farming has changed a lot from the days when he started plowing with horses and now we've got GPS tractors.

I am grateful that I have plenty of friends and neighbors that I can ask for advice. I may or may not listen to that advice but they have been generous.

I also graduated from Leadership Idaho Program and participated in the Wheat Marketing Tour sponsored by the Idaho Wheat Commission. Leah and I are co-chairs of the Twin Falls County Farm Bureau Federation's Young Farmers and Ranchers program. I've met a lot of friends through those opportunities.



Pictured above: the Reed family

profitable in a year like this when all commodity prices seem to be down 20 percent. You've got to respect your inputs. There is increasing pressure to be more efficient.

### What does sustainability mean to you?

Sustainability means staying in business. I'm willing to risk a lot — even a farm — to try new things, to remain progressive. That means staying on top of the numbers and the business plan, while always trying to buy the next farm.

We bought the equipment we use the most — mostly to work the ground — and custom hire other operations. That can cause some scheduling issues, so much of farming is timing. I've been using some one-step planting practices to ease that crunch in the spring. Buying land, rather than equipment, seems more important at this stage in my life.

But staying in business also means taking care of the soil. This will be the first year I've farmed on the Salmon Tract (a small, chronically water-short irrigation project) located south of Twin Falls). I also farm on Blue Gulch, in Owyhee County, where water is also limited.

On the Blue Gulch farm, I use a wheat/barley and bean rotation to conserve water. I've also planted winter wheat, triticale and turnips to use as a cover crop to build soil fertility and also provide winter feed for the cattle herd. Winter wheat is a cash crop, but it can also be a cover crop to utilize winter moisture and provide livestock grazing.

### What's your philosophy on farming at this point in your life?

If you're not growing, you lose your edge. But I still keep my lineman's card up-to-date — just in case. ■

### What was the most interesting aspect of the Wheat Marketing Tour?

I'm grateful for the opportunity to go and learn about all the different aspects that make exporting wheat come together. Seeing all the research the Wheat Marketing Center is doing to help get our product overseas was interesting. Learning how the falling numbers test is done and how variable it can be was an eye opener.

But the best thing was developing friendships with other farmers in other parts of the state and learning how they do things on their farm. I'm glad I finally planted some wheat so I could go.

### How important is marketing to your operation?

Marketing and knowing production costs are critical when you are a young farmer, especially now when commodity prices are weaker. I have a written business plan and a budget for every field and for every crop. I may adjust that plan if commodity prices change significantly.

I try to maintain a balance between a healthy crop rotation and following the markets. Tracking where markets have been and then predicting where they may go is important when I've had to borrow money to farm.

Malt barley, winter wheat, corn (silage and grain), dry beans, carrot seed and hay are all crops that have been in my rotation. I have also tried sustainable beef production and am interested in putting a small robotic dairy on my farm. A 60- to 70-head dairy would not require a confined animal feeding operation permit. I'm always looking for something new to try, a new way to diversify the operation.

I just put pencil to paper and do the math. I do my best to be

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# Big data in agriculture

By Chris Carrier, New Holland Precision Land Management™ (PLM™) Marketing Manager

**D**ATA, technology and predictive analytics are expected to define the next era of agriculture. Today, precision farming is helping growers improve their efficiencies, but farming data will enable them to link technology with science, taking their yield production to a whole new level.

Unlike other forms of businesses, growers place their entire business on the line every year with the decisions they make. Finding solutions for managing their farming data better and more efficiently will help them make informed decision to better plan their businesses, maximize their yield production and make informed farm management decisions.

Technologies, such as New Holland's PLM™ Connect, enable growers to easily and securely transfer their data to their agronomist and data service providers, who can then bring value to that data through variable rate application subscriptions and recommendations for planting and fertilizing.

New data-based planning tools, combined with weather modeling, will enable growers to determine the best time to plant, fertilize, spray and harvest their fields. More efficient data management will enable agronomists or data service providers to provide growers with variable rate application prescriptions for managing field variability and making sure the right amount of inputs are being applied to the right places. Data or maps generated from satellite imagery or drones will help manage the growing season by monitoring crop health, identifying insect problems, and providing data to produce variable rate prescriptions for sprayers.

## Who owns the data?

Farming data holds a great amount of power, and if used for the right purposes, it has the potential to revolutionize agriculture. However, there are also concerns. Organizations such as AgGateway and the Open Ag Data Alliance (OADA) are working to create standards for the use of farm data, transparency on how



Growers can make informed decisions with better, more efficient management of farming data. Technology, like New Holland's PLM™ Connect, provides a means to easily and securely transfer farm data, helping growers streamline their data into informed, smart farm management decisions.

it is used, and data privacy.

At New Holland, we believe that the grower owns any data generated by their machines performing activities on their farm and should be able to choose who has access to it. PLM Connect wireless data transfer enables growers to easily and securely transfer their data back to their farm office or to a trusted third-party service provider of the grower's choice. New Holland may use select machine data to collectively analyze for quality improvements, but neither New Holland nor New Holland dealers have access to the grower's agronomic data. It should also be noted that the PLM Connect portal provides built-in administrative levels that enable the grower to control the amount of access third parties have to their data.

New Holland's parent company, CNH Industrial, is a founding member of the Open Ag Data Alliance, a not-for-profit community that is working to create a set of open APIs (application programming interface) for securely using data with the cloud, and ensuring that producers retain control over who can use their data. The OADA is actively working to ensure the security of farm data,

privacy and interoperability between different systems. New Holland is a proud member and supporter of the OADA.

## PLM Connect wireless data transfer

With PLM Connect, New Holland is providing growers with smart solutions for improving their machine efficiencies, as well as a solution for connecting their entire farm operation. PLM Connect is not only able to keep growers connected with their machines in the field, optimizing fleet efficiencies and productivity, but it also enables them to wirelessly transmit field data.

New Holland growers can use this technology to wirelessly transmit data from their machines to the farm office or to a trusted advisor without using a memory card or USB stick. The grower or a third party advisor (only with permission granted by the grower) will be able to access the field data through the New Holland cloud. The grower's third party service providers will then be able to analyze that data and provide the grower with variable rate application prescriptions, and/or recommendations for planting and fertilizing their fields. ■





# Get paid – sell to licensed buyers

By Dave Ogden, Manager Idaho Warehouse Control Program

**T**HE Idaho Commodity and Seed Indemnity Fund programs were last changed significantly in 2004 and 2002. The commodity and seed producers back then had suffered through 10 years of crop buyer failures resulting in indemnity fund payouts of over \$10 million to producers. The crop producers in Idaho, like in other states, wanted some financial protection from inept, unfortunate, and sometimes dishonest crop buyers. The legislated changes produced programs with reasonable financial standards and business practices for crop buyers that was implemented in the form of a licensing and inspection program.



Since then there have been no failures of licensed commodity dealers or warehouses. There has been one small seed buyer failure. The producers have funded these programs from assessments withheld from contract settlements paid to them by licensed buyers who purchased their crops.

The Commodity Indemnity Fund (CIF) now has a balance just short of its \$12 million maximum, which has accumulated from a .002 assessment on contract settlements paid to producers by crop buyers. CIF assessments have been suspended for now due to the fund having reached its maximum amount, and will not begin again until the fund drops to \$10 million. The Seed Indemnity Fund has a balance of \$7.5 million collected from assessments of .005 on contract settlements to seed producers. SIF assessments will continue until the fund reaches a maximum of \$12 million, which will be in 7 to 8 years from now.

In the past few months some new buyers have been added to the Idaho licensing lists available at [www.agri.idaho.gov](http://www.agri.idaho.gov) under the Warehouse quick link. There are a number of financially sound licensees for producers to sell their crops to in Idaho. Be safe and always sell to licensed buyers in order to get paid for your crops which took all year to produce.

It has been my privilege and honor to serve the agricultural business community for more than 8 years. I will retire on June 30, 2016. I wish all the producers and buyers many successful crop years into the future. Since being involved in this ISDA program, I appreciate, even more, the deep knowledge and skill all of you put forth to bring food and drink to me and my family, and to the world. And I have developed a habit of reading the Capital Press to keep up on your situations, and I plan to continue with that. Thanks and best wishes. ■

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# Rolling on the river

By Cindy Snyder

**B**Y numbers alone, the Columbia Snake River System is huge. The Snake River stretches 1,078 miles from western Wyoming, through southern Idaho and up to Washington's Tri-Cities hub where it joins the Columbia River. The Columbia River itself runs 1,243 miles from British Columbia, Canada, south into Washington and then turns west to form most of the border between Washington and Oregon before it enters the Pacific Ocean.

The drainage basin for the river system is roughly the size of France and extends into

seven states and one Canadian province.

But for something that large, many of us tend to forget how critical the system is whether providing irrigation water, generating electricity, managing floods or moving commodities to market.

"We take for granted the infrastructure outside our door or on the river," said Kristin Meira, executive director for the Pacific Northwest Waterways Association. "We need to remember that it hasn't always been there and to speak up for it."

## Fish or dams — or both?

Striking a balance between the needs of river users with the needs of native fish populations has been a challenge since Lewis and Clark explored the region. The challenge became more pronounced after the 1930s when federal dams were built to provide electricity and flood control.

Construction of the four

lower Snake dams in the 1960s and early 1970s caused many to believe the balance had shifted in favor of river users, which include hydro-power and navigation. And then, in 1990, only 78 fall chinook salmon returned to the Snake River above Lower Granite Dam, about 35 miles west of Clarkston, Wash. The decline of the run was due to historic overfishing and other human impacts.

It was a wake up call for the region and galvanized efforts to restore fish runs.

Contentious lawsuits dogged early efforts, but collaboration has proven more effective. The Columbia River Inter-Tribal Fish Commission, which represents four Indian tribes that have fishing rights on the river, have partnered with other agencies to restore more than 660 miles of stream habitat in the last decade. At the same time, fish "slides" have been installed on dams to help fish migrate and habitat and hatchery programs have expanded. Bonneville Power Administration has spent hundreds of millions of dollars on fish recovery programs.

Those efforts are paying off. Snake River chinook had their second best year ever recorded in 2015 with 456,000 chinook passing McNary Dam and 80,000 over Lower Granite Dam. Counting began in 1938 after Bonneville Dam was constructed.



Tidewater's Challenger picking up a loaded grain barge at Mid Columbia Producers at The Dalles on a spring morning

PHOTO COURTESY OF JOHN MCMANIGAL

Paul Lumley, executive director of the fish commission, said the success of the 2015 fall chinook run reflects the region's commitment to healthy salmon runs and the collaborative spirit that has made it possible.

But salmon advocates discount the numbers, pointing out that the numbers fail to distinguish between wild salmon and hatchery-raised salmon. Many environmental groups continue to call for removal of the lower Snake River dams.

The majority of fish returning are from hatcheries, but Becky Johnson estimates 30 to 50 percent of the fish in the 2015 return are natural origin fish. That means they were hatched in the gravel of the Clearwater, Snake, Grande Ronde and Imnaha rivers. Johnson is the production manager for the Nez Perce Tribal Fisheries Division.

### No longer needed?

As salmon numbers have increased, dam removal advocates have shifted their argument by saying barge traffic has declined, rendering the system of dams and navigations locks obsolete and a bad deal for taxpayers. A 20 percent drop in wheat shipments between 2010 and 2011 is used to bolster that argument.

However, according to the Port of Lewiston, wheat movement remains strong. An average of 22.5 million bushels of wheat annually moved through the Lewis-Clark Terminal from 2012 to 2014 compared to an annual average of 18.7 million bu. between 1994-1996.

Approximately 50 percent of U.S. wheat exports leave through the Columbia Snake River System. In 2012, nearly 10% of U.S. wheat exports moved by barge through the Snake River dams alone. In addition, 30 to 40 percent of the state's barley and 25 to 35 percent of peas

A tug boat and grain barge inside the Little Goose Navigation Lock waiting for the lock to empty

and lentils are also transported on the river system.

While it's true that the Great Recession, labor issues at the Port of Portland and a river closure in 2010-11 to allow for repairs at the dams reduced shipping traffic; it's not fair to say that cargo can be easily shifted to a crumbling highway system or clogged rail system.

To move approximately 100 million bushels of wheat (roughly the 2013 crop) would take:

- 109,890 semi trucks (each transporting 910 bu.)
- 286 100-car unit trains
- 204 barge tows (each tow is 4 barges)

Barging on the river is not only efficient, it is the lowest emission transportation mode, Meira said.

Additionally, without the four lower Snake River dams, the ports of Lewiston and Clarkston, and Whitman County could not function. In 2014, the Port of Lewiston employed 1,800 people and generated \$30 million in direct regional spending. The Port of Clarkston is smaller, employing 400 people and contributing \$2 million to the local community.

### Dams need you

Despite the economic benefits to the Lewiston community, Port of Lewiston Manager David Doeringsfeld said the port's greatest challenge is communication and letting taxpayers know how their dollars are being spent.

Meira echoes that concern. Although the



Obama Administration and Congress have made significant investments in the dams and navigation locks to improve the future reliability and safety of the locks, no one likes to pay taxes.

The federal government is taking the long view and installing components in the navigation locks that are designed to last 50 years during repairs to the locks scheduled between December 2016 and March 2017. Yet Meira knows groups continue to pressure the President and Congress to remove the dams.

That's where grain growers come in. As one of the groups who benefits from the river system — whether for moving grain or heating their home or pumping irrigation water — growers need to advocate for it.

Alex Reed, a wheat farmer from Filer, had an opportunity to do just that while flying this winter. At an airport, he noticed a couple wearing attire featuring a group associated with the dam removal efforts. He struck up a conversation with them and learned they were from Montana and had been active in an effort to remove a mining dam.

Reed talked to them about the benefits the lower Snake River dams provide to him as a wheat grower. They had a good conversation. He doesn't know if he changed their mind or not, but at least they stopped to consider another opinion.

"If you don't speak up, who will?" he asked.

Meira hopes more Idahoans will speak up, especially when talking with their local, state or federal elected officials.

"If you are a river user, you are a stakeholder. Think about the role the river plays in your life and your business," she said. "If you are getting a benefit from the river in one way or another, tell your elected officials what that benefit is: cheaper electricity, lower shipping costs, access to foreign markets for your crop." ■

### For more information

Port of Lewiston — <http://portoflewiston.com/>  
Snake and Columbia river system — [Snakeriverdams.com](http://Snakeriverdams.com)



During the 2010-2011 river closure for repairs to locks, a crane lifts a heavy section of the lock door into place.



# Building inelastic demand for soft white wheat

By Shawn Campbell, Assistant Director, US Wheat Associates West Coast Office

## Definition: Inelastic demand

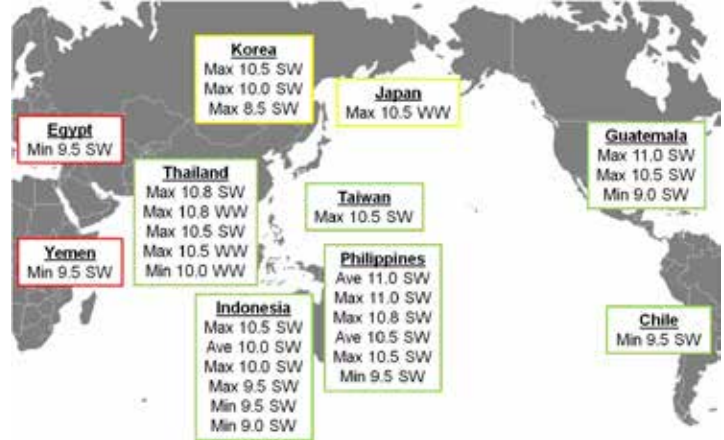
Demand whose percentage change is less than a percentage change in price. For example, if the price of a commodity rises twenty-five percent and demand decreases by only two percent, demand is said to be inelastic.

**T**HE U.S. wheat market has seen better days. This year marks the third year in a row of world wheat production, which when combined with muted demand growth due to a global economic slowdown, has led to mountains of grain building up. The strength of the U.S. dollar is also putting the U.S. farmer at a competitive disadvantage, a fact has been exacerbated by the currencies of our major competitors all being at 10 year to record lows. The result, export prices for Soft White (SW) Max 10.5 protein wheat so far this marketing year have declined 7 percent compared to last year and exports have fallen 8 percent.

While the decline in price and exports for SW is certainly not a good thing for farmers, it certainly could be worse. Looking at the other U.S. wheat classes shows exactly how bad things could be. As of the end of January Soft Red Winter (SRW) export prices have collapsed 16 percent and exports have fallen 12 percent when compared to last year; Hard Red Winter (HRW) export prices have declined 20 percent and exports 22 percent; and Hard Red Spring (HRS) export prices have declined 29 percent and exports 17 percent. Looking at this data, the question becomes, why have SW prices and exports held up so much better than the other wheat classes?

While most farmers compare prices on a year to year basis, most overseas flour millers compare them based on the prices of other wheats at that same point in time. For instance, at the end of

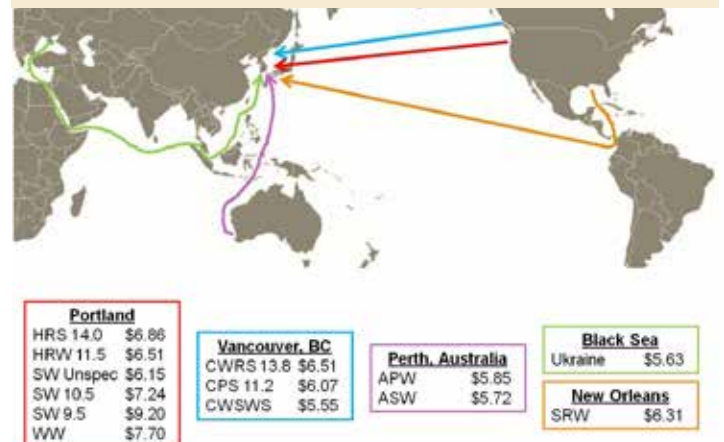
## Top 10 importer SW protein specs



January a flour miller in Korea could land SW Max 10.5 protein for \$7.24 per bushel, HRW 11.5 at \$6.51 per bushel, HRS 14.0 at \$6.86 per bushel, SRW at \$6.31 per bushel, Canadian Western Red Spring (CWRS) at \$6.51 per bushel, and Australian Standard White (ASW) at \$5.72 per bushel. SW is the most expensive wheat in the world, yet the overseas demand for it has remained mostly unchanged.

This can largely be attributed to the fact that SW, when used for traditional soft wheat end products, has little competition overseas. While other countries do grow soft wheats, they tend to be either of lower quality and/or produced in limited non-exportable amounts. The only major competitor for SW is SRW, and here again SW has the advantage. SW tends to have more consistent quality and production, higher flour extraction rates, lower moisture content, lower dockage, and lower levels of mycotoxins. SW's competitive advantage is thanks to a combination of environmental and economic factors. These include SW's smaller and drier production area, many

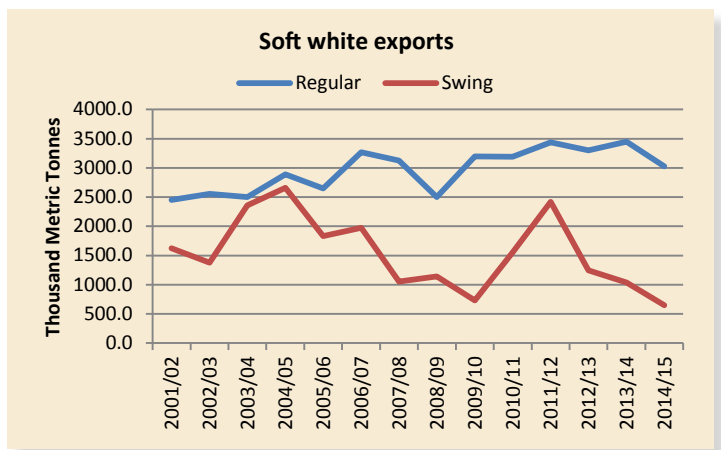
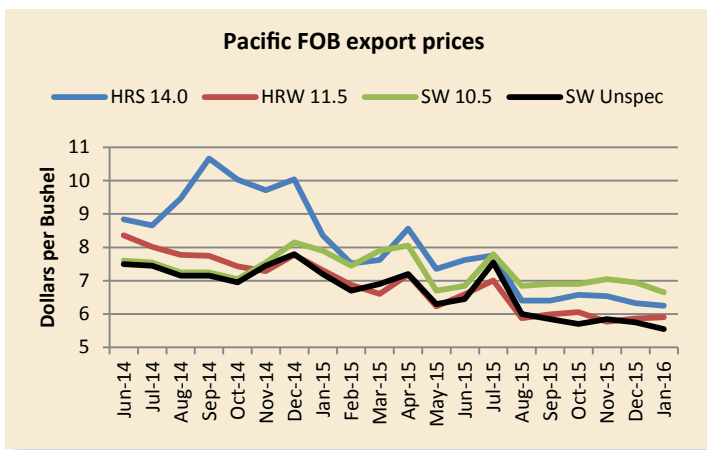
## Landed wheat prices to Korea



## 2015/16 vs. 2014/15

	SW 10.5	HRS 14.0	HRW 11.5	SRW
Price	↓ -7%	↓ -29%	↓ -20%	↓ -16%
Exports	↓ -8%	↓ -17%	↓ -22%	↓ -12%
Total Use	↑ +6%	↓ -12%	↓ -2%	↓ -23%

Data is Jun-Jan 2015/16 vs. Jun-Jan 2014/15



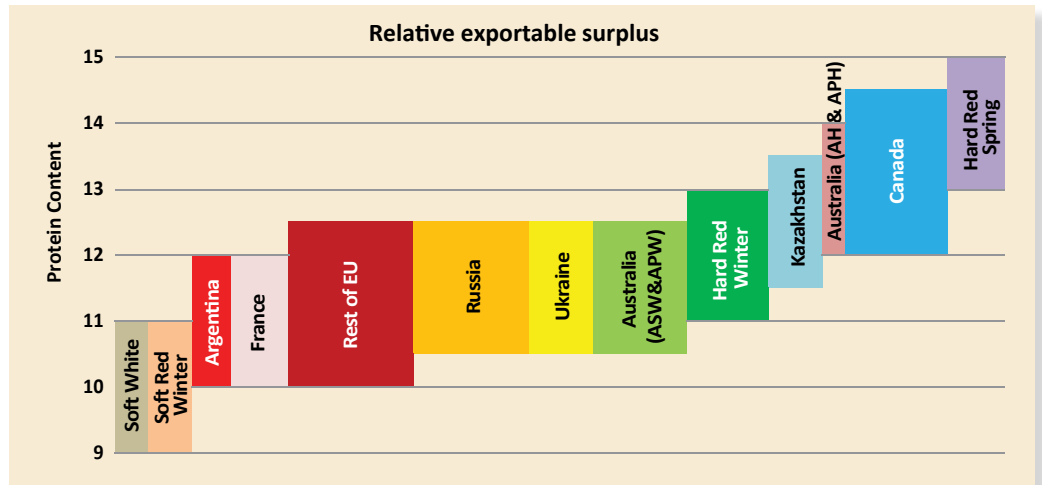
farmers in the Pacific Northwest having fewer planting options, and the fact that SW is sold to some of the most quality discerning markets (Japan, Korea, and Taiwan) in the world.

Historically SW has always been divided into two markets, regular buyers who purchase SW because of its high quality, and swing buyers who purchase SW because in most years it is relatively cheap compared to other U.S. wheat classes. Over the past decade, rising exports from the Black Sea Region and European Union, propelled by low prices, have eaten away at the SW swing market.

However, over the same period, the number of regular buyers has increased. Lost markets in the Middle East have been replaced by new markets in Southeast Asia and Latin America. Markets that have shown that they are willing to pay for SW, even when it is the highest priced wheat in the world.

This market shift has not come without some changes. Buyers who are willing to pay more, also expect more. Over the past decade buyers have begun to demand a greater myriad of protein specifications, where once an entire country would have one purchase specification, now single companies have multiple specifications; mycotoxin and other phytosanitary testing has become common place; new tests, such as Falling Number, have been introduced; and dockage content has become increasingly important. This has resulted in changes throughout the marketing chain. Exporters have installed wheat cleaners at their terminals; up-country elevators have begun to segregate by protein, and farmers have faced discounts for wheat that does not meet the new demands.

While no farmer is ever pleased when they find themselves on the wrong end of the discount scale, it has been an investment that has resulted in the increasingly inelastic SW market which we see today. In many ways these discounts have been just as important as the marketing efforts of the U.S. Wheat Associates and the maintenance of SW quality via the PNW Wheat Quality Council and the PNW Preferred Wheat Variety List. Overseas competition continues to grow every year, and due to its geographic location compared to the majority of markets, the U.S. cannot compete on just a price basis. The way forward is to offer value, something to make the higher price worth it. For SW, this has been to create a high quality differentiated product. The creation of such a product has had costs,



but as this year shows, they are starting to pay off.

It is worth noting that 2015/16 has not been a good production year. Two years in a row of higher than average protein levels have resulted in significant protein premiums. As long as there are no major issues with the 2016/17 crop, these premiums will likely drop back to more normal levels as we move into the next marketing year. The benefits of growing inelastic demand for SW is not something that can be measured year to year, but rather must be gauged over a greater period of time. The markets will fluctuate as they always have. At the beach, waves roll in and roll out, but the tide is what is actually important. ■

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Aerial view of a Grain Craft milling facility conveniently located near a rail spur in Blackfoot, ID

# Why is domestic wheat demand good for Idaho farmers?

**W**HILE being one of the top consumers of Idaho wheat, Grain Craft may not be a familiar name. Established in May 2014 when Pendleton Flour Mills and Milner Milling acquired Cereal Food Processors, Grain Craft is a relatively new name in a very mature industry. Grain Craft is the largest independent flour miller and the third largest flour miller in the United States, operating 15 mills in nine states. Seven of those mills are in the Northwest, including Blackfoot, Idaho, Salt Lake City and Ogden, Utah, Pendleton and Portland, Oregon, and Billings and Great Falls, Montana.

Grain Craft has a strong history in Idaho, working closely with its origination partner Thresher Artisan Wheat, and with wheat breeders in the Northwest to grow more acres of high quality wheat through an identity preserved, variety specific program. Between its mills in Idaho and Utah, Grain Craft uses over 20 million bushels of Idaho wheat each year. That is approximately 20 percent of Idaho's wheat production, and Grain Craft is excited to work with Idaho farmers to originate even more high quality Idaho wheat in the coming years.

This partnership has created a larger domestic market for Idaho wheat, giving farmers

additional domestic markets to help balance inconsistent world wheat prices and export demand. Milling premiums for hard wheat varieties in the domestic market have helped stabilize wheat prices, insulating the region from bad export years. Idaho growers produce high quality wheat and this is turned into high quality flour by Grain Craft with many loyal end-users.

Grain Craft is pleased to be a member of the Idaho agriculture community. The company's success is built on collaboration with local elevators, breeders, and growers. This partnership helps all grow and be successful.

— Alan Koenig, Grain Craft

# Private companies promote UI Platinum variety

**L**ANSING Trade Group and Limagrain Cereal Seeds have teamed up to promote a new hard white spring wheat variety, UI Platinum, developed by the University of Idaho, and support further UI wheat breeding research.

With very strong flour functionality, UI Platinum is a good fit for domestic mill markets. Mill demand for hard white wheat is increasing, particularly for whole wheat products, such as whole wheat tortillas and noodles, said Jim Rooney, a merchandiser for Lansing in Idaho Falls.

In addition to exceptional end-use qualities, UI Platinum has pulled high scores in the field. In 2014, the variety averaged 150 bushels per acre and 13.8 percent protein in University of Idaho extension irrigated trials at Rupert and Aberdeen, he said.

The quality of Lansing's grain production from UI Platinum was "very good, close to 13 percent, and the samples we sent out were very well received by domestic mills," he said.

Grain from the variety also recently received very good ratings from the Pacific Northwest Wheat Quality Council, he said.

In addition to good yields and high protein, UI Platinum matures early, is relatively short, has a good stand and doesn't have an excessive amount of straw. It also has a good rating against incidence of Fusarium Head Blight and outperformed most existing hard white wheat varieties in university trials, he said.

The variety is the result of a successful public-private partnership between the University of Idaho, Limagrain and the Idaho Wheat Commission.

Now Limagrain and Lansing are teaming up to be stewards of the variety and to return a revenue stream to the university for wheat research and development, Rooney said.

The companies will help promote the variety, drive sales and guarantee broad market access to seed for production and grain for end users, he said.

"This is the first year we have quantities available for commercial production, as well as registered seed for companies interested in starting their own program with UI Platinum," he said.

There is enough seed this year for 5,000 acres of commercial production and 2,000 acres of seed production. Next year, there will be enough seed for 50,000 acres of commercial production, he said.



Dr. Jianli Chen, the developer of UI Platinum, standing in a foundation seed field of the hard white spring variety

The promotional part is getting it out there so everybody can get a taste of it and become familiar with the variety, he said.

This year's production on 5,000 acres would provide at least 500,000 bushels for millers to test and plenty of registered seed to supply the market for next year's needs, he said.

—IWC staff

## Growers' help needed to improve crop insurance

**S**PROUT damage from heavy rains in southern and eastern Idaho at the end of the 2014 growing season made evident the inadequacy of current crop insurance for wheat growers, which is based on yields and not quality.

USDA's Risk Management Agency has expressed a willingness to make changes to the quality standard for wheat by addressing the low falling number scale, but the agency wants to address the issue

nationwide and needs strong data to support any changes.

Growers can assist the effort by providing multiple years of settlement data, at least the last six years but preferable the last 10 to 12.

RMA does not need and would prefer not to receive growers' names, addresses and tax ID numbers.

Growers are asked to send copies of redacted settlement sheets to Blaine Jacobson at [blaine@idahowheat.org](mailto:blaine@idahowheat.org).

—IWC staff



# Improve wheat yield and grain protein with dairy manure applications

By Amber Moore, Olga Walsh, Juliet Marshall, and Xi Liang

**M**ANURE, there is a lot of it in Southern Idaho's Magic Valley region. Idaho's dairy industry has propelled Idaho to the second highest milk producing state, as of 2015. One of the biggest questions surrounding the dairy industry is: What do we do with all of that manure, and what is its value to Idaho growers? Farmers have known manure applications help their crops grow since animals were domesticated. But where and how does dairy manure fit into the established cropping systems of the Magic Valley?

University of Idaho researchers are currently evaluating how dairy manure applications impact wheat and other high-value crops commonly grown in Southern Idaho. The goal of the study is to gain a better understanding of how repeated dairy manure applications impact a wide variety of factors related to crop yield and quality, soil health, and environmental quality in a wheat-potato-barley-sugar beet crop rotation.

Dairy manure was applied at rates of 16, 32, and 48 ton/acre (wet weight basis, 50% moisture content) either annually or biennially from 2012 to 2015 on irrigated research plots located on the USDA ARS research station in Kimberly, Idaho. Annual treatments were fall-applied every year, while biennial treatments were fall-applied every other year prior to planting of the small grain crop (i.e., spring wheat or spring barley). A fertilizer-only treatment based on current University of Idaho Extension recommendations for each crop was also included, to help understand how manure systems compare to non-manured systems. A control treatment (no supplemental fertilizer or manure added) was also included. All treatments will continue until 2020.

## Soil nutrient accumulations

In the third year of this eight-year study, soil nutrients accumulated with increasing manure rates and/or manure application frequency (Table 1). In year 3 (March 2015), soil Olsen P levels finally increased over the USDA NRCS code 590 threshold of 40 ppm of the study for both annual and biennial applications of dairy manure at rates of 32 and 48 wet ton/acre. Above this threshold, growers are required to use manure application rates that do not exceed the P uptake potential of the crop. This suggests that these application rates and frequency result in P accumulations greater than P removal potential of the barley, sugar beets, and wheat that had been grown in this field since 2013. Relationships between soil nutrients and wheat yield components are currently being evaluated.

## Grain yield and grain protein

The 2015 grain yields trended higher at the 16 and 32 ton/acre manure application rates in comparison to fertilizer-only treatment plots, regardless of application frequency (Table 2). Yield increases may be attributed to improved soil health with increasing soil organic matter levels, in-season release of N from manure organic N compounds, and improved soil fertility overall. However, yield losses occurred at the 48 ton/acre rate for both annual and biennial treatments (Table 2). Lodging was also severe at the highest manure rates, which was likely contributing to yield losses at the heaviest manure rates (Figure 1; Table 2). One explanation for lodging issues on manured soils is the excessive accumulations of K and other nutrients in the straw, which could be compromising stem strength.

Similar to 2013, increasing manure application treatment rates (an-

**Table 1. Spring 2015 preplant soil nutrient to repeated dairy manure applications in Kimberly, Idaho at the 0-12 inch soil depth.**

Dairy manure rate (wet ton/acre)	Frequency of applications	Total N (%)	Soil organic matter (%)	Soil Nitrate-N (ppm)	Olsen P (ppm)	Olsen K (ppm)
Control	NA	0.09 de	1.3 e	12.0 f	9.6 e	133 e
Fertilizer	NA	0.09 e	1.3 e	13.8 f	15.8 e	145 e
16	Biennial (Applied in 2012 and 2014)	0.11 cd	1.6 de	24.3 e	36.0 d	263 d
32		0.15 ab	2.0 c	32.5 d	65.8 c	478 c
48		0.15 ab	2.3 ab	53.0 b	90.8 b	730 b
16	Annual (Applied in 2012, 2013, and 2014)	0.12 c	1.7 d	27.5 de	39.3 d	350 d
32		0.14 b	2.2 bc	45.5 c	75.5 bc	660 b
48		0.16 a	2.5 a	59.8 a	112.5 a	1,033 a





Fig. 1. Lodging was commonly seen on the heavily manured plots in the study

nual and biennial) resulted in increased grain protein content in comparison to the fertilizer-only treatment in 2015 (Table 2). The in-season release of plant available nitrate from organic N in manure is likely a major contributor to increase grain protein levels.

### How can producers use information from this study today?

The University of Idaho's researchers have observed many interesting interactions between dairy manure rates, number and timing of appli-

cations, on various crops used in the Magic Valley crop rotation system. It is still early in the study to publish guidelines but there are some findings growers might want to consider when using manure in their cropping system. Four pieces of information are needed before considering a fall manure application; soil levels of phosphorus and nitrate, the late season soil EC levels, and a plan for the next crop.

Manure applications are restricted as phosphorus (P) based applications by the ISDA, for levels above 40 ppm (Olsen P test) with surface water as the primary water source. If P levels are too high you can't apply manure. Excess P is very difficult to remove from the soil compared with salts or nitrates. There is minimal removal of P by crops and P has minimal downward movement in the soil profile. Be sure to know the ppm of P in your soil and in your manure source. It is recommended to test manure for nutrient levels to allow for an accurate adjustment of the rate of application.

Knowing your soil nitrate level is important especially if the field is highly susceptible to nitrate leaching like on sandy ground or areas with shallow ground water. In those cases the nitrate level may need to be reduced from 45 ppm to 20 ppm nitrate. Some crops, like sugar beet and barley, in the Magic Valley rotation system are more susceptible to excessive nitrate than the others. It is important to know the crop you are going to plant before you evaluate the soil tests for P and nitrate. Soil nitrogen levels can be lowered by growing crops with high N removal potential, such as small grains when straw is harvested and baled, alfalfa, and silage corn.

Copper can be an issue if using manure from dairy lagoons when enriched with copper from hoof baths. UI researchers recommend a soil test for copper on fields with a known history of using lagoon water or sludge. Copper stays in the soil, can accumulate over time and is toxic to crop plants.

Fall manure applications preceding a wheat crop are recommended at 10 to 40 tons dairy manure per acre (50-70% moisture). These rates would be expected to increase yield and quality of the crop. If you have any questions about using manure as a nutrient source, please contact your Ag professional or university extension faculty for additional evaluation of your particular manure requirements. ■

### Funding sources

This project is jointly funded by the Idaho Wheat Commission, Idaho Barley Commission, the Idaho Dairymen's Association, the Northwest Potato Consortium, and the USDA Agricultural Research Service (ARS), and the USDA-NIFA hatch program.

**Table 2. Hard red spring wheat (Jefferson variety) responses in 2015, year 3 of an eight-year long term dairy-manure application study in Kimberly, Idaho.**

Dairy manure rate (wet ton/acre)	Frequency of applications	Grain yield (bu/acre)	Grain protein (%)	Lodge rating (July 22nd)	% K in straw at harvest
Control	NA	66 d	11.1 d	1.0 d	1.8 e
Fertilizer	NA	98 abc	13.0 c	4.0 c	2.5 d
16	Biennial (Applied in 2012 and 2014)	104 a	14.2 b	5.2 bc	2.7 d
32		106 a	14.3 b	4.2 c	3.1 c
48		94 bc	15.2 a	6.7 ab	3.4 d
16	Annual (Applied in 2012, 2013, and 2014)	105 a	14.2 b	4.0 c	2.7 c
32		101 ab	15.0 a	5.2 bc	3.4 b
48		91 c	15.3 a	8.0 a	3.8 a



# Will agriculture save the planet before it destroys it?

*At the 2015 Tri-State Grain Growers Convention, Intrexon's Jack Bobo asked a question that had growers buzzing*



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By *Trista Crossley, Wheat Life Magazine*

**J**ACK Bobo started and ended his 2015 Tri-State Grain Growers Convention speech somewhat provocatively.

Bobo is a senior vice president at Intrexon, a synthetic biotechnology company that owns, among others, Okanagan Specialty Fruits, which is the company behind the nonbrowning, GMO Arctic Apple, and AquaBounty Technologies, which raises GMO salmon. He began his speech by asking the question, can agriculture save the planet before it destroys it? He ended his speech with this statement:

“The next 35 years are not just the most important 35 years there have ever been in the history of agriculture... They are the most important 35 years there will ever be in the history of agriculture, and that’s why now matters.”

Bobo’s point, that the next 35 years are the most important years in the history of agriculture, stems from a study done by statistician Hans Rosling that says the most children who will ever be born in a given year were born in 2014. From 2014 onward, the average fertility rate on the planet will begin dropping, and by 2050, it will average two children per woman, less than the replacement rate. The global population will continue to grow, reaching approximately 9 billion by 2050 because people are living longer through better health and nutrition, but slows dramatically after that.

Agriculture, Bobo said, needs to maintain productivity growth through 2050 without cutting down the planet’s remaining forests or draining the rivers, lakes and aquifers, because in many ways, “...At that point, we are good forever, because for the first time in human history, we won’t need more food.

“Think about the productivity gains that we’ve had over the last 40 years,” he continued. “If we can go from 2050 to 2100 and produce the same amount of food with 50 percent less water, we can produce more food in 2100 using less water than we do today. That would be amazing. We could produce food using 40 percent less land in 2100. That’s like taking all of Africa out of production. It all requires us to get to 2050 without screwing things up.”

But like any worthwhile quest, Bobo pointed out some of the obstacles in the path that growers need to consider. Here are some excerpts from his speech:

## **Productivity increases**

With the global population set to increase by 2 billion in the next 35 years, growers will need to produce 60 to 70 percent more food by 2050, using less land, less water, less fertilizer and fewer pesticides.

“We have to do everything better tomorrow than we are doing it today,” Bobo said.

## **Policy changes**

As the world’s population grows, it also continues to shift more towards urbanization and farther away from the farm. Bobo cited a

study that found people in cities tend to think they know more about how food is grown than people in rural areas, and if they ask for policy changes based on what they think they know, it can have a big impact on agriculture.

## **Global trends**

Bobo talked about two competing trends: the slow food movement versus high-tech agriculture and producing more with less. On one hand, consumers want locally grown food that reduces agriculture’s impact on the environment. On the other hand, they want to be able to trade that food around the world. To make his point, Bobo showed a chart of food production in Europe. Over the last 50 years, food production in many European countries has lagged behind countries like China, the U.S. or India because they’ve chosen the path of low productivity agriculture. It all comes down, he said, to choices and consequences.

“They are trying to protect the local environment by not producing as much food, but they are still eating more food. They just aren’t producing it,” Bobo explained. “So Europe is driving demand in other places because they have to import this food. Over the next 10 years, European agriculture will increase production by just under 4 percent, just ahead of sub-Saharan Africa. On the other hand, Brazil will increase its food production by 40 percent, driven by demand of its No. 1 export market—Europe. So Europe has exported its environmental footprint for agriculture to the most biodiverse country on the planet. That might not be a good idea.”

## The perception of risk

Risk is hazard times exposure, Bobo explained, adding that people are hardwired to react to hazard more than they are to exposure. That's why more people are afraid of flying (hazard is higher, but exposure is lower) versus driving (hazard is lower but exposure is higher). He redefined the formula for risk as hazard times media exposure equals perception of risk, or the "tweetification" of risk.

"If you look at things people are worried about, like terrorist attacks, then you look at things they should worry about, there is very little correlation between what people worry about and what they should worry about," he explained. "But there's a lot of correlation between what they worry about and what they read about or they hear about on



TV or on the radio. How can it be any different? You worry about what you hear about."

## Science as a stumbling block

"What I've learned is if you lead with science, you will lose with science," Bobo said. "Science in the beginning of conversation only polarizes the audience. Those that agree with you agree with you more. Those that disagree with you will disagree with you more. Trust has to come first."

Growers need to personalize their stories and explain why they farm instead of how, he advised. Growers also need to acknowledge other people's concerns.

"It means you understand they are concerned about something. Then you find ways to connect. We want to reduce the amount of water we use. We want to reduce the amount of fertilizer we use. We might disagree on ways of getting there, but if we connect on all those other things, there is a chance we can find common ground. Eventually, we can build trust. It's

only at the point that we build trust that science has any role to play in the conversation."

## The names we use matter

"When it is a Chinese gooseberry, it is a hairy fruit. When it is a kiwi, it is cute and fuzzy."

## Confirmation bias

Confirmation bias means we look for information that supports what we believe, and we ignore information that doesn't agree with what we believe. As an example, Bobo talked about a study that said organic agriculture is better than conventional agriculture. The first thing he'd do is to check the study's credentials and find out who funded it and what methodology was used. However, if he came across a study that said organic agriculture is no more nutritious than conventional ag, what would he do?

"Tweet it," he said. "You dig a little deeper when it disagrees with what you believe. This is something we all do, we just don't realize we are doing it." ■

# Hessian fly remains a threat for spring wheat production in Idaho

By Nilsa A. Bosque-Pérez, Professor of Entomology, University of Idaho

**T**HE Hessian fly, *Mayetiola destructor* Say, has been a pest of US wheat since its accidental introduction into the country over 200 years ago. While it has been present in northern Idaho for over two decades, it has never been observed in southern Idaho until last summer when larvae were found infesting spring wheat field trials in Nampa. Feeding by fly larvae on wheat results in stunting, reduced grain filling which lowers yield and quality, and weak stems that can break and fall to the ground. Yield reductions due to Hessian fly infestation of susceptible spring wheat range from 11-24%. While barley and rye might also be affected, wheat is the preferred host for Hessian fly, with spring wheat more commonly damaged in Idaho than winter wheat.

Adult flies emerge from infested cereal stubble in the spring. Females lay eggs on leaves of young plants. One adult female can lay as many as 200 to 300 eggs. Once eggs hatch, larvae move to the crown area of young seedlings where they feed on plant sap between the outer leaf sheaths and stem base. The larvae do not enter the stem. In ap-

proximately 2 to 3 weeks, larvae form puparia (or "flaxseeds"). Larvae survive the summer within puparia in dry stubble. The puparial stage allows survival during adverse weather conditions in both summer and winter. Since dry stubble can harbor fly puparia, growers are encouraged not to move wheat residue across locations.

Hessian fly infestations can be detected by examining the plants for the presence of larvae or puparia, which are typically present at a node at the base of the plant (see photo). Infected plants are usually stunted and often show lodging. In some varieties, leaves turn dark green on infected plants. While damage may be worse in wet springs, the occurrence of fly infestations is difficult to predict. Therefore, control methods are mostly preventive, with the most common being resistant varieties and earlier spring seeding to escape infestation. Additionally, crop rotation is an important management tool.

The following spring wheat varieties are resistant to the Hessian fly and are adapted to both northern Idaho and the Treasure Valley: Jefferson, Jerome, Cataldo, Louise, Diva, Whit, Glee, JD (a club wheat) and Kelse. Farmers in northern Idaho and in the Treasure Valley region are encouraged to plant these varieties



to prevent losses from Hessian fly attack.

According to information provided by Dr. Juliet Marshall, Cataldo is susceptible to stripe rust, while Kelse and Jefferson are moderately susceptible. Application of fungicides is warranted for stripe rust susceptible to moderately susceptible varieties in most years. The other varieties listed are moderately resistant to stripe rust and should not to require spraying unless disease pressure is high.

In collaboration with wheat breeders at the University of Idaho and Washington State University, we continue efforts to develop additional varieties of spring wheat with resistance to the Hessian fly and various diseases. Our research is supported by the Idaho Wheat Commission, The Washington Grain Growers, and the University of Idaho. ■



# 2015 Idaho spring barley variety performance tests and 2013-2015 yield summaries

By Juliet Marshall, Extension Specialist Aberdeen, and Kurt Schroeder, Extension Specialist Moscow, Department of Plant, Soil and Entomological Sciences, University of Idaho

## Variety testing

Spring varieties of wheat and barley are evaluated each year to provide performance information to help growers select superior varieties for their growing conditions. The tests are done using growers' fields or experiment station locations and the 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 commercial use of a variety. The number of entries is limited due to resource constraints. Individual plots were planted as 7 rows spaced 7" apart for 14' to 25' in length and replicated 4 times in a randomized complete block design. Plots in northern Idaho that were direct seeded included five paired rows, three inches apart with ten inches from center to center of paired rows.

## Information summarization

Agronomic performance data for 2015 spring barley tests are summarized by district in Tables 1-3. The state is divided into the Northern (Table 1), and the Eastern Districts (2-row barley in Table 2 and for 6-row barley in Table 3). Yield data are reported for individual sites while other agronomic data are averaged over all sites of each table. Bushel/acre 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. Thin grain percentage is clean grain passing through a 5.5/64" screen. Average values are presented at the bottom of listings and are followed by a least significant difference (LSD) statistic at the 5% level.

Average yield data from variety performance trials in 2013, 2014, and 2015 are presented in Table 4 for all districts. These data represent results of 12 site/years and can be a good indication of long-term performance of a variety.

## Information interpretation

Average past performance of a variety is the best indicator available to predict future performance potential. Variety performance can vary from location to location and year to year. The results reported in this article are for 2015 trials; previous results can be found in the spring 1992 to 2014 issues of Idaho Grain Magazine. Average performance over locations and years more accurately indicates a variety's relative performance. Try to evaluate as much information as you can prior to 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. Also consider that plots are managed according to the average expected yield, latest varietal maturity, and/or performance of the surrounding crop in a grower's field, whether wheat or barley. Varietal performance may not reflect actual performance in your field when a specific variety is managed for optimal economic performance.

Reported small differences among varieties in yield and other characteristics are usually of little importance due to chance differences in tests. Utilize the LSD statistic to determine the true difference between varieties. If differences between varieties are greater than the 5% LSD value, the varieties are considered "significantly different." This means that there is a 9.5 in 10 chance that the reported difference between varieties is a true difference and not due to other experimental factors or chance variation. If no

significant differences are determined for a trial, n.s. is used in place of the LSD.

## Further information

Variety performance information for winter wheat and winter barley has been published in the fall issues of Idaho Grain. An excellent Extension Publication for barley producers is "Idaho Spring Barley Production Guide" (Bulletin No. 742) that was updated for 2003, (see the Idaho Ag Communications website at <http://www.cals.uidaho.edu/edcomm/catalog.asp> under "crops" and "cereals"). For spring wheat producers, "Irrigated Spring Wheat Production Guide for Southern Idaho" (Bulletin No. 697) can be ordered on the same website. All these publications are free through the University of Idaho Agriculture Publications (ph. 208-885-7982) or contact your county Extension Office. Additional Idaho small grain variety performance information is available on the web at <http://www.uidaho.edu/extension/cereals/>. ■

**Table 1. Dryland spring barley performance in northern districts at Bonners Ferry, Craigmont, Genesee, and Moscow, 2015.**

Variety	Yield				North Idaho Average					
	Bonnars Ferry	Craigmont	Genesee	Moscow	Yield	Test weight	Plant Height	Lodging*	Plumps	Thins
<b>Feed</b>	bu/A				bu/A	lb/bu	inches	%	%>6/64	%<5.5/64
Camas	75	46	120	76	79	50.5	30	5	65	22
Champion	71	50	129	85	84	50.3	31	3	66	21
LCS Vespa	73	39	123	82	79	47.9	27	0	66	18
Lenetah	80	50	124	81	84	50.2	30	2	70	16
Lyon	75	44	129	77	81	47.9	30	12	67	21
Muir	71	42	112	82	76	48.0	30	13	66	19
Tetonia	70	42	117	85	78	48.1	30	2	58	25
<b>Malt</b>										
CDC-Copeland	73	32	110	76	73	47.8	32	20	68	17
LCS Genie	63	33	109	69	68	48.0	26	28	70	14
LCS Odyssey	73	41	124	83	80	46.8	27	3	73	14
LCS Overture	78	36	113	84	78	47.0	27	1	71	16
Merem	85	19	118	73	74	49.7	32	4	68	15
<b>Food</b>										
Kardia**	72	25	108	69	68	47.5	31	1	68	11
Salute	61	40	110	69	70	47.2	30	3	72	12
Transit	35	14	83	44	44	53.3	33	1	32	29
<b>Average</b>	70	39	115	76	77	48.7	30	7	65	18
<b>LSD (<math>\alpha = .05</math>)</b>	13	6	12	7	7	1.2	1	11	5	5

\*Most lodging observed in Genesee.

\*\*Indicates hullless variety

**Table 3. Irrigated six-row spring barley performance in eastern districts at Rupert, Aberdeen, Idaho Falls and Ashton, 2015.**

Variety	Yield				Average						
	Rupert	Aberdeen	Idaho Falls	Ashton	Yield	Test Weight	Plant Height	Lodging	Plumps	Thins	Protein
<b>Feed</b>	bu/A				bu/A	lb/bu	inches	%	(% > 6/64)	%	%
Goldeneeye	136	146	133	132	137	46.9	36	10	81	7	11.3
Herald	110	137	124	123	124	47.3	34	7	90	4	11.3
Millennium	121	142	131	132	131	46.8	34	3	83	6	11.6
<b>Malt</b>											
Celebration	102	108	138	105	113	49.4	36	11	97	1	11.7
Lacey	109	120	145	111	121	50.4	37	12	95	1	11.6
Quest	98	98	133	117	112	49.3	36	12	91	3	11.5
Tradition	106	124	133	101	116	50.2	36	12	97	1	11.5
<b>Average</b>	111	127	136	120	124	48.9	36	9	92	3	11.5
<b>LSD (<math>\alpha = .05</math>)</b>	17	17	8	16	7	0.6	2	15	6	3	0.3

**Table 2. Irrigated two-row spring barley performance in eastern districts at Rupert, Aberdeen, Idaho Falls, and Ashton, 2015.**

Variety	Yield -----				Irrigated Average -----						
	Rupert	Aberdeen	Idaho Falls	Ashton	Yield bu/A	Test Weight lb/bu	Plant Height inches	Lodging %	Plumps (% > 6/64)	Thins %	Protein %
<b>Feed</b>											
Baronesse	103	145	126	107	120	51.4	30	47	93	4	10.8
CDC Fibar*	79	96	104	102	95	56.5	33	46	85	4	16.1
Champion	117	145	154	124	135	51.9	31	30	94	3	11.7
Claymore	150	165	139	145	150	50.8	32	19	93	3	10.9
Clearwater*	81	97	102	93	93	56.4	32	47	77	8	15.8
Harriman	129	139	135	117	130	50.9	31	20	94	2	10.9
Idagold II	110	141	99	117	117	50.0	29	29	87	6	11.2
Julie*	96	121	118	99	108	56.8	32	21	89	3	14.7
Kardia	87	139	126	135	122	50.3	32	38	90	4	11.8
Lenelah	124	146	148	134	138	51.7	31	27	96	2	11.5
Oreana	112	155	89	132	122	49.6	27	42	84	7	11.8
RWA 1758	108	125	124	123	120	50.7	29	60	89	5	10.9
Sawtooth*	97	100	118	126	110	57.2	33	22	76	7	14.6
Tetonia	104	123	152	143	130	51.4	31	34	92	4	11.1
Transit*	74	103	103	96	94	56.5	33	32	78	6	15.3
Vespa	160	154	128	142	146	51.0	28	33	94	2	11.3
Xena	109	150	147	139	136	51.4	32	37	93	3	11.1
<b>Average</b>	108	132	125	121	122	52.8	31	34	89	4	12.5
<b>LSD (α = .05)</b>	23	20	15	26	11	0.7	2	14	8	3	0.6

<b>Malt</b>											
Variety	Rupert	Aberdeen	Idaho Falls	Ashton	Yield bu/A	Test Weight lb/bu	Plant Height inches	Lodging %	Plumps (% > 6/64)	Thins %	Protein %
ABI Balster	128	137	140	135	135	50.3	30	19	95	2	11.8
ABI Growler	123	139	126	140	132	50.4	29	22	92	4	11.6
ABI Voyager	129	144	129	128	133	51.7	34	38	98	1	11.3
AC Metcalfe	111	111	115	128	116	51.7	33	22	97	2	11.6
ACC Synergy	151	161	144	128	146	51.8	32	8	99	1	11.3
CDC Copeland	115	127	124	134	124	51.2	34	36	96	2	11.4
CDC Meredith	109	93	126	129	115	49.3	31	48	94	2	11.5
Conrad	132	138	106	130	128	51.0	30	35	95	2	11.1
Harrington	101	106	112	134	108	51.2	32	32	92	4	11.6
Hockett	109	128	112	114	117	52.2	30	32	95	2	11.8
LCS Genie	108	157	84	118	121	49.5	26	22	91	4	11.4
LCS Odyssey	115	164	111	134	133	47.4	26	43	91	3	11.5
LCS Overture	120	154	66	144	125	46.9	27	42	89	4	11.7
Merem	120	122	121	162	125	50.1	32	23	90	5	11.5
Merit 57	107	122	124	138	124	49.4	32	32	90	4	11.6
Moravian 69	110	131	103	142	114	46.7	24	47	82	7	11.5
ND Genesis	114	136	124	118	123	51.6	34	12	98	1	11.8
<b>Average</b>	119	134	116	134	126	50.2	30	30	93	3	11.5
<b>LSD (α = .05)</b>	23	23	19	16	11	0.7	2	19	7	3	0.3

\* indicates hullless variety



**Table 4. Spring barley yield irrigated average for 2013-2015 in Idaho.**

Site/Years	----- District -----	
	Northern	Eastern
<b>2-Row Feed</b>	<b>12</b>	<b>12</b>
Baronesse	---	123
Camas	88	---
CDC Fibar	---	89
Champion	92	144
Clearwater	---	98
Harriman	---	133
Idagold II	---	128
Julie	---	115
Kardia	---	124
LCS Vespa	91	146
Lenelah	90	138
RWA 1758	---	132
Sawtooth	---	112
Tetonia	88	135
Transit	---	98
Xena	---	137
<b>Average</b>	90	122
<b>LSD (α = .05)</b>	3	6
<b>2-Row Malt</b>		
ABI Balster	---	134
ABI Voyager	---	130

Site/Years	----- District -----	
	Northern	Eastern
AC Metcalfe	---	116
CDC Meredith	---	118
CDC-Copeland	83	125
Conrad	---	123
Harrington	---	107
Hockett	---	118
LCS Genie	85	126
Merem	---	119
Merit 57	---	122
Moravian 69	---	122
<b>Average</b>	84	123
<b>LSD (α = .05)</b>	3	6
<b>6-Row Feed</b>		
Goldeneye	---	134
Herald	---	129
Millennium	---	140
<b>6-Row Malt</b>		
Celebration	---	117
Quest	---	115
Tradition	---	122
<b>Average</b>		<b>126</b>
<b>LSD (α = .05)</b>		<b>6</b>



# 2015 Idaho spring wheat variety performance tests and 2013-2015 yield summaries

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**I**DAHO spring wheat varieties are evaluated each year to provide performance information to help growers select superior varieties for their 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 ‘2015 Idaho Spring Barley Variety Performance Tests and 2013-2015 Yield Summaries.’

Agronomic performance data for spring wheat are summarized by state districts in Tables 1-3. Yield data are given for individual sites while other agronomic data are averaged over all the sites of each table. Bushel/Acre yield results are based on 60 lb/bu at 11% moisture. Lodging ratings are the percent of a plot that is lodged, and in some tables not reported due to minimal or no lodging. More detailed lodging information is available on the UI cereals website <http://www.uidaho.edu/extension/cereals/>. Average values are presented at the bottom of listings and are followed by a least significant difference (LSD) statistic at the 5% level. Average yield results from variety performance trials in 2013, 2014, and 2015 are presented in Table 4 for all districts, with 3-12 site/years of data summarized for each district. ■

**Table 1. Dryland spring wheat performance in northern districts at Bonners Ferry, Craigmont, Genesee, and Moscow, 2015.**

Variety	Yield				Four Site Average			
	Bonners Ferry	Craigmont	Genesee	Moscow	Yield	Test Weight	Height	Protein
<b>Soft White</b>	bu/A				bu/A	lbs/bu	inches	%
Alturas	54	29	36	52	43	54.9	29	13.8
Babe	54	36	54	58	50	56.0	30	14.5
Divia	57	32	40	56	46	55.5	31	14.3
JD*	57	34	46	51*	47	57.6	33	14.9
Seahawk	57	31	50	58	49	57.1	28	14.8
UI Stone	47	35	44	48	43	54.7	29	14.4
WB6121	47	35	47	52	45	54.0	28	15.0
WB6341	55	36	44	58	48	54.7	29	14.0
WB6430	44	39	44	57	46	56.5	26	13.9
<b>Average</b>	52	34	45	54	46	55.7	29	14.4
<b>LSD (<math>\alpha=0.05</math>)</b>	5	7	7	8	6	0.8	1	0.5
<b>Hard Red</b>								
Altum	43	33	52	57	46	57.2	30	15.3
Glee	45	35	54	53	47	55.4	30	15.1
HRS 3361	41	30	43	53	42	53.6	28	15.8
HRS 3419	57	27	43	49	44	54.9	28	15.7
HRS 3504	53	27	46	51	44	54.8	27	15.4
HRS 3530	40	36	42	48	42	55.4	33	15.3
Jefferson	41	37	48	51	44	56.1	29	15.4
LCS Iron	43	39	49	53	46	54.4	28	14.8
UI Winchester	38	36	46	56	44	54.3	28	15.4
WB9411	43	37	50	60	47	56.5	28	15.1
WB9518	34	38	58	57	47	56.0	28	15.6
WB9668	29	38	54	58	45	56.2	26	16.2
<b>Hard White</b>								
Dayn	47	39	51	61	49	56.4	31	14.8
LCS Atomo	38	41	67	59	51	54.2	23	14.8
LCS Star	45	39	55	53	48	54.3	28	15.0
UI Platinum	30	42	53	57	46	55.6	28	14.0
WB-Hartline	45	35	48	59	47	53.4	29	15.4
WB7417	41	42	61	59	51	57.0	32	15.0
<b>Average</b>	42	36	51	55	46	55.3	29	15.2
<b>LSD (<math>\alpha=0.05</math>)</b>	6	6	9	5	5	0.9	1	0.5

\*club wheat  
No lodging reported.



**Table 2. Irrigated and dryland soft white spring wheat performance in eastern districts at Rupert, Aberdeen, Idaho Falls, Ashton, and Soda Springs, 2015.**

Variety	Yield					Irrigated Yield	Test Weight	Plant Height	Lodging	Protein		
	Irrigated		Dryland		Average							
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs						bu/A	lb/bu
Alpowa	94	122	102	92	43	103	62.1	35	7	10.6		
Alturas	113	121	114	111	61	115	60.8	33	1	10.7		
Babe	104	119	117	94	46	109	61.3	34	4	10.7		
Diva	89	106	73	112	84	95	60.9	36	28	11.1		
Seahawk	117	140	89	105	81	113	62.4	34	1	10.5		
UI Pettit	94	116	103	93	46	101	60.2	32	1	10.6		
UI Stone	121	131	125	116	70	123	60.8	34	1	10.6		
WB6430	111	129	104	115	62	115	61.1	30	0	10.8		
<b>Average</b>	105	122	105	107	63	110	61.1	33	4	10.8		
<b>LSD (<math>\alpha = 0.05</math>)</b>	8	11	13	11	9	6	0.4	1	8	0.6		

**Table 3. Irrigated and dryland hard spring wheat performance in eastern districts at Rupert, Aberdeen, Ashton, Idaho Falls and Soda Springs, 2015.**

Variety	Yield					Irrigated Yield	Test Weight	Plant Height	Lodging	Protein		
	Irrigated		Dryland		Average							
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs						bu/A	lb/bu
<b>Hard Red</b>	bu/A					bu/A	lb/bu	inches	%	%		
Bullseye	95	118	95	98	---	102	62.0	28	4	14.9		
Cabernet	101	110	99	82	---	98	60.3	26	2	15.2		
HRS 3504	103	138	91	113	---	111	59.7	30	3	14.3		
HRS 3419	97	117	85	101	---	100	59.6	30	1	13.2		
HRS 3530	114	122	76	84	---	99	61.2	33	2	15.8		
Jefferson	106	125	94	100	49	106	61.9	31	2	15.1		
Kelse	102	107	73	97	53	95	61.5	33	0	16.0		
LCS Iron	113	126	87	110	64	109	59.3	30	0	14.2		
SY Basalt	114	134	79	100	---	107	59.6	27	1	13.9		
SY Coho	107	126	68	95	---	99	58.8	27	0	14.1		
UI Winchester	97	120	70	84	44	93	61.0	28	14	14.9		
WB9229	106	116	95	93	---	102	61.2	26	1	15.7		
WB9411	117	111	100	83	66	103	60.2	27	0	16.2		
WB9668	98	108	102	98	63	101	61.4	26	1	16.7		
<b>Hard White</b>	bu/A					bu/A	lb/bu	inches	%	%		
Dayn	122	141	116	93	84	118	61.3	31	1	14.6		
Klasic	100	104	102	77	36	96	59.9	21	0	15.3		
LCS Atomo	113	111	99	94	41	104	59.7	24	1	14.4		
LCS Star	126	118	80	104	62	107	59.9	29	1	13.8		
Snow Crest	91	106	107	80	---	96	60.8	25	0	15.8		
SY Teton	123	127	108	118	79	119	58.9	27	0	14.1		
UI Platinum	97	118	106	87	61	102	60.4	27	0	14.5		
WB-Paloma	101	119	98	95	---	103	61.1	27	2	15.1		
WB7328	99	107	106	87	---	100	60.8	25	0	16.1		
WB7589	108	109	101	101	---	105	60.0	24	5	15.4		
<b>Durum Wheat</b>	bu/A					bu/A	lb/bu	inches	%	%		
Alzada	92	100	88	71	---	88	60.4	27	1	15.3		
LCS Kiko	91	99	100	78	---	92	58.9	27	1	14.9		
<b>Average</b>	105	118	91	93	58	102	60.6	28	2	15.0		
<b>LSD (<math>\alpha = 0.05</math>)</b>	16	13	15	18	15	8	0.4	2	5	0.9		



**Table 4. Spring wheat yield average for 2013-2015 in Idaho.**

Site/Years	District		
	Northern (Rainfed)	Eastern (Irrigated)	Eastern (Dryland)
	12	12	3
	Yield (bu/A)		
<b>Soft White</b>			
Alpowa	---	110	57
Alturas	58	111	59
Babe	65	105	54
Diva	65	---	---
JD	61	---	---
Seahawk	69	115	63
UI Pettit	---	107	57
UI Stone	62	122	54
WB6121	65	---	---
WB6341	68	---	---
<b>Average</b>	64	113	57
<b>LSD (0.05)</b>	2	4	9
<b>Hard Red</b>			
Alum	59	---	---
Bullseye	---	102	---
Cabernet	---	103	---
Glee	65	---	---
Jefferson	61	103	54
Kelse	---	105	54
LCS Iron	60	---	---
UI Winchester	57	94	50
WB9229	---	105	---
WB9518	61	---	---
<b>Hard White</b>			
Dayn	---	121	63
Klasic	---	95	43
LCS Star	64	---	---
Snow Crest	---	98	---
UI Platinum	---	105	56
WB-Hartline	64	---	---
WB-Paloma	---	105	---
Alzada (durum)	---	98	---
<b>Average</b>	61	103	54
<b>LSD (<math>\alpha = 0.05</math>)</b>	2	4	7



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