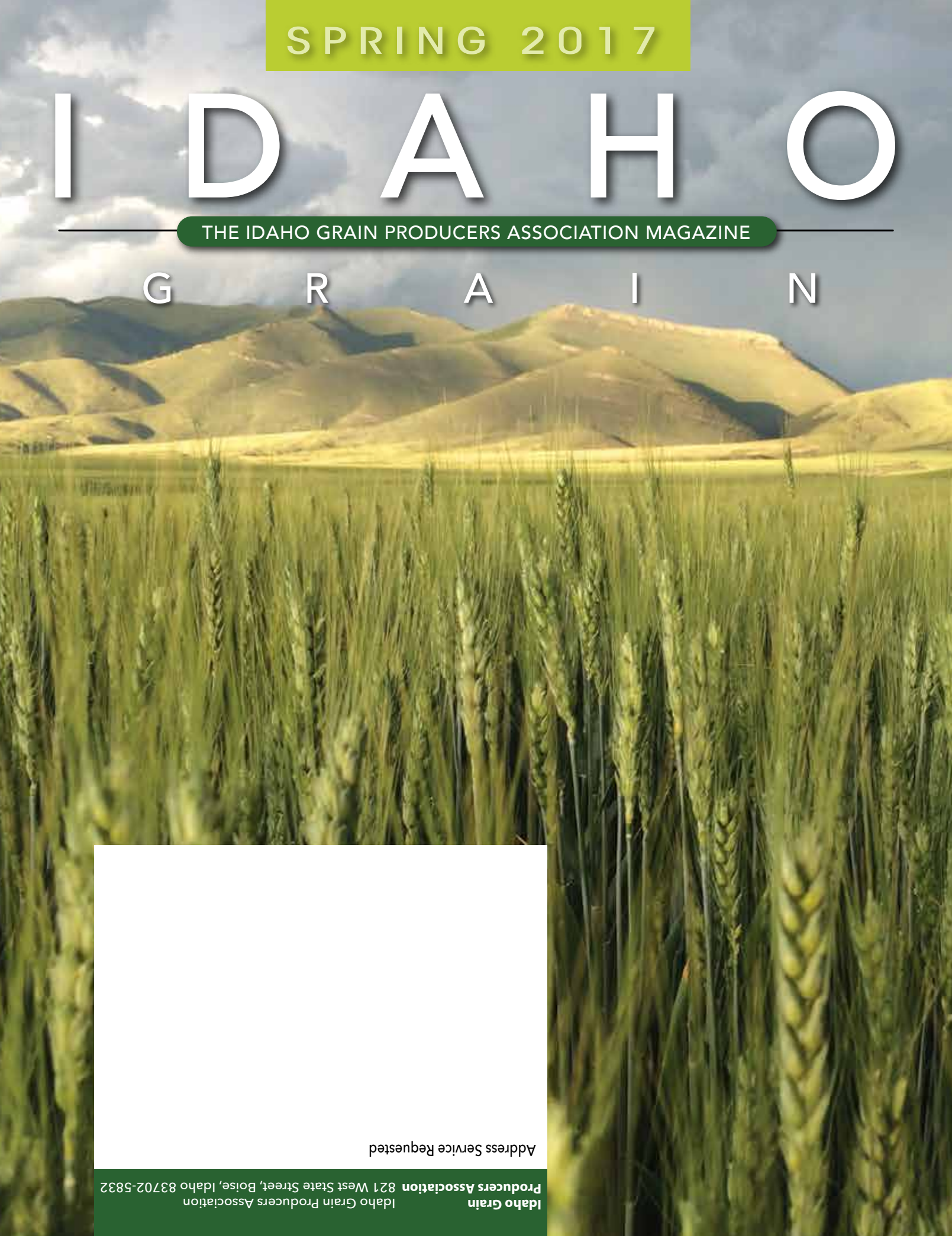


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VIEWS



VIEWS



**BY JOE ANDERSON
PRESIDENT**

Finally, this past year, there was enough impact over a wide enough geographical area that the falling number issue is getting the attention that many of us thought it deserved some years ago. Low Falling Numbers (LFN) is a challenge that doesn't have a current solution. Since 2009, LFN has caused millions of dollars of losses for wheat growers and others in the marketing chain. Pacific Northwest (PNW) growers are angry, discouraged, and agree that it is the first time in our farming careers that we have faced something that we have no real idea how to fix. However, we are encouraged that we are seeing the beginning of a coordinated, collaborative effort that may lead to a solution to the falling number problem.

We constantly hear that a new test is needed. Yes – but a new test, by itself, will not solve the problem. Unless this issue is taken head on, we learn more about cause and effect, and ultimately seek genetic solutions, the problem will not be fixed.

A plan to address the issue must involve all segments of the wheat industry to include growers, scientists, elevators, seed companies, suppliers, exporters, millers, and end users. We all have a stake and must work together to reach a solution. If bakers, millers and exporters aren't involved in whatever solution might be found, our efforts will be little more than an academic exercise. Any alternative measurement of end use quality must consistently and reliably measure the quality attributes that are demanded by our customers. It won't be accepted otherwise.

Our focus must be on ultimately rendering the current falling number test, the Hagberg Perten Falling Number test, or whatever test that might replace it, irrelevant. We need ripe grain that won't sprout in the head – and we need whatever is causing Late Maturity Alpha-amylase (LMA) in all its various forms to be blocked.

An integrated, multidisciplinary, multi-institutional research program is essential. The PNW has scientists that have much of the expertise to figure this thing out. Perhaps some new team players will be needed. Together, we need to get focused on this issue and develop a program that ultimately will eliminate the problem. The wheat commissions from Idaho, Washington and Oregon have developed a strategy by which to proceed. By the time you read this, a Falling Number Summit will have been held that brings scientists, growers and industry together to identify the scientific capabilities in the PNW. There will be attempts to identify and fill any gaps that exist. Funding sources have been identified and are being vigorously pursued to include commissions, state, federal, and private. The objective is to develop an integrated, multidisciplinary, multi-institutional research and education team that will focus on the falling number issue and provide solutions.

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A number of factors must be considered:

- The current FN test is not adequate for genetic selection. Testing procedures must be developed for genetic selection that are specific to the underlying causes that are leading to quality issues. Such test must closely correlate with the Hagberg Perten test or its replacement. Such a test must be consistent, repeatable, and demonstrate the functionality of the flour.
- A quick test that can be used at the elevator or bin to allow segregation of varying qualities is needed as a stop gap.
- LFN from sprouting (pre-harvest sprout, or PHS) has much different causes than LFN from LMA and other issues. A program of at least two tracks will be necessary. PHS occurs when it rains on ripe grain, causing it to germinate; alpha amylase forms to convert starch to sugar, and the plunger in the test falls more quickly. The causes and impact of LMA are much more obscure and complex.
- The solution to PHS, conceptually, amounts to extending dormancy. Breeding for slower germination causes concerns with delayed emergence. But there may be other solutions that delay germination that do not require breeding for extended dormancy.

- We know little about what happens with LMA. We only have observations that have not been adequately correlated with temperature and other climatic, environmental and production factors. We must identify the what, where, when, why, and how of the chemistry and physiology that leads to LFN test results. The influence of climate must be much better understood.
- Once it is determined the what, where, when, why and how, genes would be identified that control or influence these processes. Selections could be made or genetic manipulation techniques (gene editing) employed to permanently or temporarily modify the processes that lead to LFN. Once the traits have been developed, they can be incorporated into varieties. Other types of technologies might also be discovered.

If not addressed, this difficult problem will continue, cost growers and the marketing chain millions more dollars, and risk losing some of our most valuable customers. The solutions may be complex. Some may say, “We can’t do that!” – they are wrong! We just may not know how to do it yet. We must put a system in place immediately that will show us how. ■

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EDITOR'S NOTE

EDITOR'S NOTE



BY STACEY KATSEANES SATTERLEE
EXECUTIVE DIRECTOR

In December, a group of IGPA's grower-leaders met in Boise for a strategic planning session. I had been warned that strategic planning was an awful way to have to spend a couple of days – but much to the surprise of many in the room, it ended up being a highly productive session (and not too terribly painful).

One of the outcomes was a tighter mission statement for our organization: **Our mission is to serve the grain producers of Idaho by representing their interests at the county, state and federal levels to enhance their profitability and long term viability.**

And for the first time, a vision for our organization: **IGPA strives to be the premier association in Idaho and the top voice for agriculture policy. IGPA works to be an organization respected and valued by producers, such that every grain producer knows that they cannot afford not to be a part of IGPA. IGPA continues to work so that every grain producer in Idaho is as profitable and viable as they can be.**

We came away with an extensive work plan, so expect to see a lot out of IGPA in the coming months. One of the most exciting parts of the day was spent looking back at IGPA's accomplishments over the past 30 years – the group was so energized by that exercise, we decided to turn the resulting timeline of accomplishments into a link on the home page of our newly redesigned website: www.idahograin.org. Do you have something to add to the timeline? Let staff know, and we'll get it added.

We also spent a good amount of time discussing the importance of developing young leaders in our organization. That is one of the reasons it is so exciting that IGPA had five young leaders join the executive board and travel to Washington, DC in January. We all attended meetings of the National Barley Growers Association and the National Association of Wheat Growers and went to Capitol Hill to meet with all of Idaho's legislators – you'll be able to read about these young leaders, their operations, their families, and their impressions of Washington, DC in the pages ahead.

Another priority that came out of the session was the importance of grow IGPA's membership. Have you joined this year? If you haven't yet, we need your voice as part of our organization – you can join today at www.idahograin.org/membership or call us at the office and we'll get you set up. ■



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Young Growers Groomed for Leadership



L to R: Adam Young, Jake and Ashley Ozburn, Jamie and Cordell Kress

IGPA’s mentorship program, sponsored by the Idaho Wheat Commission and the National Barley Growers Association, helps foster leadership in younger growers and offers them the opportunity to see the inner workings of their grain-grower organizations.

“As a more senior member of the IGPA Executive Committee (I’m old), I feel a responsibility to help develop new leadership for our industry,” said IGPA President Joe Anderson.

“Giving hands-on experiences to newer, younger, less-experienced members who show an interest ignites the spark. Fear and intimidation

generated by the new and unknown very quickly turn to confidence and commitment,” he said.

IGPA Vice President Dwight Little said the mentorship program is good for farmers and the organization.

“We’re developing young men and women to eventually take over leadership of Idaho Grain Producers. The mentorship program exposes them to our national organizations and the work that they do and allows them to see how their dollars are being spent,” he said.

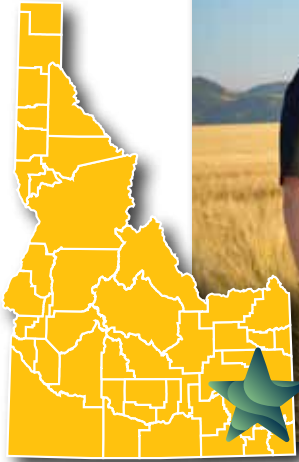
“This knowledge and experience can then radiate back to their community,” he said. “It also allows growers to connect with IGPA leadership so they feel more comfortable bringing issues to the organization.”

It also gives young growers a chance to get off the farm and see parts of the world they might not otherwise see, he said. “Overall, it’s a great program -- developing leaders is critical to our organization,” he said.

Five such up-and-coming leaders just returned from the annual mentorship trip to Washington, D.C., where they were able to connect one on one with legislators and the movers and shakers at their national organizations.

Taking up the gauntlet this year are Adam Young, a wheat and barley grower from Blackfoot; Jake and Ashley Ozburn, barley growers from Soda Springs; and Cordell and Jamie (new IGPA executive board member) Kress, wheat growers from Rockland.

They talk about their farms and their experiences at the nation’s Capitol in the profiles that follow. ■



Jake & Ashley Ozburn

Farm: About 5,000 acres, mostly barley and some wheat near Soda Springs

How did you get into farming?

Jake: I grew up on the family farm helping my dad, uncles and grandpa. I left after high school in 1999 to go to college. After working in other fields, I was finally able to come back to the farm full time in 2010.

When was the operation established?

Jake: My great grandpa Aaron started the farm in 1915 in Ten Mile Pass near Soda Springs.

Tell us about your family.

Ashley: We have three children. Oldest daughter Kinley is 11, son Preston is 9 and youngest daughter Allyson is 5.

Jake: Currently I farm with my dad, Curtis, and three uncles -- Craig, Mark and Dean. They all have different things I can learn from them.

What is your childhood background?

Jake: I grew up on the portion of our farm that is north of Lava Hot Springs with my parents, Curtis and Donna, and sisters Amy and Brittany. My parents were all about farming my entire life. My dad was always doing something on the farm, and my mom was always there for support.

Ashley: I grew up in Blackfoot with parents Lisa and Clayton Pratt and one sister, Heather. My dad has worked at a potato processing plant since high school, and mom works at the John Deere dealer. Even though I wasn't directly involved with farming, I was still surrounded by farming influence.

How did two you meet?

Ashley: Jake's sister Amy and I were in the LPN nursing program together, and she gave Jake my phone number and told him to call me. We talked on the phone for a month before we finally met and went on a date. Things clicked, and seven months later we were married.

Jake: Ashley supports me and takes care of the kids almost by herself during the busy times of the year. She enjoys being in the field, moving equipment, and helping however she can.

How do you market your production?

Jake: We contract with all the malt companies in southeast Idaho.

Is there anything unique about your operation?

Jake: We do almost everything ourselves, from all of our mechanical work, picking rocks, applying herbicide and fertilizer applications, grain storage and delivery, and fence out cattle we don't own all around us. We don't hire out any labor, all labor is done by family.



What conservation practices do you employ?

Jake: We strive to keep our soil healthy because it's our most important asset so it can continue to produce.

What are the biggest challenges in your operation?

Jake: On a dry farm, the weather is always a challenge. Second thing is managing risk.

What are the guiding tenets of your operation?

Jake: Take care of everything we have. Never put off for tomorrow what needs done today.

Why do you farm?

Jake: I was raised with the opportunity to grow up on the farm. I learned from a young age to love being in the fields and being in the equipment. I love operating tractors and combines and seeing what we can produce. I want to teach that to my kids and give the same opportunity to them. There are things that can only be learned on a farm. When our kids leave home, whether they farm or not, we want them to have the skills needed to work hard and accomplish whatever they choose to do.



What brings you satisfaction?

Ashley: Our kids! I love seeing them work together picking rocks or rye and laughing in the field. I love that our son asks to go to work with Dad and him saying when he gets big he is going to be a farmer.

Jake: Producing a great yielding and quality crop.

What do you do for fun?

Jake: I love archery. I like to shoot chucks. My newest hobby is Little League. My life now is farming and going to Little League.

Ashley: I like to be my kids' biggest cheerleader. Kinley loves volleyball and softball and likes basketball. Preston plays football, baseball and basketball, with hopes of cross country in the future. Ally is anxiously waiting to play soccer so she, Jake and I are great cheerleaders. My hobby is taking picture, I love turning one man's junk into a cool picture.

What challenges face the U.S. grain industry?

Jake: We've produced too much grain, and the price of grain now is awful. Second thing is our ability to export; hopefully the right trade deals can be made.

How do you see the future of the U.S. grain industry?

Jake: We will continue to produce more and more -- maybe more than we need to.

Is it important for growers to be involved in industry groups?

Jake: Absolutely. We are such a minute portion of the population that we have to join together to voice our concerns, otherwise we will never be heard.

What are your hopes and concerns with the Trump administration?

Jake: My biggest hope is that crop insurance will be kept intact with the next farm bill. I hope that he can figure out health insurance because right now health-care is one of the most frustrating costs we face. My biggest concern with Trump is that he gets us in into a trade war.

Why do you want to participate in IGPA's mentorship program?

Ashley: I am excited to see our nation's history. Jake goes to the IGPA meetings, and I stay with the kids. He tells a little about what goes on, but now I get to see first-

hand what goes on. It helps me see the full circle of farming.

Jake: Our organization is a grass-roots organization. I've been a part of the process of seeing a concern go from individual through the county to the state level. This trip gives me the opportunity to see the next step -- the national level. We live in the greatest country in the world; this is the place to learn our history and, hopefully, this is where we can help give guidance for our industry.

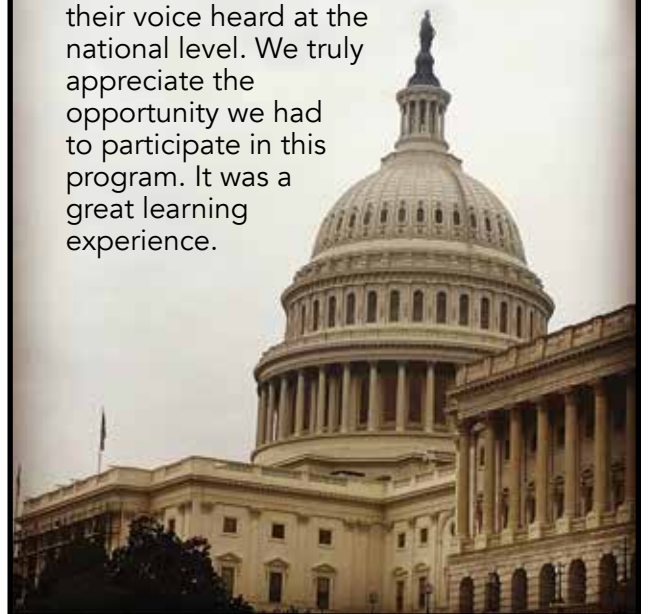
What was your D.C. experience?

Jake and Ashley: We were able to go to Washington, D.C., two days early so we could see Arlington National Cemetery, the monuments and some of the Smithsonian museums. We realized just how amazing our nation's history is, and it is a place we would love to bring our children to share all the history with them. Without this opportunity, we may have never made it to D.C.

We were able to attend the meetings of the National Barley Growers Association, and it was great to see that their opinions and views line up with ours. We have experience in county and state level with Idaho Grain Producers but with the chance to see the process at the national level, we were able to see complete picture.

We were also able to tour the nation's capital and meet with the Idaho's legislatures who were there. We were able to voice our concerns about political and farm issues.

IGPA's mentorship program is able to bring young farmers to D.C. to show them how farmers can have their voice heard at the national level. We truly appreciate the opportunity we had to participate in this program. It was a great learning experience.

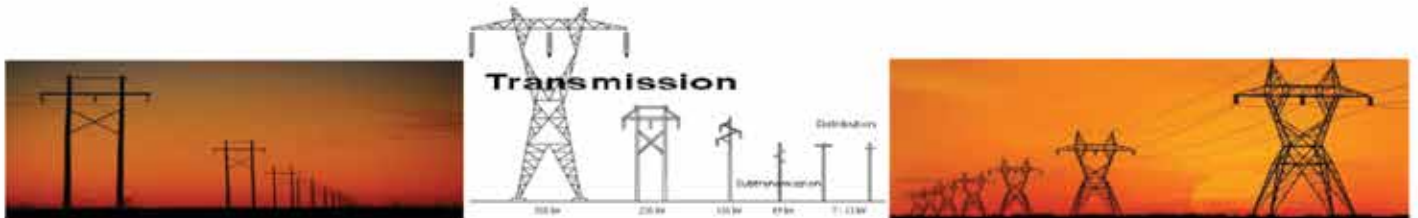




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Adam & Emy Young

Farm: 2,800 acres of barley, wheat and alfalfa near Blackfoot

How and when did you get into farming?

I grew up on the family farm so, in a sense, I've been involved in farming for most of my life. It wasn't until I started attending college, however, that I began to entertain thoughts about making farming my career. In 2013, after having completed my degree and working for three years in the accounting industry, my wife and I decided that it was time to return to Idaho and begin the process of making farming our long-term career.

When was the operation established?

My grandparents began farming shortly after World War II. They were among the first to develop the desert ground west of Blackfoot. When my dad was in his 20s, he took what my grandpa had built and continued to expand and develop it over the next three and a half decades.

Who is on the farm?

My wife, Emy, and I have two kids -- Caitlin (age 3) and Tyce (age 1) -- with another boy soon to arrive. My parents, Allen and Jackie, continue to head up the farm operation. My grandparents Darwin and Pearl Young, though no longer active in the operation, continue to live next to us on the farm.

What is your childhood background?

I am the oldest of four siblings: three boys and one girl. We grew up on our family's farm. One of my brothers is a mechanical engineer for 3M in Nebraska, my sister works in a medical laboratory near Salt Lake City and my youngest brother is attending school at Brigham Young University – Idaho in Rexburg.

How did you meet your spouse?

Emy and I met while working in Ogden, Utah. I had just completed my accounting degree and was working for a firm in the area. My wife had completed her environmental engineering degree and was working for CH2M Hill as a contractor on Hill Air Force Base. Emy's parents own a small hobby farm that included some cattle in Cache Valley, Utah. Although Emy is not directly involved in the farming operation, we always make large decisions together.

How do you market your grain?

We typically forward contract all of our expected barley production for malting. We also try to forward contract about half of our expected wheat production. In the current commodity price environment, we take opportunities to sell our crops at a profit, even if the margin is small.

Most of our premium hay is sold to brokers, who have a network of dairy clients around the state. Our feeder hay is sold to a wide range of buyers, from larger operations making large purchases to local hobbyists looking to buy a few bales at a time.

Is there anything unique about your operation?

Perhaps one thing that makes us somewhat unique is the length of our employer/employee relationships. We have been lucky to have four great long-time employees who have been with the farm for 30 to 40 years.

What conservation practices do you employ?

We have a few acres in CRP (the Conservation Reserve Program), but probably our largest conservation practice has involved measuring and reducing our water usage. As a result of the recent settlement agreement between members of the Surface Water Coalition and the Idaho Ground Water Appropriators, we have installed flow meters on nearly all of our groundwater pumps.



The Young family: Adam, Emy, Caitlin, and Tyce

Through a combination of practices, including removing end guns from many of our center pivots, updating irrigation systems, and implementing tighter irrigation schedules, we have begun to significantly reduce our water usage.

I think it's also important to mention another under-acknowledged but highly beneficial conservation practice we engage in: the cultivation of Roundup-ready alfalfa. Biotechnology and glyphosate's positive impacts on biodiversity and soil and water conservation, on top of their contribution to a safe and reliable food source, are well documented in scholarly and scientific articles -- even though these advancements are often misunderstood or under-acknowledged in the public arena.

What are the biggest challenges in your operation?

For at least the short term, commodity prices will, obviously, pose a challenge. Narrow margins will require both discipline when it comes to spending and marketing and a successful agronomic program that maximizes crop yields.

Longer term, I think that some of the biggest challenges we will face involve water issues. We are already learning how to get by with less water, and the future success of operations like ours will depend on our being able to satisfactorily resolve these issues and eliminate the uncertainty surrounding our water resources.

What are the guiding tenets of your operation?

I think planning, setting, and acting on realistic goals are some of our farm's guiding principles. Over the course of his career, my dad learned how to lock in a profit without fretting over market movements after the crop was sold. It's hard to make a decision and then

commit to being happy with your choice whether or not you sold "at the top," but I think it has been crucial for our farm. Rather than looking for a home run each year, he set reasonable goals that consistently ensured a profit.

Of course, you can't know your break-even price if you don't know your costs, so good recordkeeping and planning play an essential role.

Why do you farm?

Farming is a great career that relatively few people have the opportunity to be a part of. My grandparents and parents have created a great business, and I recognize that I am lucky to have the rare opportunity to be part of something like this. Farming can be stressful, but it can also be a lot of fun.

I also think it provides a great environment for raising a family. The farm gave me a lot of opportunities to do the kinds of things most other kids never experience -- like driving tractors! -- and I like the idea of sharing those kinds of experiences with my kids. My kids see me in the fields and, when they're older, will be out there working with me. They're intimately engaged with my career in a way they never would have been had I continued working for an accounting firm.

What brings you satisfaction?

I enjoy learning and improving. I love to look back and see something I've improved or made better.

What do you do for fun?

I enjoy reading and studying history. I also enjoy downhill skiing, snowmobiling and traveling with my family. One of our family's favorite experiences is spending time snowmobiling and playing games at the family cabin in Island Park.



What challenges face the U.S. grain industry?

I think the general public's aversion to GM (genetic modification) technology is and will continue to be a challenge for the U.S. grain industry. Not only do negative domestic perceptions impact the industry, foreign perceptions and preferences also impact our ability to sell our grain to global export markets.

Another challenge that I see surfacing is the Trump administration's stance on free trade agreements such as the Trans-Pacific Partnership and NAFTA. Now that the U.S. has withdrawn from the TPP and considering the tension between the Trump administration and Mexico -- including President Trump's expressed intent to renegotiate NAFTA -- it may become more difficult to access, and sell our grain to, consumers in other countries, putting further pressure on commodity prices and the U.S. grain industry as a whole.

How do you see the future of the U.S. grain industry?

I think we have some challenges to overcome, but I see the industry continuing to improve and innovate. I think U.S. agriculture will continue to be a global leader and a provider of high-quality commodities to markets around the world.

Is it important for growers to be involved in industry groups?

Yes. Obviously, growers will be far more likely to influence their industry in favorable ways if they take an active role than if they isolate themselves and leave the discussion and policymaking to other people.

I also think it's important, in general, for people to take opportunities to step outside of their immediate surroundings and learn new things and broaden their perspectives.

What are your hopes with the Trump administration?

I hope the administration will take steps to strengthen, and not weaken, global trade. I have also been concerned about the unprecedented level of divisiveness that has accompanied our recent political discourse and hope that the current administration can take steps to promote a more respectful, fruitful dialogue.

Why do you want to participate in IGPA's mentorship program?

I love opportunities to learn. I recognize my relative inexperience and look forward to getting a glimpse into how U.S. farm policy is proposed, debated and ultimately implemented. Beyond that, who would turn down the unique opportunity to visit our nation's capitol?

How was the trip to the nation's capitol?

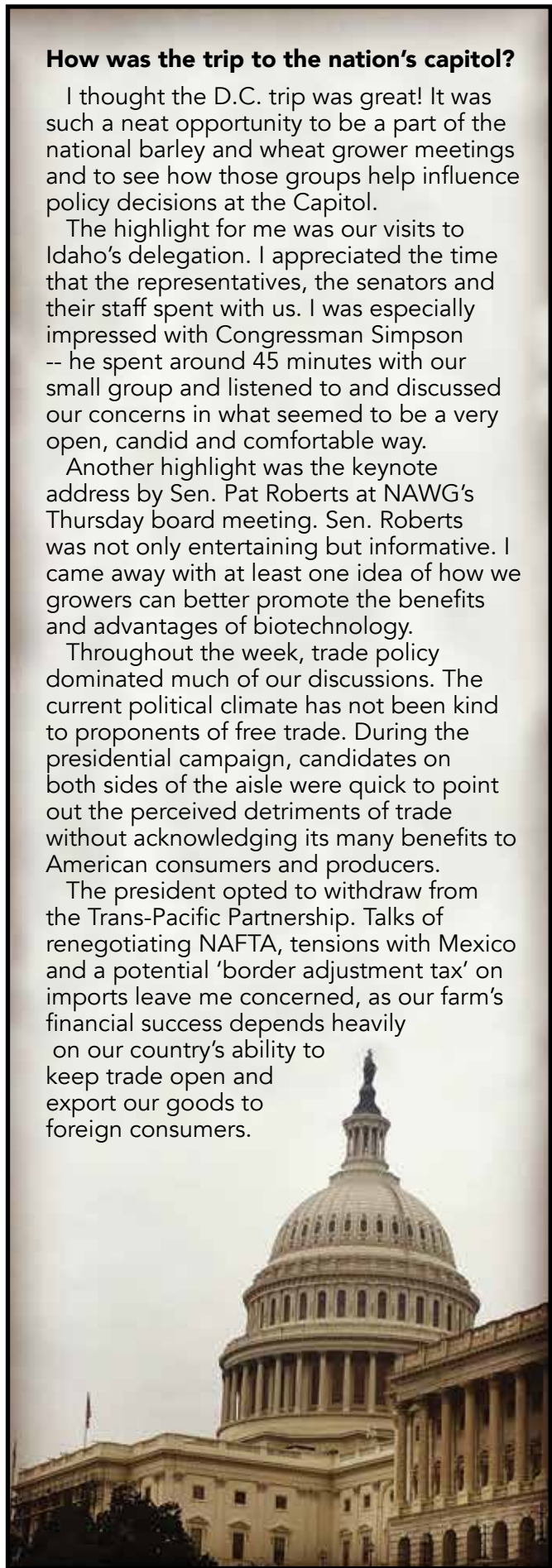
I thought the D.C. trip was great! It was such a neat opportunity to be a part of the national barley and wheat grower meetings and to see how those groups help influence policy decisions at the Capitol.

The highlight for me was our visits to Idaho's delegation. I appreciated the time that the representatives, the senators and their staff spent with us. I was especially impressed with Congressman Simpson -- he spent around 45 minutes with our small group and listened to and discussed our concerns in what seemed to be a very open, candid and comfortable way.

Another highlight was the keynote address by Sen. Pat Roberts at NAWG's Thursday board meeting. Sen. Roberts was not only entertaining but informative. I came away with at least one idea of how we growers can better promote the benefits and advantages of biotechnology.

Throughout the week, trade policy dominated much of our discussions. The current political climate has not been kind to proponents of free trade. During the presidential campaign, candidates on both sides of the aisle were quick to point out the perceived detriments of trade without acknowledging its many benefits to American consumers and producers.

The president opted to withdraw from the Trans-Pacific Partnership. Talks of renegotiating NAFTA, tensions with Mexico and a potential 'border adjustment tax' on imports leave me concerned, as our farm's financial success depends heavily on our country's ability to keep trade open and export our goods to foreign consumers.



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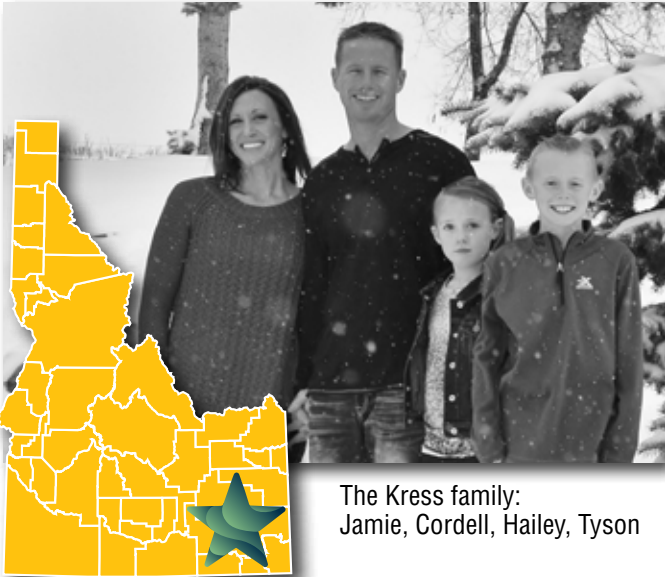
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The Kress family:
Jamie, Cordell, Hailey, Tyson

Cordell & Jamie Kress

Farm: Medium-sized operation by today's standards, growing primarily wheat and safflower at the south end of Rockland Valley in Power County

How did you get into farming? (Most answers are from both Cordell and Jamie)

Right after college, we were married and Cordell took a job with Simplot working in Boise and then in Washington state. After about three years at Simplot, he saw an opportunity to return to the family farm and bought a farm of his own. This was in 2004.

When was the operation established?

The base of the current operation was started by Cordell's great grandfather on a homesteaded 160 acres in 1912. It has been run by the family ever since.

Tell us about your family.

We have two children, Tyson (12) and Hailey (9).

What is your childhood background?

Jamie was raised in Aberdeen, Idaho. Her parents owned two Les Schwab Tire stores. Growing up in this environment fostered her love of business and hard work.

Cordell grew up on the farm in Rockland, spending winters in Pocatello where his dad coached high school basketball.

How did you meet and what are your roles in the operation?

We met while boating one summer on the American Falls reservoir.

Cordell handles the day to day farming operations, but not without the constant support of the rest of the

family. Jamie focuses on administrative and accounting duties. Harvest and rye pulling become a family affair with the kids included.

Is there anything unique about your operation?

We are somewhat unique in that we are farming dryland in the high desert. Our fields average about 5,500 feet in elevation with extremely variable rainfall averaging only about 12 inches per year. This creates some unique conditions of temperature and rainfall extremes. Trying to farm in harmony with these circumstances can be a challenge.

What conservation practices do you employ?

We began direct seeding our spring crops in 1997 when we bought an air drill. About that time, we went to a more conservation/minimum tillage fallow system. In recent years, we've included no-till fallow in our operation as well. We now only fallow the ground one out of every three years, and about half of the fallow acres are no-till fallow. The conversion has mostly been an effort to save labor and equipment hours. It is pretty easy to see the environmental and conservation benefits that go along with that, especially when you get a heavy summer thunderstorm.

What are the biggest challenges in your operation?

The biggest challenge is usually the weather. Probably the most frustrating thing about farming is spending so much time and effort putting your blood, sweat and tears into a crop only to watch Mother Nature destroy it, sometimes in very short order.

What are the guiding tenets of your operation?

The short answer could be the mortgage payment ... but we always try to do what we feel is best for the long-term health and viability of the farm. That includes everything from soil health to equipment replacement analysis to financial stability.



Kress kids pulling rye



Harvesting safflower, winter wheat in the foreground

Why do you farm?

We farm because we love to farm. This is a very rewarding life, but it can also be an extremely difficult and challenging life. If we did not love it, it would be hard to persevere through the tough times.

What brings you satisfaction?

Cordell: I love to watch things grow and get things accomplished. I have been accused of finding too much joy in straight lines in fields as well.

Jamie: I too love to get things accomplished and also find a lot of pride in a job well done.

What do you do for fun?

Our family enjoys snowmobiling, waterskiing and snow skiing. We also like to cook together.

What challenges face the U.S. grain industry?

Cordell: As an industry, one of our biggest challenges will be staying competitive on a world market. Many other countries can produce grain with cheaper inputs, less regulation and often greater subsidies. When these bushels can be sold on the world market at a discounted rate to U.S. grain, it is not good for any of us here at home.

How do you see the future of the U.S. grain industry?

Cordell: I am an optimist. You have to be to farm, but I do think there are good and smart people fighting for our interests all across the country. From researchers helping us to find new and better ways to grow crops to industry groups finding more ways to use our products and more places to sell them and groups like IGPA and NAWG looking out for our interests in government and policy.

Is it important for growers to be involved in industry groups?

Jamie: It is extremely important for growers to be involved in industry groups. Until you are involved with these groups, you are often unaware

of all the people working behind the scenes on your behalf. Becoming more involved brings an awareness of the issues that can affect growers. As a member, you can have a direct line to influence how policy is shaped.

What are your hopes and concerns with the Trump administration?

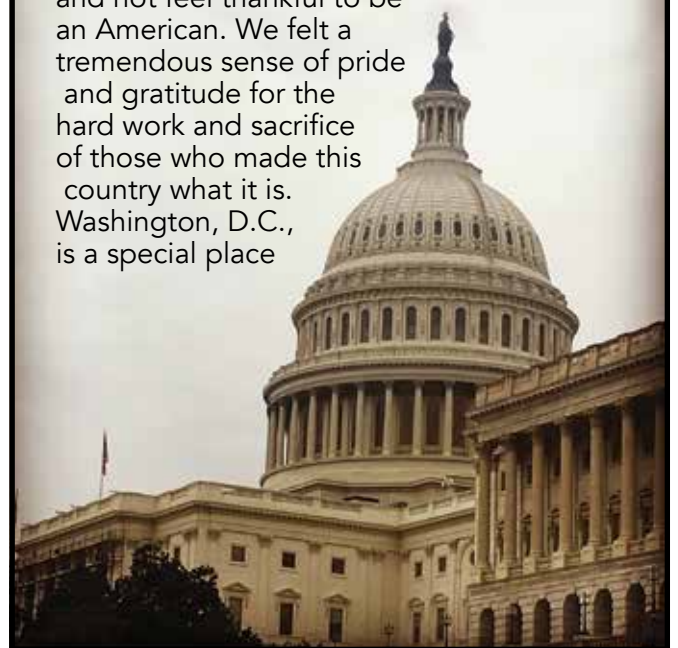
Our hope is that this administration can help to give us a level playing field on the world market and possibly ease some of the more restrictive and unnecessary environmental restrictions. We have been, for the most part, pleased with his Cabinet choices but are concerned that he lacks the respect and understanding of the power and impacts his office and decisions can hold.

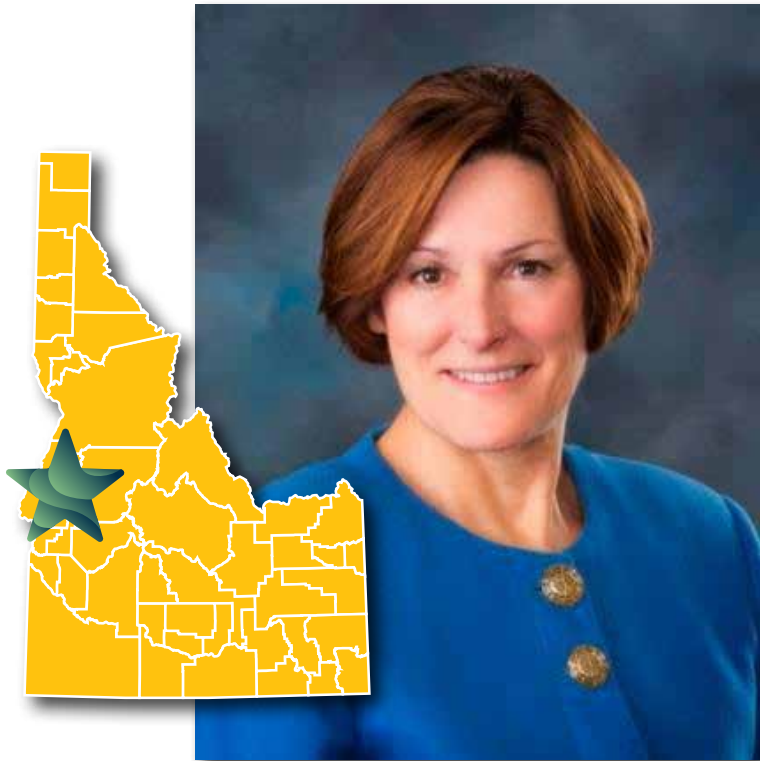
What was your experience in D.C.?

Going to Washington, D.C., with Idaho Grain Producers was a great opportunity. Our experiences in D.C. provided insight on how national policy that affects farmers across the country is developed and passed. We came away with a much greater understanding of how things do (or don't) get done in Washington. It really brought national politics to life.

It was great to visit one on one with our Idaho legislators and their staff as well as Layne Bangerter -- an Idaho farmer-rancher who was recently sworn in as an assistant to Pres. Trump. We have intelligent, down-to-earth people working for us in Washington.

A special part of the trip was being able to see the historic and cherished landmarks of the area. You can't spend a day at the National Mall, touring the museums, seeing the Capitol, White House and Monuments and not feel thankful to be an American. We felt a tremendous sense of pride and gratitude for the hard work and sacrifice of those who made this country what it is. Washington, D.C., is a special place





Representative Judy Boyle

Rep. Judy Boyle, the new chairman of the House Ag Committee, hails from a long line of ranchers on her father’s side. They first came out West on a wagon train in 1849 at the start of the California Gold Rush. Her mother’s people weren’t far behind, settling in Reno, Nev., to work on the railroads that would connect the West and the nation.

She was born and grew up in the northeast corner of California in the town of Susanville, northwest of Reno. Her ranching family, which included a younger brother and sister, were more connected to Nevada than California, and in 1976 decided they weren’t going to live in California any longer.

Boyle had just gotten married, and she and her husband moved with the family to a ranch her father bought north of Weiser, Idaho. Her father eventually sold that ranch at Manns Creek in 1990 and moved to a smaller place near Ontario. Boyle moved to a small place near Midvale, which her two children now lease and where her daughter raises and trains quarter horses and her son raises Angus cattle, corn, hay and sugar beets.

What was your childhood like?

It was great, we did a lot of hunting, fishing, riding horses, camping out - we were outside all the time. That’s how I raised my kids, and that’s how my son is raising his kids.

When did politics come into the picture?

I was always interested in politics. My grandfather took me to meetings since I was 5 years old – any kind of meetings,

Party:
Republican

Home:
Midvale

Occupation:
Rancher/freelance writer

Represents:
District 9; Adams, Payette, Washington counties and a portion of Canyon County

Tenure:
5th term, first elected in 2008

Committees:
Chairman of Agricultural Affairs, serves on Education and Resources and Conservation

Previous role in politics:
Natural resources director for the late U.S. Rep. Helen Chenoweth-Hage, substitute for Sen. Ric Branch in the Idaho Senate in 2001-2002

Other service:
Natural resources director for the late U.S. Rep. Helen Chenoweth-Hage, Washington County Planning and Zoning former commissioner

Affiliations:
Adams County Farm Bureau former vice president, National Rifle Association, Pacific Legal Foundation former chairman, Ranchers Cattlemen Legal Fund, Weiser River Cattlemen, Adams-Valley County Farm Bureau, former 4-H leader in Washington County

Honors:
numerous Friend of Agriculture awards from Idaho Farm Bureau; numerous Ag All Stars from Idaho Food Producers

Education:
Attended Lassen Community College, Boise State University, and University of Idaho

Family:
One son, one daughter and two grandsons

Interesting note:
Named one of the 100 most influential people in Idaho by Ridenbaugh Press

political, community, Forest Service, county commission, Rotary. He was involved in everything under the sun you can imagine. If anyone he liked was running for office, we’d be door-knocking and on floats and in parades. He was a county commissioner and later a city councilman when he moved to town.

How did your grandfather influence you?

He was the one who taught me how to read and comprehend and how to research – things you don’t get in school. The Wall Street Journal was always at the house and the Capital Press. He would cut out articles and ask me ‘who is telling the truth and who isn’t and how do you figure that out?’ I’d research it at the library and if I got it wrong, he’d take me back to the library and explain things.

He taught me that words mean something and you have to be careful and make sure it's right. I think that's why I love reading bills. I have his picture in my office just to remind me.

Where did life take you when you moved to Idaho?

We helped out on the ranch. I was just a stay-at-home mom, raising my kids and I home schooled them – my son during high school and my daughter since the 5th grade. When the kids went to college, I went to work for Helen Chenoweth.

What was your position on Chenoweth's team?

I helped her on her first campaign in '92 when she started getting ready to run for Congress. It took two full years to run for office. She was elected in '94. I traveled all over the 1st District, from Canada to Nevada. We'd sometimes travel to little towns for hours and just a few people would show up to the meeting. But that's just Idaho – the first meeting just a couple of people, the next time 50 people and the next time 250 people.

When she took office, I was the roving person, so I had an office in all of her three Idaho offices – Coeur d'Alene, Lewiston and Boise. I would go back to D.C. once a month for a week at a time when we were working on natural resources bills. Helen would try to talk me into moving there, but Friday would come and I'd say 'I haven't seen a horse, a cow or a mountain in a week and I'm going home.' D.C. is not my favorite place at all.

Where did life take you after Helen retired from office in 2001?

That year, 2001-2002, my state senator (Ric Branch) wasn't able to be here (the Legislature) because of ranching duties at home and asked me to substitute for him. It was a great opportunity. I learned a lot and made some really good friends. I got to see how things work from the inside of the Senate.

In 2003, I went to work for Farm Bureau as an ag lobbyist here in Boise and did that until 2005. In 2006, I went to work for Skip Brandt when he was running for office (U.S. House). Helen had talked him into running. There were a lot of people running; Bill Sali won.

After that, I started doing freelance writing. I had always written articles. I wrote for Capital Press, Range magazine, an ag newspaper out of Montana, and local newspapers as well.

In 2008, I ran for a House seat.

Who do you represent?

I represent all the citizens of District 9. I am always up front with voters that I am a conservative and that my core principles come from the Bible and the Constitution. That way they know exactly where I stand on issues and should not be surprised by my votes. I am always willing to listen to all sides, research the issues and seek expertise from people I trust.

What issues are near to your heart?

All legislators have their own expertise as we cannot be experts on all the many issues that come before us. I love our nation, state, the Constitution, natural resources and agriculture.

Although I have never been a school teacher or administrator, I have been a substitute teacher, a 4-H leader, have tutored many children, taught my own children to read by the time they were 4 years of age, and homeschooled them during middle and high school. I believe children have a strong love of learning, which should always be nurtured. As I often say in our Education Committee, students must always be the priority -- not the adults or the system.

What's your overall feeling about the Idaho Legislature?

The focus of the Legislature should always be on keeping government out of the way of citizens so they can achieve to their fullest potential. Government is to safeguard our God-given rights and to provide for the health and safety of citizens and our country while allowing for as much freedom as possible. When restrictions must occur, they should be written as clearly as possible and as limited as possible.

What's your typical day when the Legislature is in session?

A typical day for me at the Legislature begins with the first phone call, email, or text usually at 5:30 a.m. and continues until I turn off my iPhone at night. Informal meetings go on all day between committee meetings and being on the floor. Those meetings can be with constituents, citizens, other legislators, staff, lobbyists and state agencies regarding proposed legislation, current law or rules or issues citizens are having with government. There is always more to do than time to do it, which is another reason we all have our own expertise and are limited to three committees. I don't attend many of the social functions, as there just isn't time to do so.

What would be a perfect day for you?

A perfect day for me as a legislator is solving a constituent's problem, passing good legislation or killing harmful rules or legislation, assisting a colleague with their draft legislation, seeing the happy smiles on kids' faces as they tour the beautiful Capitol building or explain a project on which they are working.

A perfect day personally is spending time with my grandsons, my grown children and my friends. Being outside enjoying and appreciating God's creation is my favorite activity -- which covers about everything. ■

Exports Fuel Idaho's Ag Economy

By Laura Johnson, Marketing Bureau Chief, Idaho State Department of Agriculture

Exports are essential to Idaho agriculture and our economy. USDA's Economic Research Service latest data released Oct. 26, 2016 put Idaho's total agriculture exports at \$1.87 billion. The top sector was dairy products followed by wheat and potato products. Idaho also exports malt, beef, canola, vegetable and alfalfa seed, oilseeds, hay, animal feed, hides and skins, fresh fruit, pulses, onions, wine and more.



Overall, agriculture is very export dependent. Nationwide, 1 in 3 acres of farmland is planted to products destined for export markets. In Idaho, wheat is one of the most export dependent crops with nearly 50% of the entire crop sold internationally. And one in six rows of Idaho potatoes – whether frozen, dehydrated or fresh - ends up exported.

As a grower, however, it is often difficult to know the farm product's ultimate destination. There are generally several businesses in between the grower and the final consumer or end user. The dairyman sells his milk to the processor and may not know that the cheese, milk powder or whey protein may end up on a pizza in South Korea, in a bakery product in Japan or in an infant formula in China. The wheat farmer who delivers his wheat to the local grain elevator may not realize the wheat ends up in a flour tortilla in Mexico, noodle in Taiwan or steamed bun in Japan. But the truth is, so many of Idaho's products that originate on a farm in one of our rural communities ends up on a plate somewhere else in the world.

Where do Idaho agriculture products go? Our primary markets are right in our own backyard in North America. For more than 10 years now, Idaho's top two trading partners for agriculture have been

Canada and Mexico. Historically, Japan was Idaho's largest agriculture export market. Canada surpassed Japan in 2004, however, to move into the top slot and Mexico moved past Japan into the second slot in 2006. **Together, Canada and Mexico represent an astounding 44% of the export market share for Idaho agriculture.** Nearly half of all ag exports from Idaho are destined to Mexico or Canada!

Much of the growth to both markets has been a result of the NAFTA trade agreement. Although no agreement has been perfect, and some trade irritants remain, Idaho agriculture has benefitted significantly from increased market access and increased trade within the North America region. NAFTA went into effect January 1, 1994, and immediately dropped tariffs on 70% of all products to Mexico to zero. All products became duty free January 1, 2008 after the full phase in period.

Since the implementation of NAFTA, Idaho agriculture exports to Canada increased 289% and to Mexico a whopping 994%!





50% of Idaho's WHEAT is exported to foreign markets

Mexico was Idaho's number one agricultural export market in 2015. Exports to Mexico were led by malt topping \$64 million. InteGrow currently sells 100% of their Idaho Falls malt production to Anheuser-Bush InBev (ABI) beer plants in Mexico. Barley production for this plant represents more than 15% of Idaho's total malting barley crop. In addition to malt, Idaho exports over \$40 million in frozen potato products, \$30 million in dairy products and millions more in seeds, legumes, animal hides and onions. Mexico is also an important destination for Idaho wheat, with an estimated three to five million bushels shipped from Idaho to Mexico annually, valued at more than \$13 to 22 million in 2016. "Mexico is a critical market for U.S. wheat producers and our top priority would be to keep the border open and see wheat continue to flow duty-free with no tariffs," said U.S. Wheat Associates spokesman Steve Mercer.

Looking north, Idaho agricultural exports to Canada are led by processed potatoes including nearly \$20 million in frozen French fries. Nearly \$24 million in canola seed and \$17 million in dry beans from Idaho are shipped to Canada as well. Additional exports include fresh onions, alfalfa seed, vegetable seed, cold-hardy trees and other processed foods.

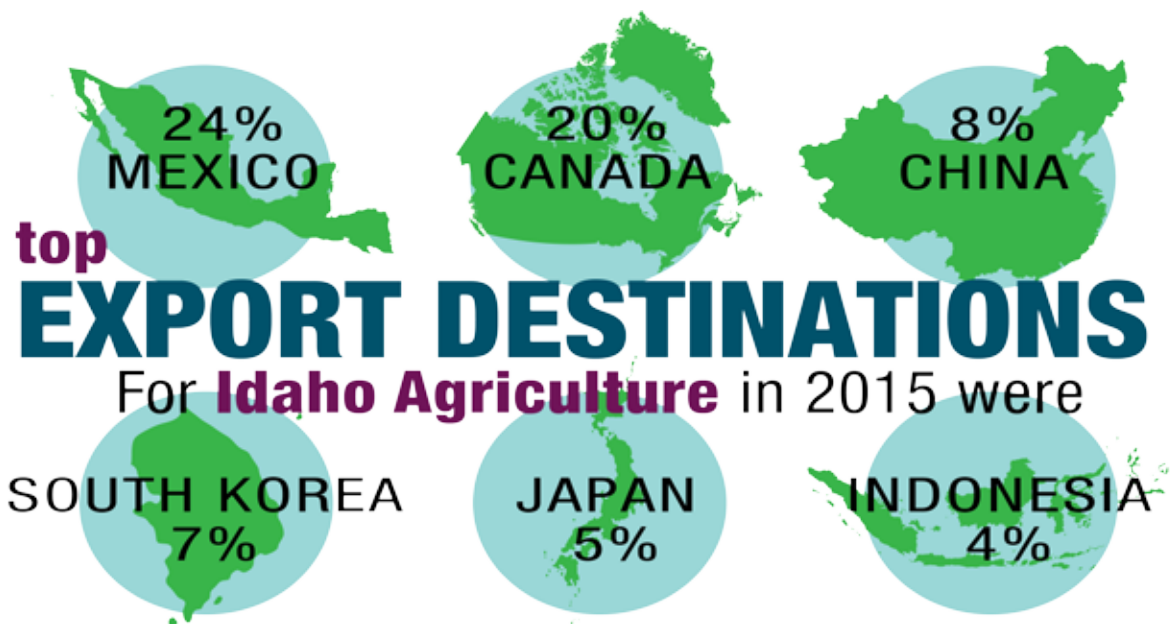
Globally, Idaho agriculture exports had quite a run setting records five years in a row. Although 2016 export data are not yet final, they will be below 2015 levels. Global prices were down on a range of commodities and were subsequently reflected in lower total export values. But there were bright spots. Potato exports reached their second highest level on record, driven by strong increases in frozen potato exports.

U.S. whey protein exports hit a record high, boding well for Idaho, a major cheese and whey processor.

Long-term, Idaho agriculture must continue to look at export markets for business growth. Over 95 percent of the world's population lives outside of the United States. A growing population globally is driving demand and outpacing growth in the domestic market, fueling economic returns to Idaho producers. Most significant is the growth in the population of the middle class – a segment that can afford imported food products on a regular basis. **By the year 2030, economists predict that the middle class population will more than double from 2.0 billion today to 4.9 billion. By 2030, the middle class population in China alone is estimated to be four times the entire U.S. population.** By 2030, Asia is expected to host 65% of the global middle class.

Next to North American markets, Idaho's geographic location near the West Coast, makes shipping to Asia more competitive than many other international destinations. China is now Idaho's third largest export market for food and agriculture products. After China, top markets include South Korea and Japan. Emerging economies in Southeast Asia are seeing strong growth and opportunity for Idaho agriculture. Such economic growth in such markets as the Philippines and Vietnam are particularly promising for Idaho wheat.

The numbers really do tell the story – global demand is growing far faster than domestic demand. **The entire U.S. population is just under 325 million.** In 2015, our population growth rate was 0.8. The U.S. market is mature and food consumption is stable

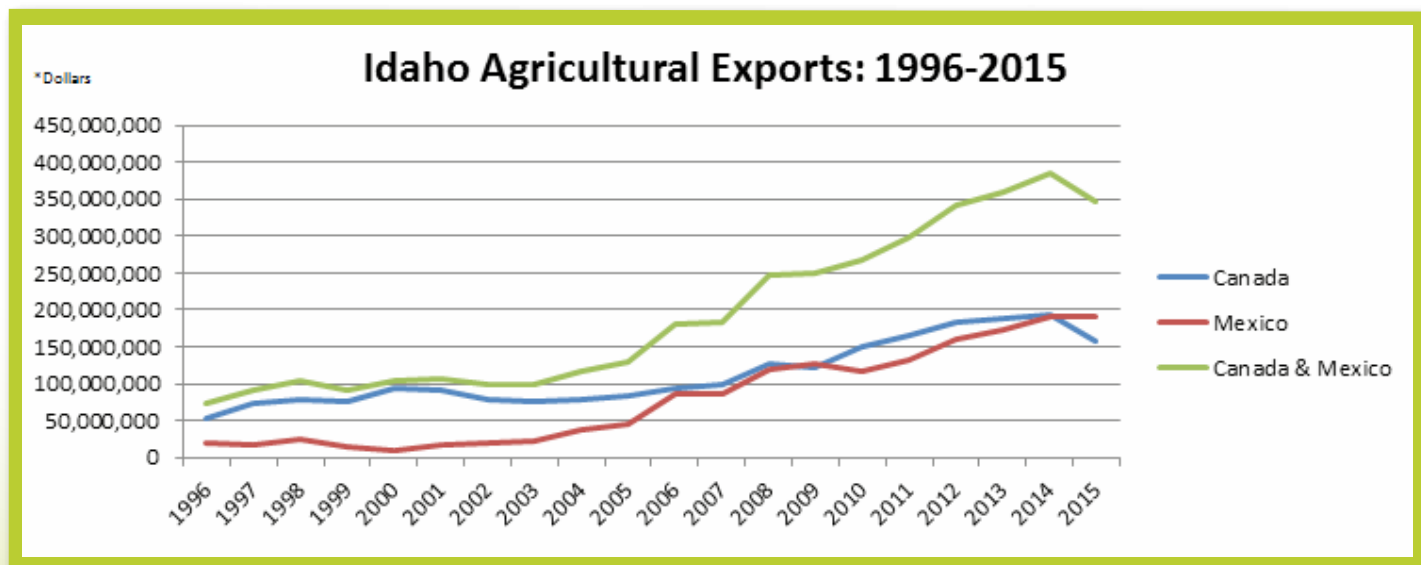


with ag industries competing for a share of the food plate. Yet our farmers and ranchers are some of the most productive, dedicated and efficient in the world. Technological advances result in improved varieties, increased yields, more efficient production practices, better soil and water management and tremendous gains in efficiency. So we produce more with less. Since the domestic market is relatively flat, Idaho agriculture needs to look outside of the U.S. to support growth. The emerging middle class is fueling tremendous demand and Idaho's amazing farmers have the safe, superior quality supply to meet that demand.

Export and import data is only one part of the international trade relationship and does not tell the whole story. Foreign investment is also a part of the equation. Investment from Mexico has had a direct impact on the grain industry in Idaho. The InteGrow malt plant in Idaho Falls was initially an \$80 million capital investment from the Mexican company Grupo

Modelo. The facility, which has since sold, was a major driver in providing an increased opportunity for Idaho barley farmers. The first phase alone necessitated an increase of nearly 58,000 acres of new malting barley.

Another point to consider in evaluating the importance of trade to agriculture is the inter-connectivity of supply chains. Indeed some of the U.S. imports of Mexican beer include Idaho malt. Reduced market access for Mexican beer to the U.S. may reduce demand for Idaho malt. The same is true of imported tortillas and bread products from Grupo Bimbo Mexico that also include Idaho wheat or Sabrita's snack products that are made with Idaho dehydrated potato flakes. Clearly, Idaho agriculture has reaped significant benefits from international trade and is in a great position to meet the growing demands for the best products in the world. 🇲🇽



*Note: Data not available prior to 1996



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Idaho Wheat Growers Help Fund Research into Low-Falling Number Wheat

Soft white wheat from the three Pacific Northwest states of Idaho, Oregon, and Washington is renowned for its high quality and consistent, reliable harvest. Over 85 percent of the annual crop is exported to Asian customers who are willing to pay a premium price for its exceptional quality.

However, the quality of the crop is threatened by untimely temperature fluctuations, rainfall, and perhaps other factors. Eastern Idaho lost more than half its crop in 2014 because of low falling-number scores due to pre-harvest sprout (PHS) and Northern Idaho and Eastern Washington suffered similar losses in 2016 because of late-maturity alpha amylase (LMA). Frequency of low-falling number (LFN) wheat seems to be increasing. After carefully studying low-falling number issues for several months, the three states are pooling resources and working together to find solutions.

“We are pleased to announce, in conjunction with Oregon and Washington, the formation of an integrated, multi-discipline, multi-state research team to address the falling number issues that all PNW wheat growers are facing,” said Jerry Brown, Chairman of the Idaho Wheat Commission. Among the first actions of the new team will be to apply for a National Institute of Food and Agriculture (NIFA) competitive grant, which will give PNW researchers additional resources to solve the problem. The three states are also requesting new resources for USDA’s Agricultural Research Service (ARS) station in Pullman.

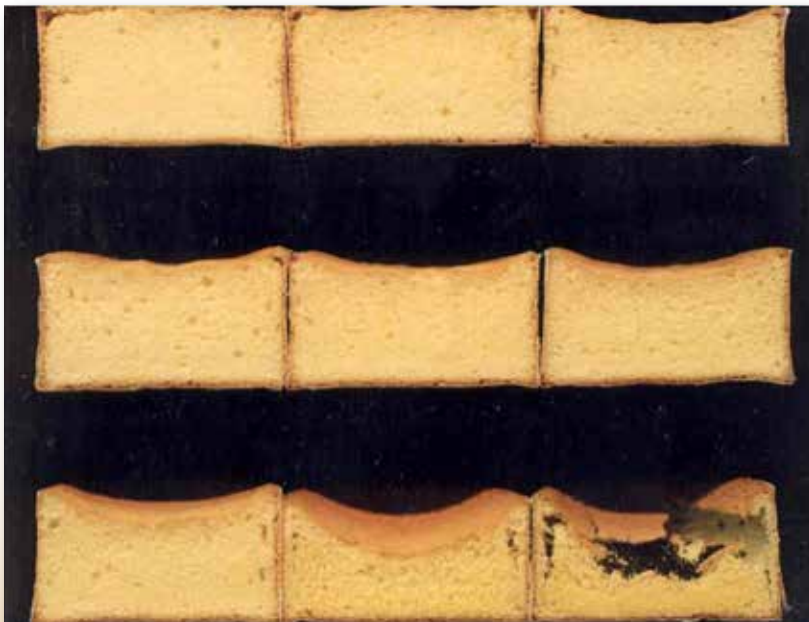


Researchers working at LFN Summit in Spokane on February 16.

PNW researchers held a roundtable in Moscow in October followed-up by a Tri-State LFN Summit in Spokane in February. The purpose of the two meetings was to discuss the current state of the science surrounding low falling numbers, determine major research priorities and build research teams.

“Moving rapidly on this research is a must,” said Potlatch Joe Anderson, President of Idaho Grain Producer’s Association. “If not addressed, this difficult problem will continue to cost growers and the wheat supply chain millions of dollars, and we risk losing some of our most valuable customers. This is an important export crop and we must remain competitive.”

Wheat commissioners from Idaho, Oregon, and Washington made visits to ARS and other federal agencies the first week of February during winter meetings of U.S. Wheat Associates and the National Association of Wheat Growers. All three states were encouraged by the response received. “The federal government sees the research dollars already being spent by wheat producers in the PNW and realizes the eventual fix is likely beyond the resources available in the three states. Grower money in the pot helps make a



Sponge cake quality drops as falling number score drops.

more convincing case for federal funds,” said Joseph Anderson, District 1 commissioner from Genesee.

The three states have asked for \$1 million in new funds for ARS-Pullman and are preparing a proposal for a three-year competitive grant, totaling \$2 million, from the National Institute for Food and Agriculture to fund soft white wheat falling number research at land grant universities and other cooperators. Research will continue to be coordinated jointly among the three states.

Low falling-number wheat has been sold at significant discounts this year and in 2014, causing financial losses for growers, grain handlers, exporters, millers, and end-users. Just this year, as much as 40 percent of the PNW wheat crop was affected by low FN, and selling price per bushel was several dollars below commercial prices.

Through discussions over the past several months, PNW researchers and commissioners have established the following research objectives:

- Improve the current Hagberg-Perten Falling Numbers Test to increase its accuracy.
- Develop a more rapid and simple test for use at grain elevators and by growers to determine grain quality.
- Develop new assays to measure PHS and LMA that are repeatable, affordable and accurate (genetic screening tools.)

- Characterize other environmental and management variables associated with PHS and LMA.
- Examine the impact of LMA and PHS on end-use quality.
- Determine other starch properties and interaction between starch and other macromolecules that may be used to reduce the risk of LFN. ■

What is the Falling Number (FN) test? The test detects starch degradation due to alpha-amylase enzyme activity and perhaps other unknown factors in wheat flour. Low FN indicates the presence of too much alpha-amylase enzyme in the flour, leading to problems with poor quality baked goods. A solution to reduce risk of low FN is improving genetic resistance to the two or more causes of low FN such as:

- Preharvest sprouting (PHS), caused by rainfall before harvest that triggers germination of grain on the mother plant.
- Late maturity alpha-amylase (LMA), a developmental syndrome defect occurring in response to observed environmental temperature shock and other factors during grain development.



Sprout-damaged wheat piles up in American Falls in 2014

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MAY 20
SNAKE
RIVER
FAMILY
FESTIVAL

THE SNAKE RIVER FAMILY FESTIVAL IS A FAMILY FRIENDLY EVENT WITH FREE FOOD, LIVE MUSIC AND LOTS OF ACTIVITIES.

The Snake River Family Festival will highlight the multipurpose Snake/Columbia River system that is so crucial to the economy and quality of life in the region.

Wheat growers from Washington, Idaho and Oregon along with local port districts and other river partners have created this event to educate the public on the importance of the river system to fish, the Northwest economy and recreationalists.

The Port of Whitman County's beautiful Boyer Park and Marina, just down river from Lower Granite Lock and Dam, is the festival's venue. We encourage the public to come and ask questions, eat and play as we celebrate the importance of the river system.

- Salmon recovery is important and we have made tremendous progress. There will be an information tent with opportunities for the public to talk with experts about river transportation and salmon issues.
- River navigation provide by the four Snake River locks and dams connects Idaho, Oregon and Washington farmers with access to markets and customers all over the planet.
- The four Snake River dams provide clean hydropower and help integrate the growing portfolio of wind energy onto the grid.
- The river is a key driver of tourism as well as on-water recreational opportunities such as boating, fishing and camping.

WE HOPE TO SEE YOU THERE!



See us on **Facebook** - Snake River Family Festival
Email: snakeriverfamilyfestival@gmail.com
Contact: Linda Olson (509) 397-3791

Loading barges at Lewis and Clark Terminal



CHS Primeland keeps eye on the future

From its humble beginnings in 1930, when a small group of farmers formed Lewiston Grain Growers, CHS Primeland has flourished into a cooperative with clout.

It now boasts 2,500 farmer-owners, 19 grain handling facilities, nine agronomy facilities -- including a massive storage hub -- a seed-conditioning plant with seven distribution sites, 10 retail fuel locations and four country stores.

Its growers, facilities and employees span a broad swath across northern Idaho and eastern Washington to send grain down the Columbia River to the ports of Portland and Vancouver, and ultimately to destinations across the globe.

The co-op prides itself on integrity, innovation, environmental and community stewardship, rewarding customer relationships and a tradition of partnership and shared success. Helping its farmer-owners grow their operations and succeed is the promise CHS Primeland stands behind.

Lewiston Grain Growers operated as an independent cooperative for 65 years before merging with Harvest States Cooperative in 1995. Harvest States then merged with Cenex in 1999, creating the overall corporate structure and the name CHS Inc., which the entire company operates under today. CHS Primeland is a locally governed business unit within the CHS cooperative.

“We are a regional retail operation of CHS. The name **CHS Primeland** identifies our business operating in the Pacific Northwest,” said Russ Braun, grain merchandising manager for CHS Primeland.

CHS is the nation’s leading farmer-owned cooperative and a global energy, grains and food company. A Fortune 100 company, it provides farmers, ranchers,

local cooperatives and other customers energy, crop nutrients, grain marketing services, animal feed, food and food ingredients, along with business services including insurance, financial and risk management.

It is very much a complex business, as is CHS Primeland -- which requires nearly 200 employees to keep the wheels turning, Braun said.

“We are a full-service cooperative and also do bulk fuel and seed conditioning and sales. We pretty much help our producer-owners from start to finish with the crop and getting it to end users,” he said.

Premier support

CHS Primeland has 17 experienced agronomists on staff and offers high-quality certified seed, fertilizer, crop-protection products and fuel in numerous locations across its growing region. The co-op helps market the crop and offers its producers cash sales, contract-forward sales, compass contracts and hedge-to-arrive contracts.

It also has a full-service credit department, offering short- and long-term loans for such things as operating capital and inputs, as well as real estate and equipment purchases.

CHS Primeland’s goal is to help producers make economically viable decisions from seed to sale so they are profitable, Braun said.

“As a cooperative, the better they do, the better we do,” he said.

To that end, Primeland has performed extensive upgrades to its facilities over the last three to five years “to be prepared to take care of our producers today and in 20 years,” Braun said.

The co-op has made significant improvements in its



Lewis Clark Terminal, Lewiston, Idaho

grain-handling, fertilizer and fuel facilities aimed at optimizing speed, size and scale. New grain leg and distribution systems at strategic locations, for example, have increased loading from 4,000 bushels per hour to 20,000 bushels per hour, in some cases. A ground-up, state-of-the-art grain facility in Nezperce, Idaho, added not just storage but speed – 20,000 bushels per hour load-out – for area grain movement.

Fully operational this spring, a new agronomy hub plant at the Port of Wilma in Clarkston, Wash., will be the largest agronomy facility in the Inland Northwest, with a capacity of 24,000 tons of dry fertilizer, 2.5 million gallons of liquid fertilizer and a massive warehouse for crop-protection products. It positions CHS Primeland to better serve its patrons through improved buying power, closer product storage and better logistics.

“We’re investing now, as well as for the future, for the needs of area farmers,” Braun said.

Grower-led investment

Such investment decisions are guided by a producer-member board, which meets about 10 times a year. Hailing from different areas within the region, board members – all active farm owners – are elected locally to represent the broader membership.

Tim Eichner, chairman of the board, has grown wheat and barley on the family farm in Kendrick, Idaho, for 37 years, and his family has a long history with the co-op. Both his father and grandfather were members, going back to the days of Lewiston Grain Growers. He’s seen substantial growth and more opportunity for growers since the cooperative merged to form CHS in 1999.

“I think there are multiple benefits. One of the main ones is when the local co-op makes a profit, those profits are shared among the patrons,” he said.

“With CHS, we had access to more capital and more support, and that has really been a blessing to us. We never would have been able to tackle some of the large building and infrastructure upgrades we’ve done,” he said.

Producers have not only a financial holding in the co-op and, therefore, the opportunity to benefit from its success, they also have a say in how the co-op operates, in a transparent structure that reaches from the farm to CHS senior management.

“I think the strength of the co-op has been the ability to take producer-owners’ input into consideration and turn that into opportunity,” Eichner said.

That opportunity is supported by a great team at CHS Primeland.

“A company is only as good as the employees, and we’ve been lucky to have some really high-quality employees,” he said.

Feeding the world

CHS Primeland’s production focuses on wheat -- soft white, hard red and dark northern spring -- feed and malting barley, canola and oats. About 98 percent of the co-op’s cereal grains are exported, and the co-op is a large stakeholder in the Lewis-Clark terminal at Lewiston and three barge-loading facilities on the Snake River to facilitate that movement.

“Some of our biggest buyers are Japan, Korea, Taiwan and the Philippines,” Braun said. “The Snake River system is pivotal to supply our export markets.”

While the vast majority of wheat is exported, the feed



New Nez Perce Idaho Grain Elevator

barley swings between export and domestic markets depending on the year. The malting barley is sold exclusively to Great Western Malting Co., and the bulk of the canola is sold to Viterra and crushed by Pacific Coast Canola at Warden, Wash. Most of the oats are traded domestically.

CHS Primeland’s producers also grow Austrian winter peas, whole green peas, lentils and garbanzo beans, which are marketed across the U.S. and the world by business partner George F. Brocke and Sons, Inc., of Kendrick, Idaho.

As board chairman, Eichner sees more opportunity for growth ahead.

“If you don’t grow a little, you’re going to have a hard time being competitive. We’re always looking for controlled growth that benefits the patrons and CHS Primeland,” he said. 🇺🇸



Grand opening of Port of Wilma Fertilizer Hub

About CHS Inc.

Net income FY2015: \$781 million

Net revenue FY2015: \$34.6 billion

Cash returned to owners in FY2016: \$519 million

Owners: 1,100 cooperative, 75,000 producers, 20,000 preferred stockholders

Employees: more than 11,000, including 1,100 internationally

Governance: 17-member board of directors consisting of farmers and ranchers

NASDAQ preferred stocks: CHSCP, CHSCO, CHSCN, CHSCM and CHSCL

Highlights

Agriculture -- More than 2 billion bushels of grains and oilseeds (52 million metric tons annually) marketed to domestic and export customers in more than 65 countries

Retail -- More than six dozen operations in 16 states and Canada with more than 500 locations serving more than 75,000 producer-owners and other customers

Processing and food ingredients -- Nearly 2 billion pounds of soybeans and canola refined annually to produce 3.3 million tons of soy protein products and canola meal

Petroleum refining and pipelines -- Two refineries with a combined 140,000-barrels-per-day processing capacity

Renewable Energy -- One of the largest U. S. marketers of ethanol and a leading marketer of biodiesel-blended products, as well as a growing participant in global renewable fuels imports and exports

Transportation -- One of the nation’s largest private truck fleets, logging nearly 35 million miles annually, with specialized equipment serving North America.

Stewardship -- CHS Foundation and Corporate Citizenship programs, investing in education and leadership development projects to shape agriculture’s future, provided \$15.5 million in grants in 2015.

Community service -- Harvest for Hunger food drive connects CHS employees, customers and partners and has raised more than \$4 million and 2.7 million pounds of food since 2011. CHS Days of Service supports employee volunteerism through paid time off for community service.

Source: CHS Inc.

Idaho wheat growers score with molecular geneticist in their corner

The University of Idaho and Idaho's wheat industry are upping their game with new wheat molecular geneticist Daolin Fu on the team.

The new position, along with a new gene-editing lab and research support, is being funded by the University and the Idaho Wheat Commission through growers' investment in research.

Fu started work at the university last August and will be taking wheat variety development in a new direction, working at the molecular level to identify genes that control yield, quality and other traits to improve agronomic performance and end-use wheat functionality.

Wheat molecular geneticists and wheat breeders are closely related but have a different focus, he said.

For example, a molecular geneticist aims to understand molecular mechanisms conferring desirable traits. A wheat breeder aims to deliver desirable traits in advanced varieties or lines.

"Both are essential components of a wheat team. Close collaboration between them is critical for building dynamic and productive wheat programs," he said.

Pre-breeding on trait development intends to harness desirable traits and/or genes beyond the narrow range of commonly cultivated varieties. Finished variety development normally uses commonly cultivated varieties in traditional breeding.

"Both fields are mutually important in breeding and variety development. Desirable traits/genes can be used to advance premier varieties using genome editing," he said.

Since his arrival last August, Fu has been working to set up a genome editing and transformation (GET) laboratory at the university's new Integrated Research and Innovation Center on the Moscow campus.



L to R: Russell McClanahan, facility manager, Integrated Research and Innovation Center; Idaho Wheat Commissioner Bill Flory; Daolin Fu; and Idaho Wheat Commission "Genessee" Joe Anderson

"Genome editing is one of the most powerful techniques we can use for wheat improvement," he said.

Having a position with a focus on wheat molecular genetics was a wise decision to improve the university's and wheat industry's strong ongoing wheat programs, he said.

Fu's intention is to integrate his research team into the university's broader wheat team. The university has a strong wheat team, working on agronomy, soil, breeding, extension and more, and he looks forward to collaborating with its wheat scientists, he said.

"I will also reach out to many other wheat scientists to increase our reputation on wheat programs," he said.

To build his research team, Fu has recruited two visiting scholars from China and plans to recruit a research specialist, a Ph.D. student, a master's student and two undergraduate technical helpers. The GET lab will be fully functional by the end of March, and he expects to have the team in place by the end of the year.

"Dr. Fu is a world-class wheat molecular geneticist. His expertise will drive our understanding of the genetic regulation in all phases of wheat production," said Mark McGuire, University of Idaho College of Agricultural and Life Sciences dean of research and director of the Idaho Ag Experiment Station.

Fu brings skills that are cutting edge, including gene editing tools to study specific processes in wheat and other crops, he said.

"The importance of the position was recognized by the Idaho Wheat Commission who generously support the position. Dr. Fu's work will certainly aid the wheat industry but will also likely help all crops in Idaho," he said.

Wheat grower commitment

IWC budgeted \$679,000 over five years to support Fu's salary, start up money and operating expenses (including support scientists). It also provided Fu a \$40,000 grant to begin work on the alpha-amylase gene family and its effect on falling numbers.

IWC is pleased to have Fu join the university and to have a researcher focused on wheat genetics and trait development, said Blaine Jacobson, IWC executive director.

"It will help Idaho growers continue to have the most current technology in their wheat seeds and help Idaho continue to be a leading wheat-growing state," he said.

Idaho wheat growers were an integral part of making the molecular geneticist position a reality, said Joe Anderson, IGPA president.

After the soft white winter wheat breeder left the University of Idaho, it left an open position. The university was facing severe financial challenges, however, and the position stayed open. Subsequently, the university entered into a cooperative agreement with the Idaho Wheat Commission and Limagrain Cereal Seeds for wheat breeding and variety release, he said.

"I was on the Idaho Wheat Commission at the time, and it appeared that the U of I did not need another soft white winter wheat breeder in the traditional sense," he said.

Washington State University and Oregon State University both had soft white winter wheat breeders, and as many as six private companies either had or were developing soft white winter wheat varieties.

"What was most needed was someone in the Pacific Northwest to be able to focus on trait development, specific to the needs of growers in the region, without the pressure to release finished varieties," he said.

With such a capability, the university could establish itself



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Daolin Fu at the IRIC Building on the UI Campus in Moscow, ID

in the region in the development and marketing of discovered traits.

“I suggested this strategy to the Idaho Wheat Commission, and we took it to the U of I College of Agricultural and Life Sciences. At first CALS was reluctant to embrace the concept. They didn’t know how they would pay for such a scientist. The IWC did not believe that we could afford to wait,” he said.

There were issues that needed immediate attention -- the low falling number issue was but one of them. IWC offered to fund the cost of such a position, including faculty compensation.

“This type of funding has not been common for commodity commissions in Idaho. The U of I, perhaps somewhat reluctantly, agreed to accept the IWC offer. We are very fortunate that the search led to the hiring of Daolin Fu,” he said.

Moving forward

Fu has already submitted two research proposals for IWC funding – the one on the alpha-amylases effects on low falling numbers and another on developing wheat resistance to wireworms.

“With these two different types of projects on hand, I am hoping to solve some important issues that impact Idaho wheat production,” Fu said.

He’s excited about the position with the university,

which will allow him to use a lot of his previous genetic research to address wheat issues in the Pacific Northwest and continue his many years of genetic research into such areas as defeating stripe rust.

He’s also excited to be able to spend more time with his wife and two sons, ages 11 and 9. Before taking the position and since 2008, he was spending most of his time in China, leading genetic research in wheat for Shandong Agricultural University, while his wife and children remained in California.

“I am very excited to come back and be with my family and work in my field,” he said.

Fu graduated from Shandong Agricultural University at Shandong, China, in 1994 with a bachelor’s degree in crop science. He then studied at the Institute of Genetics, Chinese Academy of Sciences at Beijing, earning a master’s degree in genetics in 1999. He received a doctoral degree in genetics from Kansas State University at Manhattan in 2003.

He did post-graduate research at the University of California-Davis from 2004 to 2007, working with renowned wheat researcher Jorge Dubcovsky. That led to a position as assistant project scientist in the Department of Plant Sciences at UC-Davis.

But with a deep passion to serve his mother country, he decided to take a position with Shandong Agricultural University to lead its programs in wheat genetics. He had served China for eight years before taking the current position with the University of Idaho.

“I realized my dream of serving my mother country. I am now passionate to contribute to the United States where I was trained to be a scientist,” he said.

His research experience is extensive, as evidenced by two dozen published research articles and nearly three dozen proceedings and presentation at international conferences.

His passion for wheat research harkens to his humble childhood in the Shandong countryside, where his family of six relied on one acre to produce wheat, corn and cotton.

“Just as I had to depend on wheat to survive in the old days, I have too much passion for wheat genetics to leave this field,” he said.

Fu also hopes to pass that passion on to his students. His position at the University of Idaho consists of 80 percent research and 20 percent teaching.

“Teaching is very important in my career. As a professor, I am obligated to teach and train young generations. As a scientist, I will incorporate scientific discoveries in my teaching. Teaching and learning is mutually beneficial to my research,” he said.

Fu also intends to work closely with wheat producers through cereal schools, grower meetings and conferences. He plans to make his research programs accessible through open houses, open fields and internet resources.

“It is my fervent hope to contribute to Idaho wheat production,” he said. ■

Boyuan Chen to Represent U.S. Wheat Farmers in Taiwan Market




U.S. Wheat Associates (USW) has hired Boyuan Chen as Country Director in the organization's Taipei, Taiwan, office. Starting Nov. 1, 2016, Chen will manage U.S. wheat market development programs and USW's business and government relationships in a market that imports on average

about 38 million bushels of U.S. wheat every year. Chen will replace long-time Country Director Ron Lu, who is transitioning to retirement at the end of 2016 after 33 years with USW.

“Boyuan Chen is an ideal manager for this position who will draw from 20 years of experience in food and feed commodity procurement with Uni-President Enterprises,” said USW Regional Vice President Matt Weimar. “He joins our history of strong leadership since Western Wheat Associates opened an office in Taipei more than 50 years ago. By helping Taiwan’s flour millers and wheat foods industry constantly improve their products, we have developed very loyal customers for U.S. dark northern spring, soft white and hard red winter wheat farmers.”

After three years in banking, Chen started with Uni-President, Asia’s largest food production corporation, in 1997 as a grain market analyst and gained experience in the company’s soybean procurement group. In 2001, he moved up to assistant chief of the company’s Taipei procurement section working closely with the Taiwan Flour Mills Association (TFMA), the Taiwan Feed Industry Association and the Taiwan Vegetable Oil Manufacturers Association. Chen’s last position with Uni-President was as section chief of import affairs from 2009 to 2016. He earned a bachelor’s degree in Agricultural Economics from National Taiwan University, Taipei, in 1989, and a master’s degree in Financial Management from Syracuse University in 1994.

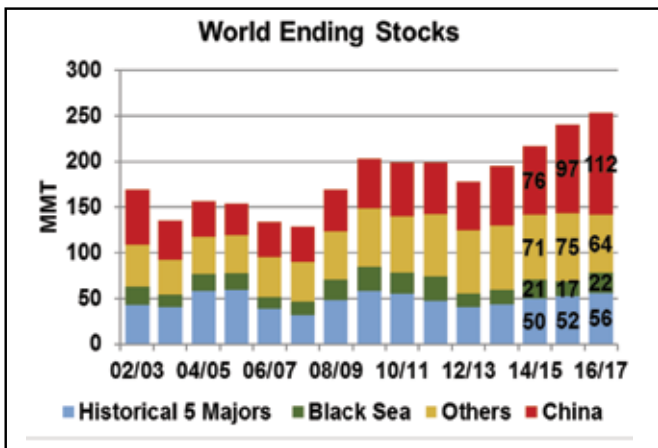
USW is the industry’s market development organization working in more than 100 countries. Its mission is to “develop, maintain, and expand international markets to enhance the profitability of U.S. wheat producers and their customers.” The activities of USW are made possible by producer checkoff dollars managed by 19 state wheat commissions and through cost-share funding provided by USDA’s Foreign Agricultural Service. For more information, visit www.uswheat.org or contact your state wheat commission. 



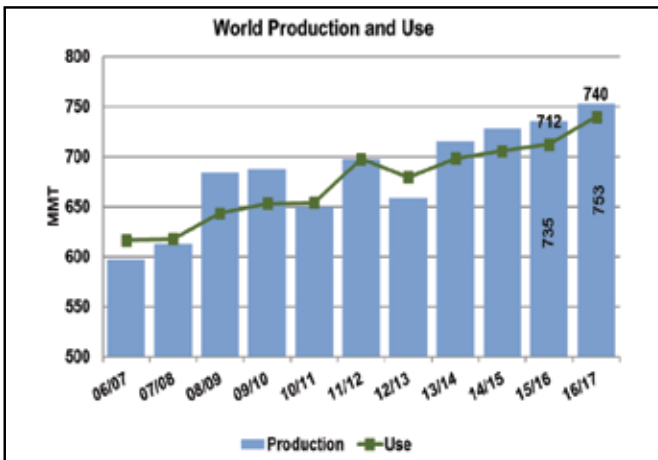
WORLD WHEAT SUPPLY AND DEMAND SITUATION AND OUTLOOK

USDA pegged 2016/17 world wheat production at 753 MMT (27.6 billion bushels), up 2 percent from 735 MMT (27.0 billion bushels) in 2015/16 and 6 percent above the 5-year average. If realized, it would be the fourth consecutive year of record world wheat production. USDA projects seven of the eight major exporting countries will increase production. The only exporter with lower production is the European

Union. Record-large carry-in stocks add to the surplus, resulting in the largest estimated world wheat supply on record. USDA estimates 2016/17 world carry-in stocks at 240 MMT (8.84 billion bushels), up 11 percent from last year and greater than the 5-year average of 197 MMT (7.25 billion bushels). Total world supply will reach a projected 993 MMT (36.5 billion bushels), up 40.4 MMT from the record set in 2015/16.

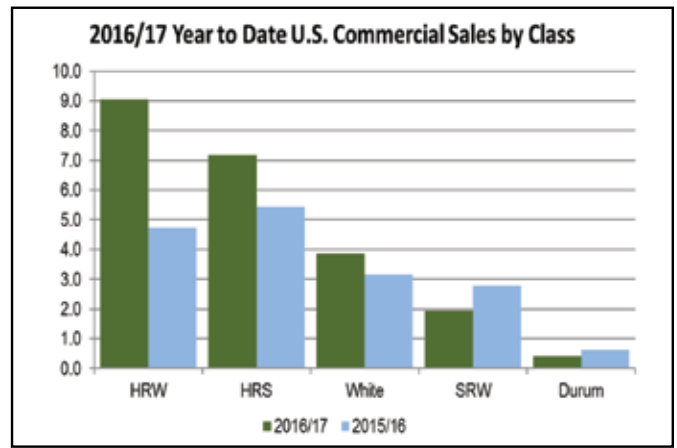


The ample world supply will help meet strong global wheat demand. USDA expects total consumption will increase for the fourth consecutive year and reach a record 740 MMT (27.2 billion bushels), compared to 712 MMT (26.2 billion bushels) in 2015/16. Feed wheat use is predicted to grow an estimated 6 percent to a record high 147 MMT (5.42 billion bushels) due to increased global supplies of feed wheat. USDA expects 2016/17 world wheat trade to grow to a record 178 MMT (6.54 billion bushels). If realized, it would be 11 percent greater than the 5-year average of 160 MMT (5.86 billion bushels). USDA expects world carry-out stocks to increase 12.8 MMT (470 million bushels) year over year to 253 MMT (9.31 billion bushels), 23 percent greater than the 5-year average of 206 MMT (7.56 billion bushels).



U.S. COMMERCIAL SALES

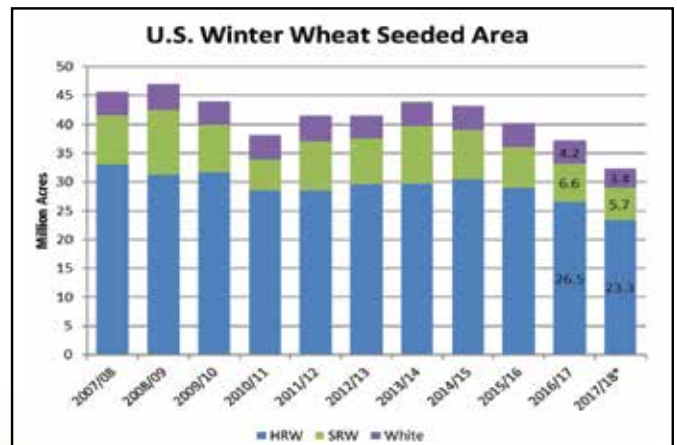
2016 ended on a high note for U.S. wheat exports, which posted the largest fourth quarter sales volume since 2010. From October through December, the United States sold 6.5 million metric tons (MMT) of wheat, 48 percent above last year's sales and 28 percent greater than the 5-year average. The strong pace pushed total marketing year 2016/17 U.S. wheat exports to 22.4 MMT through Jan. 19, 10 percent ahead of the 5-year average and greater than total 2015/16 sales of 20.7 MMT.



Hard red winter (HRW) and hard red spring (HRS) lead the charge. Year-to-date, 2016/17 HRW sales of 9.05 MMT are 28 percent ahead of the 5-year average and already greater than both 2015/16 and 2014/15 total sales. U.S. HRS sales are also 33 percent ahead of the 5-year average at 7.18 MMT and already greater than total 2015/16 sales of 6.91 MMT. The United States regained the largest single-country volume and value exporter title in a calendar year from Canada. According to USDA export sales data, U.S. CY 2016 wheat exports totaled 25.9 MMT, up 27 percent from CY 2015. White wheat sales are also ahead of both last year's pace and the 5-year average. USDA projects 2016/17 exports will rise to 26.5 MMT, which, if realized, would be 26 percent higher than 2015/16.

U.S. 2017/18 WINTER WHEAT SEEDING AREA

With full bins and prices near ten-year lows, it is no surprise that many U.S. farmers chose to plant fewer less winter wheat. USDA's 2017/18 winter wheat seeding report released Jan. 12 reported U.S. farmers planted 32.4 million acres (13.1 million hectares) of winter wheat with reductions for all three classes of winter wheat — HRW, SRW and white winter wheat. USDA noted that this is the second lowest number of winter wheat acres on record, 10 percent fewer acres than 2016/17.



USDA assessed HRW planted area at 23.3 million acres (9.43 million hectares), down 12 percent from 2016. Planted area in Kansas, the number one U.S. HRW-producing state at 7.40 million acres (3.00 million hectares), is down 13 percent from 2016 and 20 percent below the 5-year average. Nebraska farmers planted a new record low area to winter wheat of just 1.09 million acres (441,000 hectares), 25 percent below the 5-year average.

Total SRW planted area of 5.68 million acres (2.30 million hectares) fell 6 percent from 2016. Increases in Delaware, Georgia, Kentucky, Maryland, North Carolina and South Carolina were not enough to offset decreases in most of the other SRW-producing states, including a 16 percent decline in Ohio, the number one producer of U.S. SRW in 2016/17. USDA estimates Ohio farmers planted 490,000 acres (198,000 hectares) of SRW, 15 percent below the 5-year average.

White winter wheat planted area decreased to an estimated 3.37 million acres (1.36 million hectares),

down 4 percent from 2016/17. Exportable soft white wheat supplies are concentrated in Idaho, Oregon and Washington. Planted area in Idaho and Oregon fell 4 percent and 3 percent, respectively. Idaho farmers

reported planting 730,000 acres (295,000 hectares) compared to 760,000 acres (308,000 hectares) in 2015/16 and 2016/17. Planted area in Oregon dropped 20,000 acres (8,000 hectares) from 2016/17 to 700,000 acres (283,000 hectares), while planted area in Washington remained

stable year over year at 1.70 million acres (688,000 hectares).

Durum planting in the Southwestern United States is estimated at 140,000 acres (56,700 hectares), down 8 percent from 2016/17 and 38 percent below 2015/16. According to USDA, planting is well underway in Arizona at 22 percent complete, up 8 percentage points from the same date last year. Delays from wet conditions are slowing progress in California. Arizona and California plant durum from December through January for harvest in May through July. ■

White winter wheat planted area decreased to an estimated 3.37 million acres (1.36 million hectares), down 4 percent from 2016/17.



2016 Idaho Spring Wheat Variety Performance Tests and 2014-2016 Yield Summaries

Idaho 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 '2016 Idaho Spring Barley Variety Performance Tests and 2014-2016 Yield Summaries.' Agronomic performance data for spring wheat are summarized by state districts in Tables 1-4. 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 2014, 2015, and 2016 are presented in Table 5 for all districts, with 3-12 site/years of data summarized for each districts.



Table 1. Dryland Spring Wheat Performance in Northern Districts at Bonner Ferry, Craigmont, Genesee, and Moscow, 2016.

Variety	Yield				Four Site Average				
	Bonners				Test				
	Ferry	Craigmont	Genesee	Moscow	Yield	Weight	Height	Lodging	Protein
	bu/A				bu/A	lbs/bu	inches	%	%
Soft white									
Alturas	59	71	55	43	57	60.2	32	1	11.4
Babe	59	88	54	39	60	58.2	31	<1	11.4
Diva	93	83	77	61	79	60.8	34	22	11.4
JD*	89	84	78	63	78	62.5	34	9	12.2
Melba*	85	94	85	64	82	60.7	30	1	11.3
Ryan	90	92	75	61	80	60.3	31	1	11.5
Seahawk	106	101	90	74	93	62.6	33	1	11.7
SY Saltese	-	89	69	69	-	-	-	-	-
Tekoa	86	97	81	68	83	62.5	32	0	11.4
UI Stone	64	86	58	44	63	59.5	31	0	11.0
WB1035CL+	73	78	48	37	59	57.4	31	0	13.1
WB6121	84	88	80	64	79	61.8	30	1	12.8
WB6341	90	78	58	46	68	58.9	30	0	10.9
Average	82	87	70	56	73	60.4	32	3	11.7
LSD (0.05)	10	8	7	9	11	1.1	3	8	0.8
Hard red									
Alum	70	80	70	56	69	60.8	32	0	13.2
Glee	93	87	71	54	76	61.0	31	0	12.7
HRS 3419	81	79	69	59	72	59.8	31	0	12.4
HRS 3504	78	79	51	35	59	57.8	29	0	12.9
HRS 3530	43	76	45	33	47	57.9	34	0	12.4
HRS 3616	71	84	62	43	65	60.2	32	0	13.8
Jefferson	77	76	59	50	66	60.1	31	0	12.3
LCS Iron	91	93	90	61	83	61.0	31	0	12.5
LCS Luna	87	86	80	64	79	61.2	29	0	12.7
SY Coho	-	88	81	52	-	-	-	-	-
SY Selway	-	85	77	62	-	-	-	-	-
SY Steelhead	-	80	68	56	-	-	-	-	-
SY Teton	-	93	80	63	-	-	-	-	-
UI Winchester	76	85	64	50	69	60.4	30	0	12.4
WB9200	77	77	75	53	71	62.6	29	0	14.0
WB9411	81	88	77	63	77	61.4	28	0	13.1
WB9518	83	82	77	60	75	60.9	29	0	13.5
WB9668	73	82	75	55	71	61.9	27	0	14.3
WB9879CLP	65	76	55	40	59	58.5	31	0	13.4
Hard white									
Dayn	96	92	84	64	84	61.8	32	0	12.6
LCS Atomo	84	95	70	43	73	59.6	25	0	11.9
LCS Star	100	85	81	63	82	60.5	29	0	12.4
UI Platinum	89	89	76	54	77	61.5	28	0	11.8
WB-Hartline	80	85	72	61	75	59.3	31	0	12.4
Average	80	84	71	54	72	60.4	30	0	12.8
LSD (0.05)	7	7	4	6	10	1.1	2	-	0.7

*club wheat

Table 2. Irrigated Spring Wheat Performance in Southern District at Parma, 2016

Variety	Irrigated	Test	Grain	Heading
	Yield	Weight	Protein	Date
	bu/A	lb/bu	%	
Soft White				
Melba	130	73.2	11.0	6/1
Seahawk	132	75.4	11.9	2/27
SY Saltese	124	74.4	11.9	5/20
UI Stone	139	71.3	11.6	5/20
Tekoa	125	74.4	11.7	6/1
WB1035CL+	125	72.5	12.9	5/20
WB6121	132	75.3	13.2	5/27
WB6341	141	74.8	11.0	5/20
WB6430	138	74.6	11.8	5/27
Average	132	74	11.9	5/15
LSD (0.05)	13	2.0	0.8	
Hard Red				
LCS Luna	108	74.0	13.3	5/20
HRS 3419	101	70.6	14.3	5/20
HRS 3504	132	72.8	14.8	5/20
HRS 3616	104	74.0	13.7	5/27
HRS 3530	116	72.5	13.7	5/27
Jefferson	104	73.0	14.6	6/2
LCS Iron	107	72.6	14.6	5/31
SY Basalt	125	71.6	14.1	5/27
SY Coho	84	63.4	15.2	6/2
WB9200	97	74.3	14.5	5/20
WB9377	113	74.2	14.9	5/20
WB9411	136	73.7	14.1	5/20
WB9518	101	73.5	14.0	5/20
WB9668	115	72.4	14.4	5/20
Average	110	72.3	14.3	5/24
LSD (0.05)	29	6.2	1.1	
Hard White				
LCS Atomo	127	66.5	14.2	5/27
LCS Star	115	71.3	14.0	5/27
SY Teton	114	71.3	14.4	5/27
UI Platinum	143	73.9	15.4	5/20
WB7328	97	72.8	14.6	5/27
WB7589	117	69.9	13.9	5/20
Average	119	71	14.4	5/24
LSD (0.05)	32	2.4	1.0	

No Lodging at this location

Table 3. Irrigated and Dryland Soft White Spring Wheat Performance in Eastern Districts at Rupert, Aberdeen, Idaho Falls, Ashton, and Soda Springs, 2016.

Variety	Yield					Average				
	Irrigated		Dryland			Irrigate	Test	Plant	Lodging	Protein
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs					
	bu/A					bu/A	lb/bu	inches	%	%
Alturas	125	103	98	99	42	106	62	35	0	9
Babe	114	60	92	87	32	88	60	35	5	10
Diva	122	110	92	96	33	105	62	37	19	10
Louise	128	108	89	94	35	105	62	36	21	10
Melba	128	144	74	104	35	112	62	33	8	9
Seahawk	132	145	86	100	33	116	63	35	12	10
SY Saltese	127	132	101	-	-	120	62	36	18	10
UI Pettit	110	69	91	96	33	92	61	31	0	10
UI Stone	133	117	106	107	43	116	62	34	3	9
Tekoa	122	134	77	87	31	105	63	35	5	10
WB1035CL+	101	74	87	86	35	87	61	32	0	11
WB6121	119	151	84	84	34	110	63	32	0	11
WB6430	133	137	105	102	38	119	62	31	1	9
Average	124	117	91	96	35	107	62	34	6	10
LSD (0.05)	13	11	13	10	7	6	0	1	7	1

Table 4. Irrigated and Dryland Hard Spring Wheat Performance in Eastern Districts at Rupert, Aberdeen, Ashton, Idaho Falls and Soda Springs, 2016.

Variety	Yield					irrigated Yield	Test Weight	Average		
	Irrigated		Dryland		Plant Height			Lodging	Protein	
	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs					
Hard Red	bu/A					bu/A	lb/bu	inches	%	%
Alum	132	122	91	92	32	109	63	35	11	14
Bullseye	133	110	91	108	-	110	63	31	1	13
Cabernet	131	142	96	92	-	115	63	29	0	13
HRS 3419	129	130	80	86	-	106	61	34	0	12
HRS 3504	122	83	82	97	-	96	61	33	0	13
HRS 3530	99	65	82	83	-	82	61	37	1	14
HRS 3616	113	105	76	67	-	90	62	34	1	15
Jefferson	122	86	93	91	26	98	61	34	7	13
Kelse	105	103	78	90	23	94	62	36	0	15
LCS Iron	129	154	87	97	20	117	63	32	0	13
LCS Luna	130	130	80	89	19	107	62	30	1	13
SY Basalt	139	148	93	-	-	-	62	31	0	12
SY Coho	138	140	78	-	-	-	61	34	8	13
SY Selway	-	-	-	-	23	-	-	-	-	-
WB9200	128	145	92	78	17	111	64	31	0	15
WB9377	117	91	84	90	18	96	63	30	0	14
WB9411	132	140	98	84	17	114	63	30	0	14
WB9518	122	146	76	80	15	106	63	31	0	15
WB9668	120	146	85	82	17	108	64	29	0	15
Hard White										
Dayn	154	160	95	94	29	126	63	34	0	13
Klasic	107	80	95	84	22	91	62	25	0	13
LCS Atomo	119	115	80	91	19	101	62	26	0	12
LCS Star	140	152	89	91	23	118	62	32	1	13
Snow Crest	95	76	83	79	-	83	61	27	0	14
SY-Teton	140	135	90	-	-	-	61	32	2	12
UI Platinum	135	134	84	93	25	111	64	30	0	13
WB-Paloma	113	92	91	89	-	96	62	30	0	13
WB7328	120	117	101	79	21	104	63	28	0	14
WB7589	125	136	88	91	19	110	63	27	0	14
Durum										
Alzada	133	137	85	81	-	109	63	33	0	14
Average	125	121	88	88	22	107	62	31	1	13
LSD (0.05)	11	8	18	11	6	7	0	1	4	1

Table 5. Spring Wheat Yield Average for 2014-2016 in Idaho

Site/Years	District		
	Northern	Eastern	Eastern (Dryland)
	12	12	3
	Yield (bu/A)		
Soft white			
Alturas	52	113	52
Babe	59	104	43
Diva	63	-	-
JD*	62	-	-
Seahawk	70	119	53
Tekoa	67	110	46
UI Pettit	-	105	49
UI Stone	57	126	49
WB6121	65	-	-
WB6430	-	121	-
WB6341	62	-	-
Average	62	114	49
LSD (0.05)	3	4	9
Hard Red			
Alum	57	-	-
Bullseye	-	108	-
Cabernet	-	113	-
Glee	64	-	-
HRS 3419	59	108	-
Jefferson	58	107	43
Kelse	-	106	41
LCS Iron	64	117	-
SY Basalt	-	119	-
UI Winchester	57	-	-
WB9229	-	-	-
WB9411	-	115	43
WB9518	62	-	-
WB9668	-	113	40
Hard White			
Dayn	66	128	53
Klasic	-	100	31
LCS Atomo	65	109	33
LCS Star	65	117	43
Snow Crest	-	101	-
SY-Teton	-	126	52
UI Platinum	62	115	44
WB-Hartline	62	-	-
WB-Paloma	-	109	-
Durum			
Alzada	-	107	-
Average	62	112	43
LSD (0.05)	3	4	6

*club wheat





2016 Idaho Spring Barley Variety Performance Tests and 2014-2016 Yield Summaries

By Juliet Marshall, Extension Specialist Aberdeen, Kurt Schroeder, Extension Specialist Moscow, Olga Walsh, Extension Specialist Parma, 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 2016 spring barley tests are summarized by district in Tables 1-3. The state is divided into the Northern (Table 1), the Southern (Table 2) and the Eastern Districts (2-row barley in Table 3 and for 6-row barley in Table 4). 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 2014, 2015, and 2016 are presented in Table 5 for all districts. These data represent results of 12 site/years and can be a good indication of long-term performance of a variety.

Table 1. Dryland spring barley performance in Northern District at Bonners Ferry, Craigmont, Genesee, and Moscow

Variety	Yield				Yield	Test weight	Plant Height	Lodging	Plumps	Thins
	Bonnors Ferry	Craigmont	Genesee	Moscow						
Feed	bu/A									
Camas	143	116	104	85	112	53.9	32	5	96	1
Champion	140	126	109	84	115	53.3	34	26	95	1
Claymore	150	128	123	78	120	52.7	35	7	93	1
LCS Vespa	153	124	127	90	124	52.8	30	9	96	1
Lenetah	152	120	121	82	119	53.0	32	20	95	1
Lyon	129	124	106	88	112	52.4	31	21	94	1
Oreana	145	144	131	87	127	53.0	30	15	94	1
RWA-1758	142	115	117	91	116	53.0	32	5	95	1
Tetonia	151	120	111	91	118	53.0	33	17	93	1
Malt										
CDC-Copeland	132	109	93	92	107	52.9	34	43	95	1
LCS Genie	142	123	135	84	121	53.1	30	4	96	1
LCS Odyssey	150	131	141	85	127	52.2	30	10	96	1
LCS Westminster	146	123	120	85	118	53.5	32	7	97	1
Food										
Kardia	154	117	120	73	116	52.3	34	3	93	1
Salute	121	97	98	75	98	52.7	33	22	96	1
Transit	89	76	78	49	73	57.8	35	2	76	3
Average	140	118	115	82	114	53.2	32	13	94	1
LSD (0.05)	10	11	7	17	6	0.5	1	12	2	<1

Table 2. Irrigated spring barley performance in Southern District at Parma, 2016

Variety	Yield	Test Weight		Heading Date	Lodging
		bu/A	lb/bu		
Spring Feed Barley					
Champion	102	56.6	10.9	5/27	yes
Claymore	92	53.0	7.5	5/27	no
Kardia	112	53.6	11.4	6/1	yes
LCS Vespa	140	55.6	9.8	6/1	no
Oreana	137	59.0	9.7	6/1	no
Average	116	55.5	9.9		
LSD (0.05)	55	9.2	2.7		
Spring Malt Barley					
LCS Genie	144	60.0	9.6	6/1	no
LCS Odyssey	127	57.0	10.6	6/1	no
LCS Westminster	138	60.1	10.5	6/1	no
Average	124	56.9	10.0		
LSD (0.05)	17	2.0	0.7		

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 2016 trials; previous results can be found in the spring 1992 to 2015 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

Table 3. Irrigated Two-Row Spring Barley Performance in Eastern Districts at Rupert, Aberdeen, Idaho Falls, and Ashton, 2016.

Variety	Yield				Irrigated Average				
	Rupert	Aberdeen	Idaho Falls	Ashton	Yield	Test Weight	Plant Height	Lodging	Plumps
	bu/A				bu/A	lb/bu	inches	%	% > 6/64
Feed									
Altorado	157	182	117	139	149	54.7	30	8	94
Baronesse	152	162	131	127	143	54.1	29	10	96
CDC Fibar*	93	102	84	83	91	59.9	33	33	90
Champion	134	156	118	138	136	54.7	30	12	92
Claymore	164	139	131	131	141	52.6	32	20	91
Clearwater*	123	121	94	110	112	60.6	30	16	90
Harriman	163	159	124	125	143	53.5	30	4	97
Idagold II	157	155	112	121	136	53.7	28	4	95
Julie*	136	119	108	106	117	60.0	32	8	92
Kardia	150	145	131	124	138	52.1	31	10	92
Lenetah	151	149	125	131	139	54.4	32	12	96
Oreana	158	161	119	149	147	53.7	26	18	91
RWA 1758	151	145	112	133	136	54.2	29	8	95
Sawtooth*	137	103	94	108	111	59.7	32	5	84
Transit*	107	105	90	85	97	59.1	33	11	86
Vespa	156	171	121	136	146	53.9	27	4	97
Xena	150	151	136	138	144	54.0	31	16	96
Average	142	141	114	121	129	55.9	30	12	93
LSD (α = .05)	13	20	17	14	8	0.5	2	10	3
Malt									
ABI Balster	153	145	108	112	129	52.4	28	10	95
ABI Growler	150	128	115	107	125	52.5	29	10	95
ABI Voyager	157	143	134	120	139	53.0	31	13	97
AC Metcalfe	135	137	110	112	124	53.6	32	8	97
ACC Synergy	147	135	118	108	127	53.3	30	10	98
Bill Coors 100	161	162	110	124	139	53.1	26	1	98
CDC Copeland	153	144	109	115	130	52.7	32	11	96
CDC Meredith	145	125	104	117	123	52.0	31	18	94
Conrad	141	138	122	108	127	53.3	29	15	96
Harrington	125	132	109	110	119	53.6	31	32	92
Hockett	125	119	114	111	117	53.9	28	28	96
Idagold II	163	158	114	120	139	53.9	28	0	97
LCS Genie	153	160	117	132	140	53.5	26	3	95
LCS Odyssey	179	165	139	125	152	52.1	27	13	96
LCS Westminst	153	147	117	125	135	53.3	28	8	98
Merem	162	130	109	117	130	52.4	32	8	92
Moravian 169	161	164	102	113	135	54.7	26	2	99

Table 4. Irrigated Six-Row Spring Barley Performance in Eastern Districts at Rupert, Aberdeen, Ashton, and Idaho Falls, 2016.

Variety	Yield				Average						
	Rupert	Aberdeen	Idaho Falls	Ashton	Yield	Test Weight	Plant Height	Lodging	Plumps	Thins	Protein
	bu/A				bu/A	lb/bu	inches	%	(% > 6/64)	(% < 5.5/64)	%
Feed											
Goldeneye	146	161	124	113	136	51	35	2	83	5	11
Herald	147	149	111	109	129	51	33	8	93	3	11
Millennium	166	180	123	117	146	51	34	3	88	4	11
Malt											
Celebration	120	130	91	90	108	51	33	13	94	2	11
Lacey	133	145	106	98	120	53	34	5	95	1	11
Quest	110	117	97	100	106	52	34	26	91	3	11
Tradition	115	133	112	81	110	52	34	9	96	1	11
Average	138	151	113	107	126	52	34	10	93	2	11
LSD (0.05)	22	14	17	12	8	1	2	7	7	3	0

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

Table 5. Spring Barley Yield Average for 2014-2016 in Idaho

Site/Years	Northern	Eastern
2-Row Feed		12
Baronesse	-	129
Camas	95	-
Champion	98	141
Claymore	102	-
Harriman	-	138
Idagold II	-	131
LCS Vespa	99	148
Lenetah	99	138
Lyon	95	-
Oreana	101	-
RWA-1758	95	133
Tetonia	96	-
Xena	-	140
Average	98	123
LSD (α = .05)	4	5
2-Row Malt		
ABI Voyager		134
ABI Balster		132
LCS Genie	93	132
ABI Growler		129
Moravian 69		127
CDC Copeland	89	126
Conrad		126
Merem		124
CDC Meredith		121
AC Metcalfe		120
Hockett		118
Harrington		111
Average	91	126
LSD (0.05)	4	6
2-Row Food		
CDC Fibar*	-	91
Clearwater*	-	102
Julie*	-	115
Kardia	-	129
Salute	84	-
Sawtooth*	-	111
Transit*	61	97
Average	73	
LSD (0.05)	4	
6-Row Feed		
Goldeneye	-	136
Herald	-	130
Millennium	-	146

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/> 



UI STUDENTS BENEFIT FROM LIMAGRAIN PARTNERSHIP

University of Idaho graduate students Cole Senefsky and Drew Leggett embody the mission of the College of Agricultural and Life Sciences.

They work with agronomy professor Kurt Schroeder to understand how increasingly acidic soils and nitrogen fertilizer application rates affect wheat growers' yields. They are also the fortunate recipients of assistantships from a pioneering agreement between the college and Limagrain Cereal Seeds, a U.S. branch of one of the world's largest seed companies.

The college's agreement with Limagrain connects the university's decades of wheat breeding and agronomy research in the Pacific Northwest with the company's own extensive research staff and its marketing expertise.

Senefsky and Leggett's work with Schroeder is supplemented by stipends from Limagrain as part of the original agreement reached in 2012. The graduate assistantships support work that advances

wheat growers' ability to deal with an issue that has long-term implications.

The agreement is paying bigger dividends, too, that support the college's overall efforts.

Limagrain Cereal Seeds COO Frank Curtis announced in July that marketing efforts of UI-developed wheat varieties would return \$75,000 in royalties to the college in 2016. That total is expected to triple in 2017.

In 2015, Limagrain began marketing six UI-developed varieties. They include three new Clearfield Plus soft white winter wheat varieties developed through conventional plant breeding methods to include resistance to the herbicide imidazolinone.

Of those varieties, UI Magic CL+, UI Castle CL+, and UI Palouse CL+, Magic and Castle appear best positioned to take off in the marketplace. Curtis said he expects the 200,000 bushels of seed from UI varieties sold in fall 2016 to grow to 500,000 bushels in fall 2017.

The agreement connects the university's decades of wheat breeding and agronomy research with Limagrain's extensive research staff and marketing expertise.



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