





BY MATT MOSMAN PRESIDENT

Hello Idaho grain producers! My name is Matt Mosman and it's an honor to serve as your President for the 2019 year. I am a fourth generation dryland farmer on the northern end of the Camas Prairie. With my dad and brother, we raise wheat, barley, canola, bluegrass, and pulse crops. We also run a cow/calf cattle operation and aerial application business as well. As many of you know, it can be difficult working with family, but with enough irons in the fire we each stay busy throughout the year. When people ask how we split it up, I like to explain it this way; I'm the crop duster, little brother is the cowboy and we both help dad farm.

A few weeks ago I was getting ready for fertilizer season with the airplanes and felt fairly certain this was going to be an early spring. November through the first week of February had been a really mild winter for us in North Central Idaho. However, that was before winter showed up and decided to unleash its storms and record snow levels all over the state. The silver lining in all this is we have good snow cover for the fall crops and excellent moisture portfolio coming into spring. In the south I'm sure water will not be an issue this growing season as the mountain snowpack will keep reservoirs and aquifers abundantly full.

IGPA recently returned from our annual Washington D.C. trip where we took part in national wheat (NAWG) and barley (NBGA) organizations working on policy to best serve our growers all over the country. Since the 2018 Farm Bill passed in December, our hot topic item to discuss was trade. Our wheat delegation, thanks to Potlatch Joe Anderson, had a positive meeting with USDA Secretary of Agriculture Sonny Purdue. The group expressed how important trade is to us in the PNW and reaching trade agreements to potential partners in Asia is not just important to soft white wheat growers in Idaho, but all production ag growers across the country. We thanked him for help on the Market Facilitation Program, but reaffirmed we need markets, not handouts. We took this same message to our Congressional delegation as well. Thankfully, our voice doesn't fall on deaf ears over there. They all are aware of what we need but with the new leadership in congress it will be a tough row to hoe.

I was also very pleased to meet with with our new District 1
Congressional Representative, Russ Fulcher. He listened intently and asked many questions about how our operations worked and what problems were affecting current situations on our farms. I was also happy to see how closely he is working with our more experienced senators and congressmen to work together on providing Idaho Ag a voice at the national level. I know with this congress, which is full of new polarizing members, it will be tough for the minority party to get much accomplished, so in the words of former President Ronald Regan, "Don't let the bastards get you down."

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EDITOR'S NOTE



BY STACEY KATSEANES SATTERLEE **EXECUTIVE DIRECTOR**

To say winter around our office has been busy would be an understatement. I was fortunate to spend two weeks in February in our nation's capital with several IGPA members. The first week, I was in DC with barley growers for the winter meeting of the National Barley Growers Association. I had my eight-year-old daughter with me that week, too. We went on a Capitol tour and spent some time at Smithsonian museums – it was great to take some time to slow down and see things through her wonder-filled eyes.

The second week, we had wheat growers in DC for the winter meeting of the National Association of Wheat Growers

We met with all members of the Idaho delegation both weeks and discussed a broad range of issues. We talked about the Farm Bill and thanked them for supporting it (except newly-elected Rep. Fulcher), then shifted the focus to implementation. We also spent a substantial amount of time talking about international trade - from the need to pass the U.S. Mexico Canada Agreement, to the potential of a bilateral agreement with Japan, to tariffs and trade with China.



As we always do, we took young growers with us as part of our mentorship program – to NBGA, we took Kyle Wangemann and Nick Young. We took Andy and Terra Baldus and Calee and Whyatt Garn with us to NAWG. You can read more about their experience on pages 5-9. I love spending time

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with these growers – it's great to show them around DC, take them to Capitol Hill, have them interact with other members of the grain growing community from around the nation, and show them what IGPA is all about

This year, our wheat-growing mentorship program participants had the opportunity to meet with officials at USDA. Notably, we met with USDA Secretary Sonny Perdue – let me tell you, it was the highlight of the trip to meet the Secretary, who was genuine and kind and spent quality time asking questions of our mentorship program participants.

We also met with FSA Administrator Fordyce and the take away message from our meeting was so inspiring. He said, in short, that producers MUST tell their story. It is so critical, in fact, that he suggested that every producer should list advocacy as a line item in their budget, and either allot time or money (or both) to give to industry groups who are invested in doing that. From where he sits in DC, he sees the serious, real need to advocate and have a voice in policy discussions. It was a message that really stood out for those of us who were in the room

I hope that message resonates with you, too. If you're interested in seeing what IGPA does with our national affiliates in DC, you can learn more about our mentorship program at www.idahograin.org/ igpa-mentorship – or ask an IGPA board member or your wheat or barley commissioner for more information. And as we continue our membership drive, we hope you'll add your voice to the collective voice of Idaho's grain growers by joining IGPA – join today at www.idahograin.org/ membership.





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New Leaders Emerging for IGPA- Mentorship Program Participants Travel to D.C.

BY KELLIE KLUKSDAL, COMMUNICATIONS MANAGER, IGPA

Now in its 7th year, the IGPA mentorship program continues to thrive with new growers excited for the opportunity to learn and become the next leaders of IGPA. Sponsored by the Idaho Wheat Commission, the National Barley Growers Association, Bayer CropScience, and IGPA, this outstanding program helps foster leadership skills in new growers, train them for future leadership roles within IGPA and gives them the opportunity to see how their national grower organizations work on the federal level. It's also a chance to meet with the Idaho delegation and talk with our state leaders about issues affecting Idaho growers.

This year IGPA mentorship program participants included IGPA Board Member Kyle Wangemann and Nick Wood for National Barley Growers Association (NBGA) meetings, with Executive Board Member Lucas Spratling and IGPA Past Presidents Dwight Little and Scott Brown (Idaho Barley Commissioner) as mentors.

For the National Association of Wheat Growers (NAWG) meetings the following week, IGPA sent Calee and Whyatt Garn and Andy and Terra Baldus as mentorship program participants along with IGPA President Matt Mosman, Vice President Jamie Kress, and Past-President Potlatch Joe Anderson as mentors

IGPA Executive Board Member Lucas Spratling thought the meetings with the Idaho delegation were a highlight for the participants.

Lucas said, "I had the pleasure of attending the National Barley Growers winter board meeting in Washington D.C. a few weeks ago. The two mentorship program participants this year, Kyle Wangemann and Nick Wood, were great and received the full crash-course on barley, advocacy, ag policy, and Washington DC."

Lucas continued: "I think the most significant take away from this trip is that Kyle and Nick had the opportunity to speak directly to our legislators and be heard. One significant realization from being involved in IGPA is that if we do not get our voices heard the issues that affect farmers will only become worse. I want to thank Kyle and Nick for taking time out of their lives to come and advocate for Idaho farmers."

The group was able to meet with all members of Idaho's



NAWG Participants (L to R): Matt Mosman, Whyatt and Calee Garn, Terra and Andy Baldus, Jamie Kress, and Potlatch Joe Anderson

delegation including Sen. Risch, Sen. Crapo, Rep. Simpson and newly-elected Rep. Fulcher. They were able to thank them for voting for the Farm Bill and talked a lot about the importance of trade to Idaho's barley growers, in particular the passage of the USMCA and the damaging effect of steel and aluminum tariffs.

Potlatch Joe Anderson has been on the trip to D.C. several times and is a great resource for our mentorship program participants. He also thought the trip was well worth it and is happy to see that they are becoming involved.

"The mentor program is very valuable. Back when I was their age, there were people that got me involved and excited about what they were doing because I knew nothing. To get people excited and involved, they need to do more than just hear about it. Bringing them to D.C. gives them the exposure to what it is we do. Then it's up to them what they do with that," Joe says.

Many topics were discussed within the two-week time frame the two national groups met. The NBGA meetings included several items: trade (the replacement of NAFTA with USMCA agreement), Farm Bill implementation (including grower education when the opportunity to elect PLC or ARC comes up), transportation and infrastructure, pesticides regulations, and research.

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NBGA Participants (L to R): Kyle Wangemann, Nick Wood, Dwight Little, Scott Brown, and Lucas Spratling

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NAWG discussions revolved around the importance of keeping the government open, economic conditions in wheat country, the importance of a strong Farm Bill and its implementation, trade and regulations such as the WOTUS (Waters of the US) rule.

The wheat-growing group was also treated to a special event as well, meeting USDA Secretary of Agriculture Sonny Perdue. IGPA Executive Board Member Jamie Kress thought the meeting with Sec. Perdue was a true highlight for the mentorship program participants: "It was an honor to meet with Secretary Perdue during our IGPA trip to Washington DC. He is a strong advocate for America's farm and ranch families here in Washington. It was especially neat to watch his interaction with our young farmers and emerging leaders, the Garn's and Balduses. The Secretary is genuinely interested in our nation's farmers and demonstrates that by taking time to understand them and their various farming operations."

Scott Brown, IGPA Past President and current Idaho Barley Commissioner, has been to D.C. several times over the years and sees tremendous value in the mentorship program. "The IGPA mentorship program continues to provide a unique opportunity for young growers to experience firsthand the policy making process as it relates to our Federal ag policy. While in Washington D.C., these young producers experience the discussions and deliberations of barley and wheat producing state stakeholders and our related industry partners in the development of ag policy. They have the opportunity to meet with our congressional delegation, as well as individuals at Federal administrative agencies like FSA, NRCS and RMA. I believe that the program demonstrates the ever increasing need to be active in our industry and the importance of speaking up for our way of life, for our livelihood and for agriculture in general."

The mentorship program participants on the trip, Kaylee and Whyatt Garn from Arbon, Andy and Terra Baldus from Nezperce, Kyle Wangemann from Soda Springs, and Nick Wood from Grace, all had great things to say about their experience, what they learned and what they can take away. They also shared their appreciation to IGPA for helping them on the trip and understanding what the organization does for growers in Idaho.

CALEE and WHYATT GARN

Name of your farming operation? Garn Farms

Where are you located? Arbon, ID

Family? Married in June 2018 and no kids yet.

What do you grow? How do you get it to market? We grow wheat, safflower, and some specialty crops.

Biggest challenges you face on your farm? Changes in Price; environmental conditions

Challenges you see for the grain industry in the Idaho and across the nation? Consumer Preferences and domestic and international trade.

What issues are most important to YOU? The agricultural industry at large is dying. Larger operations are being replaced by "hobby farmers" which are flooding the market and providing too many choices for consumers. While choices aren't bad, marketing strategies are convincing consumers some options are "healthier" or more environmentally friendly" than other options, which leaves conventional agricultural practices at an artificial disadvantage.

Why did you want to get involved in the IGPA mentorship program? We wanted to be a part of an organization that was united in voice for the preservation and advancement of our industry that will sustain our operation into the future.

What do you hope to gain from this experience in **D.C.?** A better understanding of the process that creates legislative oversight of our industry, and to gain a better understanding of what we can do on a local level to enhance and improve our industry.

What was your favorite part of your trip to D.C.? Whyatt: Meeting the Secretary of Agriculture was a very valuable experience because it showed me his concern for the wheat industry.

Calee: I appreciated meeting with the policy and

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decision makers for the nation. Secretary Perdue and our legislators were very interested in the issues we needed to discuss and provided excellent feedback regarding their next steps and what we can realistically expect in the coming months.

What are your hopes for the future of the grain industry? We hope that our national leadership can secure foreign markets and increase opportunity for moving grain.

ANDY and TERRA BALDUS

Name of your farming operation? B4 Sunrise Farms LLC

Where are you located? Nezperce, ID

Family? Married, 3 wonderful daughters, ages 3,5 and 7

What do you grow? How do you get it to market? Soft White Wheat, Blue Grass, Green Peas, Lentils, Garbanzo Beans, Canola, Malt Barley, DNS Wheat. We sell to elevators and they ship most of our commodities by barge from the Port of Wilma to the Coast. The rest goes by rail or truck.

Biggest challenges you face on your farm? Competing in a world market, competing with giant corporation-owned farms for acres and seeing small town business suffer due to big farms circumventing their services, battling with ever restrictive regulations making it harder to effectively manage our weed populations, farm safety culture is not as prevalent as it should be, and potty training (the struggle is real).



Meeting with Sen. Risch and Rep. Fulcher

Challenges you see for the grain industry in the Idaho and across the nation? Keeping and not losing foreign trade partners. The majority of our products are exported to foreign countries. If we lose our foreign trade partners, it will be hard to get them back.

What issues are most important to YOU? Trade, regulation, the slow death of small towns.

Why did you want to get involved in the IGPA mentorship program? I wanted to learn more about the industry in which I work.

What do you hope to gain from this experience in **D.C.?** I hope to gain a better understating of how IGPA helps shape a better world for our farmers.

What was your favorite part of your trip to D.C.? I most enjoyed visiting with USDA Secretary Sonny Perdue about how much foreign trade means to me and my fellow wheat producers. He seemed very receptive and genuine about his concern for Idaho farmers. It is an experience I am not likely to forget!

What are your hopes for the future of the grain industry? I hope that we can all work together to promote our products and tell our stories. I believe both are valuable and useful resources that need to be shared.

KYLF WANGEMANN

Name of your farming operation? Clodhopper Farms

Where are you located? Soda Springs, Idaho

Family? Married, 3 boys

What do you grow? Malt/Feed/Food Barley, Winter Wheat, Mustard

Biggest challenges you face on your farm? Dryland Farm - WATER!

Challenges you see for the grain industry in Idaho and across the nation? Trade. We need good trade agreements in foreign markets to be able to market our commodities. Prices. With commodity prices low and input costs high the profit margin to better things on the farm are tight right now.

What issues are most important to YOU? Sustainability of the farm through accessible markets with good commodity prices. If we take care of the consumer, the consumer will take care of us to provide good products!

Why did you want to get involved in the IGPA

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mentorship program? The answer lies in the question... to get involved. Hopefully make a difference.

What did you gain from your experience in D.C.? That people understand our problems and know the things that need to happen. It's going to take some patience to get there but in the end it will work out.

What was your favorite part of your trip to D.C.?
Being on Capitol Hill to meet with Representatives and Senators from our state that can help us in our cause.

What are your hopes for the future of the grain industry? Better prices, free trade agreements for better markets and the sustainability of agriculture all over the world. NO FARMS, NO FOOD!

NICK WOOD

Name of your farming operation? P&L Farms

Where are you located? Grace, Idaho

Family? Married to the beautiful Jess Yost, we have three kids, daughter Riley 11, son Dylan 9, and daughter Kira 6.

What do you grow? How do you get it to market? We raise primarily malt barley, but also wheat, feed barley, alfalfa, and cattle. Everything we raise gets to market on trucks, we also run a few trucks hauling our own commodities as well as custom hauling in the area.

Biggest challenges you face on your farm? They all seem big. Big challenge in just getting everything done honestly, but also the economics of everything and juggling things to make it all work...

Challenges you see for the grain industry in the Idaho and across the nation? Unfortunately, it seems like it takes a disaster somewhere else in the world for it to be good here. In regard to trade and global market share, I think there are going to be real challenges coming. There is a lot of rising competition in the world!

What issues are most important to YOU? Legislation that effects ag producers as well as trade deals and tariffs that effect our global markets and trade ability. There are always the localized issues such as water usage and water rights that continue to impact agriculture everywhere, especially in Southern Idaho.

Why did you want to get involved in the IGPA mentorship program? IGPA is the grain producers voice where it is needed. As a grain producer I feel it is



(L to R): Andy Baldus, Stacey Satterlee, Potlatch Joe Anderson, Secretary Perdue, Jamie Kress, Whyatt and Calee Garn. *Photo credit: USDA Photo by Lance Cheung*

important to be proactive and well informed on issues and trends that effect our business and what we do as growers.

What did you gain from your experience in D.C.?

Having never been to D.C. and honestly unaware of the role of IGPA as well as NBGA; it was an eye opener for sure. I definitely have a better perspective on the role of the organization as it pertains to advocacy and future policy as well.

What was your favorite part of your trip to D.C.?

Again, having never visited D.C. prior it was an eye opener for sure and very interesting to see how our government works somewhat on a day to day basis and the dynamic it has with the people and the culture it creates in the area. I enjoyed the history and seeing the monuments and buildings as well.

What are your hopes for the future of the grain industry? Ultimately I just hope to see grain prices align better with crop production costs, equipment costs, etc. soon! So as to create profitability and sustainability for grain producers here in Idaho where we grow some of the best quality wheat and barley in the world!

IGPA is proud to be part of this incredible program. It's encouraging to see so many new faces interested in the politics and high-level work that goes on to help our growers on the state level. Fresh ideas, new ways of doing things and strong goals are the things IGPA needs in the future leaders of this great organization. If you're interested in learning more and possibly becoming a mentorship program participant, visit our website at https://www.idahograin.org/igpa-mentorship/.



LEGISLATOR PROFILE



Rick Youngblood

NAMPA, ID • DISTRICT 12



BY JEANNE VALK, IGPA INTERN

Representative Rick Youngblood is a native Idahoan. He attended Weiser High School where he met his wife, Arlene, and the two have now been married for 46 years. The proud parents of two children and five grandchildren, Rep. Youngblood calls his son his hero, an Air Force MSgt/Combat Controller completing 19 years

of service with 13 tours and has three bronze stars with valor to his name. Clearly this is a family full of heart.

His educational path took him to North Idaho College and College of Idaho, along with graduating from NW Ag Credit School-Washington State University and Pacific Coast Banking School-University of Washington.

Prior to his career in politics, Rep. Youngblood worked in banking for 25 years and 10 years in the private sector serving as the president of an engineered wood products and commercial development company.

Rep. Youngblood began his career in the Idaho State Legislature in 2012 serving District 12 in Seat B. When touching on his career in politics, he stated that he, "had no clue what he was getting himself into," and couldn't even tell you how many people were in the House or the Senate. He first got into politics through team roping, when a friend told him that they needed a banker as a commissioner for the highway district. He then beat a 22-year incumbent at Canyon Highway District #4 where he still serves as Chairman.

He says he regards politics as one of the highest levels of giving back to your community and enjoys the process where you get to see everything going on in the state.

He was appointed to the Transportation Committee and, as a freshman in the House, was also appointed to the Joint Finance and Appropriations Committee the largest committee in the legislature. He continues to

serve on the Joint Finance and Appropriations Committee and today is the Co-Chair, he also serves on Transportation & Defense Committee. He says that he never thought he would be a chairman of JFAC and that it was an honor to work with Rep. Maxine Bell, former House Chair of JFAC who retired last year after 18 years as prior Co-Chair of JFAC and 30 years in the legislature.

When asked what life advice he would give to someone looking to enter the business world, he said, "start thinking early about what you want to do." He advised to get in the mindset of working a career

before you enter the workforce.



He says what he loves most about Idaho is that it's one of the last states that is classified as a western community and a western way of life. He appreciates Idaho and everything that the state has to offer and cherishes the morals that he grew up with. He understands the value of keeping Idaho the way it is. As people move to Idaho, the values of Idaho can shift and that is something he would like to protect against. His goal is to "keep Idaho the way it has always been."

LEGISLATOR PROFILE





Steve Bair

BLACKFOOT, ID • DISTRICT 31



BY JEANNE VALK, IGPA INTERN

Born and raised in small town Blackfoot, Idaho, Senator Steve Bair's entire life has revolved around his family farm. He and his family farm around 3000 acres of alfalfa, wheat and potatoes. He attended Snake River High School in Blackfoot, served an LDS mission in Switzerland and Germany, and earned his degree in Farm Crops Management at Ricks College, now known as Brigham Young University-Idaho and never, ever considered a life in politics.

In addition to his many responsibilities as a State Senator, Senator Bair finds time to indulge his adventurous spirit. He is passionate about Idaho's many recreational opportunities and takes advantage of any chance he has to explore our state, preferably on a motorbike, four-wheeler, snowmobile or any kind of off-roading.

Sen. Bair and his wife, Lori Kae, have five children together, and are now grandparents to 15 grandkids. Two of his daughters are teachers, the other is a nurse. One of his sons is a farm manager in Idaho Falls, the other works as a tractor manufacturing company.

Sen. Bair got involved in politics when a friend and former Senator "twisted his arm hard enough" and he ran for the district 28 Senate seat, now District 31. He stated that running for state office was not something he particularly aspired to do, however, he is happy to serve his community. Senator Bair said that the keys to being a successful legislator are "hard work, honesty and integrity."

He has served on many committees throughout his



years in the legislature, but says that the Agricultural Committee, where he served as Chairman for four years, was most certainly his favorite. His lifelong involvement in farming gave him a unique understanding of the issues and policies that affect agriculture so serving as Chairman was a perfect fit for his leadership skills.

In addition to the Agriculture Committee, Senator Bair also served two years on the Health and Welfare Committee, on the Transportation Committee and Chaired the Resources and Environment Committee for many years. He has served on Joint Finance Appropriations Committee (JFAC) for most of his time as a senator and this session he is serving as the committee's co-chair.

In addition to his many responsibilities as a State Senator, Senator Bair finds time to indulge his adventurous spirit. He is passionate about Idaho's many recreational opportunities and takes advantage of any chance he has to explore our state, preferably on a motorbike, four-wheeler, snowmobile or any kind of off-roading. He also loves fishing on the Snake River and has his pilot's license which takes him all over our beautiful state.

igpa issues



Idaho Department of Fish and Game: Update about Big Game Depredation Compensation Program

BY SAL PALAZZOLO, PRIVATE LANDS PROGRAM COORDINATOR, IDFG

It has been two years since the legislature passed House Bill 230 and Senate Bill 1118, which provided additional funding and tools to address big game depredation across the state.

Fish and Game was asked to provide an update as to where we are regarding the depredation compensation account. Before touching on this year, I thought it might be valuable to look at where we were.

Recent compensation claim payments:

FY17 - July 1, 2016 to June 30, 2017 (also known as "snowpocalypse")

• 54 claims for a payment of \$339,504

FY18 - July 1, 2017 to June 30, 2018

• 54 claims for a total of \$1,046,736

While it appears that the year after the snow was worse, this was not the case. The Department used the flexibility allowed within H.B. 230 to defer certain FY17 claims for payment in FY18 to ensure that all eligible claims were paid in full.

As of January 2019, sale of hunting and fishing licenses have been robust. This has allowed for the full contribution to the account. Per HB 230, Fish and Game deposited the first \$500,000 of depredation/access fees in July, 2018 into the Expendable Depredation Account for funding compensation claims (in addition to the existing



statutory transfer of \$200,000 license funds and interest from the nonexpendable account).

Due to relatively mild weather and low snowpack, we have only received 18 eligible claims for FY19, through the end of January. Those landowners have received the first half of their payments as outlined in Idaho Code 36-1110. We don't know what claims are yet to come. Staff is working hard to assist landowners with questions and provide guidance on claim-related questions as we get closer to spring as well as provide continued effort and assistance to prevent wildlife depredation damage.

*Hunters, anglers and trappers provide the funding used to compensate landowners for crop and livestock loss due to wildlife through the Access/Depredation fee, (\$5 for residents, \$10 for nonresidents) which became law in 2017.

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After Years of Dispute, Finally a Water Resolution

BY PAUL L. ARRINGTON, EXECUTIVE DIRECTOR & GENERAL COUNSEL, IDAHO WATER USERS ASSOCIATION

The first bill of Idaho's 65th Legislature was a water bill. House Bill 1, which passed Idaho's House and Senate unanimously, implements the final piece of comprehensive settlement agreement between water users, the State of Idaho and other stakeholders on the Boise River. After nearly a decade of litigation, the parties came together in 2018 and resolved a long-running dispute regarding water stored in reservoirs during high water years.

The crux of the dispute involved the ability to "refill" space in a reservoir after water has been released for flood control operations. During high water years, water stored and released from the Boise River reservoirs is managed to minimize flood risks and protect public health and safety in the Treasure Valley. This practice is often referred to as "flood control operations."

The Idaho Department of Water Resources (IDWR) developed an accounting program to track water rights in the Boise river system. This accounting system tracks water flowing through the Boise River. Any water entering a reservoir while the associated water rights are in priority is counted against the "fill" or satisfaction of that reservoir's water rights. This is the case, even when the stored water is released for flood control operations and is not available for the ultimate use authorized by the water rights (i.e. irrigation). Water users argued that the space vacated for flood control must be allowed to refill in the same priority as the original fill. The State, on the other hand, asserted that any refill may occur only after junior priority water rights have been satisfied.

The dispute continued for nearly a decade and included multiple trips to the Supreme Court, three district court opinions, an administrative hearing and a lot of headaches.

Finally, several of Idaho's legislative leaders – including Speaker Scott Bedke and Representative Mike Moyle – pulled the parties together and facilitated very difficult discussions which ultimately led to a settlement agreement.

The settlement agreement accomplished two primary goals. First, the parties agreed to the continued use of IDWR's accounting program. Second, the parties agreed to the issuance of two new water rights for the fill the reservoirs after flood control operations.



One of those two water rights includes a condition that certain refill will be subordinated (i.e. it will be treated as junior in priority) to all current and future uses on the Boise River with the exception of four carveouts. Three of these carveouts are supported by existing Idaho law. The carveouts include new water rights for managed recharge (I.C. 42-234), hydropower (I.C. 42-203B), out of basin diversions (I.C. 42-203A) and storage over 1,000 af (acre feet).

House Bill 1 provides statutory authority for the fourth carveout (new storage over 1,000 af). The threshold of 1,000 af was a negotiated number that the parties incorporated into the agreement to allow new, small storage uses to occur. The parties will now work together to finalize the settlement in the Snake River Basin Adjudication Court.

"The Boise Project and Districts are pleased to have reached a settlement with the State and IDWR on this contentious issue," remarked Richard Durrant, Chairman of the Boise Project Board of Control. "This agreement will put to rest an issue that has kept us apart for many years. We appreciate the efforts of the Director and the Attorney General to help the water users and the State arrive at an outcome that protects the interests of all the parties. This agreement, including the new water rights, will further protect the ability of the water users to rely on the reservoirs to fill in flood years. They will also protect the storage water that is used to provide winter flows in the Boise River for the benefit of all the residents of this Valley. Reaching this Agreement now allows the State and water users to focus on further developing the reservoir system to provide additional flood control and water for future uses."



Herbicide Resistant Weeds Shading Northwest Cereals Future

BY DOUG FINKELNBURG, AREA EXTENSION EDUCATOR, CROPPING SYSTEMS, UNIVERSITY OF IDAHO



Folks, we have a problem with herbicide resistant weeds. This isn't new. We have seen herbicide resistance since shortly after the first herbicide was released, but it is getting worse and our options for mitigating the problem are increasingly limited. Forward-looking people from across the cereal production system, from producers, to seasoned field men, to university weed scientists, are

increasingly concerned. And you should be too.

For decades we have had the luxury of switching to a new chemistry when resistance to the one we were using developed. This strategy works, if new chemistries keep coming, but here's the thing – new herbicides aren't coming to wheat, or at least not at the pace we've gotten used to. Dr. Ian Burke, Weed Scientist at Washington State University (WSU), explains this more fully in his article titled, "The future of herbicides in wheat is bleak"

We need only to look to Australia's wheat production systems for the cautionary tale of how bad herbicide resistance can get. When annual ryegrass (a close cousin to our Italian ryegrass) developed resistance to grass herbicides, a fall or spring burndown with glyphosate became the common solution. When annual rye populations developed glyphosate resistance as well, Australian wheat farmers had to get creative.

Less profitable crop rotations that allowed for better weed control followed. Growers invested in combine add-ons that create chaff rows for baling or burning, sacrificing nutrients and organic matter as a result. Others have invested in mills, either pulled behind or integrated into combines, that pulverize weedy chaff as they harvest. These solutions often decreased profitability. A Harrington Seed Destructor weed seed mill will run you around \$125K. Bayer estimates herbicide-resistant weeds are increasing costs in Australia by 27% per acre due to increased management costs and yield losses.



Downy Brome populations have shown resistance to many group 1 and increasingly to group 2 herbicides.

Fortunately, we have not seen glyphosate resistant ryegrass in PNW cereal crops. . .yet. Glyphosate resistant Italian ryegrass has been found in Oregon orchards, however, so I suspect it is only a matter of time before it shows up in Idaho fields as well.

What is to be done? The good news is we have well-established, proven methods for mitigating the development of herbicide-resistant weeds. It's called Integrated Pest Management (IPM) and has been the gospel preached by many a University Extension person over the years. Rotating and combining herbicide modes of action, rotating crops to change the timings



Italian rye has shown resistance to group 1, 2, 9, & 10 herbicides.



and types of weed control, cleaning equipment before it leaves a field, and planting certified seed are some cornerstones of this approach.

The bad news is we've done a poor job of convincing producers to adopt these practices, likely since each principal of IPM can be, frankly, a pain in the neck. Economic necessity often trumps an ideal crop rotation. Certified seed has a cost that some find prohibitive and properly cleaning equipment raises labor expenses. However, the result of ignoring IPM principles is what we see around us. An increasingly difficult and expensive problem that threatens to undermine long-term profitability.

It is time to quit making excuses and take this problem seriously while we have time to get ahead of it. It may be an overused phrase, but we need to raise awareness. We do this by working across the grain industry, engaging producer organizations, retailers, co-ops and university researchers and educators to provide relevant, practical strategies for herbicideresistance mitigation. We need to be careful with the

Rotating and combining herbicide modes of action, rotating crops to change the timings and types of weed control, cleaning equipment before it leaves a field, and planting certified seed are some cornerstones of this approach.

chemistries we have that still work and ensure they keep working by not overusing and abusing them. We need to recognize that this issue isn't limited to producers ignoring IPM principles. An un-tarped grain truck or a contaminated combine can spread weed seed far and wide as they roll down the county road. If any of that seed happens to be herbicide-resistant your neighbors' problems can become your problems all too quickly.

2018 Idaho Spring Wheat Variety Performance Tests and 2016-2018 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 '2018 Idaho Spring Barley Variety Performance Tests and 2016-2018 Yield Summaries.' Agronomic performance data for spring wheat are summarized by state districts in Tables 1-5. 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

Continued on next page

TABLE 1. DRYLAND SPRING WHEAT PERFORMANCE IN NORTHERN DISTRICT AT BONNERS FERRY, CRAIGMONT, GENESEE, AND MOSCOW, 2018.

		Yi	eld			Fou	r Site Av	erage	
Variety	Bonners Ferry	Craigmont			Yield	Test Weight	Height	Lodging	Protein
Soft white		bu	/A		bu/A	lbs/bu	inches	%	%
Alturas	25	50	64	44	44	57.3	30	8	8.8
Babe	32	48	82	55	54	58.0	33	1	8.3
Diva	42	45	84	72	61	58.3	35	1	8.4
JD*	30	48	79	64	55	60.1	35	3	8.6
Melba*	32	45	77	64	54	59.1	30	1	8.3
Ryan	40	60	89	79	67	57.9	32	0	8.1
Seahawk	41	50	85	75	63	58.7	33	0	8.4
SY Saltese		41	71	50			_		
Tekoa	43	57	95	77	66	59.6	32	0	8.1
UI Stone	39	47	66	57	52	57.2	32	3	8.3
WB-1035CL+	36	48	68	53	51	58.0	32	0	9.8
WB-6121	37	50	81	73	59	59.2	30	0	9.8
WB-6341	45	51	78	65	60	57.5	31	0	8.1
	37	49	78	64	57	58.2	32	1	8.6
Average			7		5		1		
LSD (0.05) Hard red	4	8	/	6	3	0.8	1	1	0.4
Alum	37	53	62	65	54	57.8	33	0	11.3
Glee	34	60	65	73	58	58.4	33	0	10.9
Jefferson	33	54	70	67	56	58.4	32	0	11.1
LCS Iron	27	51	67	64	52	55.9	30	1	11.1
LCS Luna	28	54	66	69	54	57.7	28	0	11.4
NS Presser CLP	39	57	70	48	54	54.8	34	0	11.3
SY Coho		52	57	62					
SY Gunsight		45	65	63					
SY Renegade		51	77	72					
SY Selway		52	72	72					
UI Winchester	28	48	62	58	49	57.4	30	2	11.4
WB9350	24	55	76	65	55	56.7	23	1	11.6
WB9518	24	48	66	55	48	56.8	28	4	12.4
WB9662	15	47	62	44	42	56.5	28	16	12.9
WB9668	23	49	72	65	51	59.0	28	0	12.8
WB9717	25	50	65	60	50	59.5	28	16	11.2
Hard white	23	50	0.5	00	50	33.3	20	10	11.2
Dayn	34	47	62	69	53	57.6	31	1	10.8
UI Platinum	28	52	72	77	57	58.9	28	0	10.8
WB7202CLP	30	61	70	79	60	58.5	27	0	10.7
		57	73	73			32		
WB-Hartline	35				60	56.7		0	10.8
Average	30	52	68	66	54	57.5	30	3	11.4
LSD (0.05)	3	8	6	7	5	1.1	1	2	0.5

*club wheat

TABLE 2. IRRIGATED SPRING WHEAT PERFORMANCE IN SOUTHERN DISTRICT AT PARMA, 2018.

IN SUUTHERN DISTRICT AT PARMA, 2018.											
Variety	Yield	Test weight	Protein	Plant Height							
Soft White	bu/A	lb/bu	%	inches							
Tekoa	120	64.2	9.3	36							
14-SSW-1059	119	60.5	8.1	33							
14-FAC-2043	118	61.0	8.2	34							
IDO1401S	114	62.6	9.3	32							
Melba	114	62.0	8.8	33							
SY Saltese	113	63.9	8.5	34							
UI Stone	111	62.2	8.8	35							
IDO1405S	111	61.0	9.4	32							
WB6341	111	62.6	8.9	31							
Seahawk	111	62.5	8.5	32							
IDO1403S	108	61.8	9.0	32							
Ryan	108	54.1	8.9	34							
WA 8297 CL+	104	62.4	9.3	33							
WB6430	104	61.7	9.3	31							
WA 8303 CL+	103			31							
WA 8303 CL+ WB6121		63.3	9.6	31							
	103		9.2								
WB-1035CL+	99	62.8	9.7	32							
Average	110	61.9	9.0	33							
LSD (0.05)	16	5.3	1.2								
Hard Red											
Alum	98	65.5	10.3	34							
LCS Iron	97	63.9	11.2	32							
WB9578	95	64.8	11.2	30							
SY Gunsight	95	64.4	10.6	31							
WB9411	92	64.2	10.6	30							
12SB0197	91	64.1	10.3	31							
06PN3017-09	91	65.0	10.6	30							
SY Coho	90	63.9	10.3	31							
LCS Luna	90	64.7	10.4	30							
WB9433	87	65.0	11.2	31							
Jefferson	86	64.7	10.5	34							
WB9668	85	64.8	10.7	31							
Average	92	64.6	10.6	31							
LSD (0.05)	11	1.6	1.6								
Hard White											
WA 828	95	64.6	10.8	31							
IDO1604S	95	64.9	11.2	32							
Glee	94	64.3	10.0	35							
UI Platinum	93	63.7	10.6	30							
Dayn	92	64.2	10.9	33							
12SB0224	91	64.2	10.6	32							
IDO1602S	91	64.5	11.1	35							
WB7328	88	65.0	10.8	30							
IDO1603S	88	65.0	11.8	31							
WB7589	78	64.0	11.4	29							
Average	90	64.4	10.9	32							
LSD (0.05)	13	1.0	1.4								
No Lodging at th											

No Lodging at this location

Stripe rust present in all plots, with no significant damage.



TABLE 3. DRYLAND SPRING WHEAT PERFORMANCE IN SOUTHERN DISTRICT AT WEISER, 2018.

IN SOUTHERN	DISTRICT A	T WEISER,	2018.
Variety	Yield	Test weight	Plant Height
Soft White	bu/A	lb/bu	inches
WB6341	40	60.9	29
Ryan	36	60.6	31
UI Stone	34	59.4	34
WB6430	33	62.8	29
WB-1035CL+	32	58.9	30
SY Saltese	32	61.5	31
Tekoa	31	62.9	32
Melba	30	58.1	30
WB6121	27	53.9	39
Seahawk	26	62.6	31
Average	32	60.1	32
LSD (0.05)	8	6.8	
Hard Red			
WB9411	28	63.2	27
WB9668	28	61.3	30
WB9590	27	60.7	27
LCS Iron	27	57.6	29
SY Coho	27	60.2	29
Jefferson	26	61.3	30
SY Gunsight	26	59.1	27
LCS Luna	26	58.5	29
WB9578	25	57.0	29
WB9433	25	59.2	29
Alum	23	57.5	27
Average	26	59.6	28
LSD (0.05)	4	4.3	
Hard White			
UI Platinum	30	62.1	28
WB7202CLP	29	61.5	29
WB7589	28	59.6	28
WB7328	27	57.5	28
Glee	27	61.5	28
Dayn	26	58.1	27
Average	28	60.0	28
LSD (0.05)	5	3.8	

No Lodging at this location

Significant grasshoper damage in all plots, estimated at 40% loss.

TABLE 4. IRRIGATED AND DRYLAND SOFT WHITE SPRING WHEAT PERFORMANCE IN EASTERN DISTRICTS AT RUPERT, ABERDEEN, IDAHO FALLS, ASHTON, AND SODA SPRINGS, 2018.

			Yield -								
		Irriga	ted		Dryland		Average				
Variety	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs	Irrigate Yield	Test Weight	Plant Height	Lodging	Protein	
	bu/A						lb/bu	inches	%	%	
Alturas	115	132	144	115	61	126	61.2	35	0	10.4	
Louise	124	133	119	93	58	117	60.7	39	10	11.2	
Melba*	108	143	136	102	66	122	61.3	35	0	10.6	
Ryan	133	145	148	103	50	132	61.2	35	0	11.0	
Seahawk	137	145	127	103	56	128	61.7	37	0	11.1	
SY Saltese	122	141	141	99	62	126	62.2	36	0	10.9	
Tekoa	125	137	129	98	74	122	61.1	36	0	10.3	
UI Pettit	118	126	131	88	55	116	61.0	34	0	10.6	
UI Stone	125	153	137	90	60	126	61.1	36	0	10.7	
WB-1035CL+	101	122	115	93	51	108	61.7	33	0	12.0	
WB6121	117	131	117	90	54	114	62.2	32	0	11.5	
WB6341	118	138	136	101	60	123	61.6	34	0	9.8	
WB6430	126	154	136	102	58	129	61.5	32	0	10.6	
Average	123	138	132	99	58	123	61.2	35	1	10.8	
LSD (0.05)	21	15	12	20	10	9	0.7	2	5	0.7	

TABLE 5. IRRIGATED AND DRYLAND HARD SPRING WHEAT PERFORMANCE IN EASTERN DISTRICTS AT RUPERT, ABERDEEN, ASHTON, IDAHO FALLS AND SODA SPRINGS, 2018.

						_				
	_	Irriga	ted —		Dryland			- Average	e ———	
Variety	Rupert	Aberdeen	Idaho Falls	Ashton	Soda Springs	Irrigated Yield	Test Weight	Plant Height	Lodging	Protein
Hard Red			– bu/A			bu/A	lb/bu	inches	%	%
Alum	122	127	130	112	49	123	62.8	37	0	14.1
Cabernet	117	123	118	95	_	113	62.9	29	0	13.5
Choteau	_	_	_	_	41		_		-	_
DuClair	_	_	_	_	56		_		-	_
Glee	115	127	123	95	52	115	62.6	34	0	13.6
Jefferson	122	135	128	100	48	121	62.3	35	0	13.2
LCS Iron	127	137	120	110	56	124	61.9	34	0	13.0
LCS Luna	119	122	121	104	47	117	61.8	30	0	12.8
NS Presser CLP	_	_	_	104	55	104	60.5	37	0	14.1
SY Coho	126	137	119	114	-	124	60.8	32	0	13.9
SY Gunsight	120	126	114	105	-	116	61.4	31	0	13.3
SY Renegade	_	139	126	115	-	127	62.3	35	0	13.3
SY Selway	_	-	-	_	44		_		-	_
WB9411	114	125	118	100	52	114	62.4	31	0	14.3
WB9433	118	113	107	92	46	108	60.9	26	0	13.3
WB9578	115	131	117	92	38	114	62.8	29	0	14.1
WB9590	125	129	114	110	43	120	62.4	30	0	14.8
WB9668	104	125	110	92	43	108	63.1	28	0	15.4
Hard White										
Dayn (W)	144	142	140	118	60	136	63.1	34	0	13.1
Klasic (W)	118	124	132	104	40	120	63.1	26	0	13.0
Klasic (W) Incr sea	125	121	131	100	44	119	63.3	26	0	13.0
Klasic (W) Incr sea	132	129	130	113	42	126	63.2	27	0	13.5
SY-Teton (W)	131	127	122	110	52	122	61.0	31	0	12.8
UI Platinum (W)	123	133	120	85	46	115	63.0	31	0	12.7
WB7202CLP	118	121	118	94	49	113	62.4	28	0	12.9
WB7328 (W)	105	119	126	72	41	106	62.5	27	0	14.5
WB7589 (W)	110	129	116	93	48	112	62.3	26	0	13.9
Durum										
Alzada (D)	115	118	121	75	-	107	62.2	32	0	13.6
Imperial	99	106	85	75	-	91	59.4	32	0	16.3
Average	120	126	119	100	46	116	62.0	31		13.7
LSD (0.05)	20	11	15	21	8	9	0.6	2		0.7

TABLE 6. SPRING WHEAT YIELD AVERAGE FOR 2016-2018 IN IDAHO.

		Di	strict	
	Northern		Eastern (Dryland)	Western
Site/Years	12	12	3	3
G & 1.4		Yie	ld (bu/A)	
Soft white	40	400	1.5	
Alturas	48	120	46	
Louise	54	111	44	
Diva	65			
JD*	62			107
Melba*	61			127
Ryan	67	122		121
Seahawk SV Saltaga	70	123		131
SY Saltese		123		
Tekoa UI Pettit	68	119		
	55	107	42	151
WB6121	64	122 112	45 41	151
WB6341	60	112	41	131
WB6430		123	44	134
Average	61	118	42	135
LSD (0.05)	3	4	4	6
LSD (0.03)	3	7	_ T	
Hard Red				
Alum	56	115	38	
Alzada (D)		106		
Cabernet		114		
Glee	62			
Jefferson	56	109	34	109
LCS Iron	62	117	34	115
UI Winchester	54			
SY Coho		120		
SY Gunsight		116		
SY Selway			33	
WB9411		115	34	123
WB9518	56			
WB9668	55	106	29	116
Hard White				
Dayn	63	131	41	
Klasic		105	29	
SY-Teton		121		
UI Platinum	61	112	33	122
WB-Hartline	61			
WB7328		101	28	105
WB7589		108	30	112
Average	59	113	33	114
LSD (0.05)	2	4	4	7

^{*}club wheat

Continued from previous page

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 2016, 2017, and 2018 are presented in Table 6 for all districts, with 3-12 site/years of data summarized for each districts.

Trade Mitigation Funds Will Benefit Export Market Development for U.S. Wheat Growers

FEBRUARY 01, 2019

ARLINGTON, Virginia — U.S. Wheat Associates (USW) and the National Association of Wheat Growers (NAWG) are pleased that U.S. wheat growers now have the opportunity to increase efforts to expand export market access with USDA's Jan. 31 announcement awarding \$200 million to 57 organizations through the Agriculture Trade Promotion Program (ATP). USW was awarded \$8.25 million, which will be distributed over the next three years.

Administered by USDA's Foreign Agricultural Service (FAS), the ATP is one of three USDA programs within the Trump Administration's trade mitigation package—created to ease the effects of recent trade retaliation against U.S. farmers and exporters. The funds will support export market development programs led by U.S. trade associations, cooperatives and other industry-affiliated organizations.

"U.S. wheat growers are facing tough times right now with the impact of retaliatory tariffs putting a strain on the export market and threatening many decades worth of market development," said Chris Kolstad, USW Chairman and a wheat grower from Ledger, Mont. "We appreciate the recognition that farmers need help to manage this additional risk. This program is a positive step forward and our people are ready to get to work."

"With the United States exporting half of the wheat crop it grows, programs like the Agricultural Trade Promotion Program (ATP) are crucial for our farmers to remain competitive in the global market," stated NAWG President and Sentinel, OK wheat farmer Jimmie Musick. "We welcome today's news that our sister organization U.S. Wheat Associates was awarded significant funding for trade mitigation activities. This funding will provide some relief to the adverse impact wheat has felt since U.S. placed tariffs on Chinese goods, opening the door for retaliation. We hope to see these affected markets opened again quickly."

U.S. wheat growers have a long history of recognizing the value of export market development by supporting the successful public-private partnership between USW's state wheat commission members and FAS. Each year, growers contribute a portion of their wheat sales which qualifies USW to apply for matching funds through FAS programs like the Market Access Program (MAP) and the Foreign Market Development (FMD) program.

⁽D) = durum



Dr. Jayne Bock joins the Wheat Marketing Center as Technical Director

The Wheat Marketing Center (WMC) welcomed a new Technical Director, Dr. Jayne Bock, to the WMC team in November. Dr. Bock established herself as an industry expert in flour and dough quality testing as an adjunct professor at the University of Guelph in Ontario, Canada before joining C.W. Brabender Instruments as their Global Technical Leader and later Chopin Technologies. She now leads WMC's research and technical training efforts focused on demonstrating the value of U.S. wheat produced across the country.



Jayne earned her Bachelor of Science and Master of Science degrees in Food Science at Kansas State University and her Ph.D. in Food Science at the University of Wisconsin-Madison. She is an experienced research leader with specialty in grain and flour quality and has a depth of experience with soft wheat quality and end products, including crackers

and biscuits. "Dr. Bock was selected after a lengthy international search. She possesses an excellent set of research skills, technical expertise, and communication abilities that will help move WMC programs in new and exciting directions," said WMC Managing Director Janice Cooper.

Jayne has published an impressive list of refereed publications covering topics including wheat and flour quality, dough rheology, gluten structure-function, and the influence of bran on product structure and quality in whole grain products. She has worked extensively with wheat breeders, agronomists, producers, millers and food processors on collaborative projects in the pre-competitive space. Her focus is at the interface of academia and industry to find solutions for emerging issues across the market value chain. Jayne is also active in wheat industry associations, including AACC International. "I enjoy the challenge of communicating



complicated technical issues to diverse audiences," Bock said.

Idaho Wheat Commission Chairman Bill Flory, Winchester, who also serves as the WMC Board Chairperson, added, "WMC's technical expertise in research and product development is highly respected around the world. Dr. Bock's background and experience are an excellent fit to help WMC meet the evolving challenges of our customers and wheat producers. Jayne [is] a great addition to our existing group of dedicated professionals."

Idaho wheat growers had the opportunity to learn more about Dr. Bock's research and expertise during a the PNW Export Tour in January, where they spent time at the Wheat Marketing Center making noodles, crackers, and a variety of flatbreads.

The WMC, created in 1988, acts as a bridge between wheat growers and customers. WMC is a technical crossroads of the wheat world linking wheat producers, consumers, millers, and end-product manufacturers. WMC provides technical training for customers on improving end-product quality, grower workshops focused on the importance of wheat quality, innovative research, product development, and crop quality testing services. WMC is funded by seven state wheat commissions, including Idaho, and is located in Portland, Oregon.



Facts About Gluten

What is gluten?

Gluten is a protein found in wheat, barley, rye, and their grain relatives. Gluten helps the bread expand while the dough is rising and hold its shape while it's baking and after it cools. It's also gives bread its texture.

Gluten as part of a healthy diet

Grains, both whole and enriched, play a vital role in a healthy diet, and are an excellent source of antioxidants, fiber, B vitamins, vitamin E, magnesium, iron, folic acid, and other vitamins and minerals. The complex carbohydrates in grains are naturally low in fat, cholesterol, and sodium. The 2015-2020 Dietary Guidelines for Americans issued by the United States Department of Agriculture (USDA) and the United States Department of Health and Human Services (USDHHS) recommed that an average adult consumer six to ten 1-ounce portions of grain a day, with at least half of those as whole grains.

What is celiac disease?

Celiac disease is an autoimmune disorder. When someone with celiac disease eats or drinks anything with gluten in it, the person's immune system reacts by damaging the lining of the small intestine. This damage means that nutrients cannot be absorbed, and severe digestive, mood, skin, and behavioral symptoms occur. These symptoms often last several days and

there is no treatment. Approximately one percent of the population has been diagnosed with celiac disease. Many people who have gluten sensitivities do not test positive for celiac disease but claim to feel better on a gluten-free diet.

The risks of a gluten-free diet

Some of the risks and drawbacks of a gluten-free diet include:

- Reduced intake of essential nutrients such as protein, fiber, folate, iron, thiamin, riboflavin, vitamin B-3, and calcium
- Increased intake of fat, sodium, and calories. Fats and sugars are often used as replacement in glutenfree products
- Decreased fiber intake, which can cause serious digestive issues
- Increased food costs. On average, gluten-free products are about 160% more expensive than regular products
- Decreased number and variety of beneficial bacteria in the gut, which may make the immune system less effective
- Limited variety of healthy food choices
- Increased intake of wheat replacements that have higher glycemic indexes and lower fiber and protein levels than wheat

Craig Goodwin: A Legacy of Excellence

Craig Goodwin was born in Gooding, Idaho in 1953. Craig is married to Patty and has 5 children and 23 grandkids. Life revolved around work and he developed a strong work ethic from a young age by watching his parents. Craig had several opportunities for work at his parents' gas station, moving pipe, delivering presto logs and other various jobs. After marrying his high school sweetheart, Patty Vail, in 1971, Craig worked with Diamond National Sawmill in Newport, Washington. Craig and Patty eventually moved to Southeast Idaho to be closer to family, where Craig started mining with Bucyrus-Erie out of Pocatello. Craig enjoyed his work at Bucyrus-Erie and was disappointed when the plant closed

in 1983. He then started as temporary harvest help with Farmers Merchant and was offered a field man position. Craig really enjoyed getting to know and work with producers all over Bingham County. Craig continued to work hard and eventually was promoted to grain buyer. A sick day was a very rare thing, Craig's daughter says, "I remember jumping for joy when our road was drifted shut and the bus could not make it through. Instead of enjoying a snow day Dad had us all get in the pickup and we drove through the field to get to school and work." Craig was voted the friendliest in his high school class and his friendly attitude and optimism are what contributed to his success in grain buying and throughout his

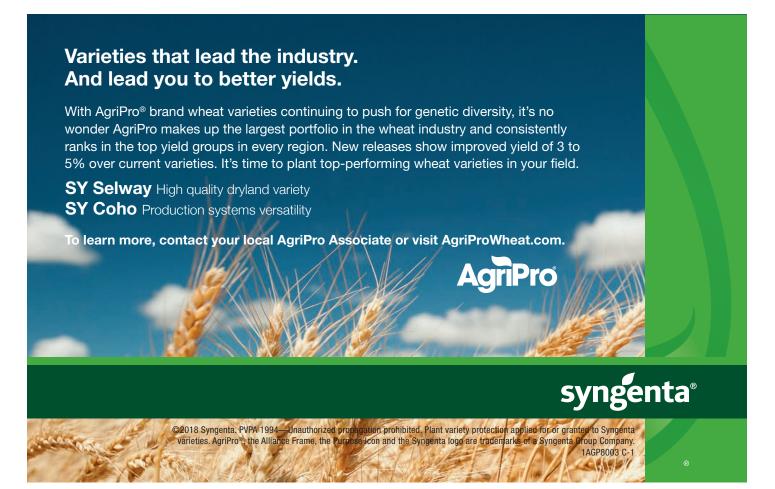
life. Craig retired from Thresher Artisan Wheat after a 32-year career.

Craig was loved and admired by those with whom he worked and traded. Greg Murdoch, with Wada Farms, says its rare in today's world to work with the same individual for 32 years and not only consider them a good business partner but a great friend. "Craig has meant the world to me and I have the upmost respect for him and the life he's lived."

Dean Dreher said, "The human race has one really effective weapon: laughter." This is Craig Goodwin to a T. "Whenever I was around Craig we would either be laughing with each other or at each other. For instance, I was in his office negotiating on grain prices. Craig had a horn sitting on his desk. I ask him about it and he said it was a horn. Well, my curiosity got the better of me and I blew into the horn. My face was covered in powder. The laugher that day was on me, but either way the laugh made you feel better from the experience. When under Farmers Merchant Craig moved from operations to buying I wondered what they were thinking. After six months of dealing with Craig as a buyer I wondered how they ever ran the office without him! Craig is a very good friend, a super human being; he touched a lot of people's lives in a good way, including mine."

Craig Goodwin Excellence in Agriculture Legacy Scholarship

In honor of Craig's legacy of integrity, work ethic, and eternal optimism even in the face of hardship Thresher Artisan Wheat is establishing a \$500 scholarship. This \$500 scholarship will be available to Sophomores or higher in college that have completed 1 year of school in an agriculture-related field by January. It will be available to students attending 4-year or 2-years schools in Idaho. Preference will be given to students who have been involved in FFA and 4H and have maintained a GPA of 3.5 or above. The Craig Goodwin Excellence in Agriculture Legacy Scholarship will be awarded during our annual Seed Days event in January/ February. Deadline for application will be November 1st.



Tours Showcase Field to Fork for Idaho Wheat Growers

Through the support of Idaho's wheat growers, the Idaho Wheat Commission is able to host two tours that are designed to show wheat growers, field men, and industry partners where Idaho's wheat goes after it leaves the field. The Pacific Northwest (PNW) Export Tour is held each January and the Domestic Marketing Tour is held on even years.

Last June, nine growers, industry partners, IWC commissioners and staff members participated in the Domestic Marketing Tour. The program included stops at Grain Craft in Blackfoot, Ardent Mills in Ogden, Utah, Union Pacific Railroad Roper Yard in Salt Lake City, Utah, Aspen Mills Bakery in Ogden, Pepperidge Farm in Richfield, Utah, and a final stop at Monsanto in Soda Springs.

The group met with Shrene White at Ardent Mills, who explained the extensive research Ardent Mills has conducted into consumer trends. Later the group was able to see how those trends transfer to the small, family owned and artisan baking companies like Aspen Mills Bakery and how production practices at similar baking businesses compare to and compete with the overwhelming quantities produced by wheat foods giants like Pepperidge Farm.

In January, 19 growers, industry partners, IWC commissioners and staff members participated in the



Tour participants get a hands-on experience with the process of testing wheat quality and making dough before turning the dough into noodles. Pictured here: Bon Lee, WMC; Zak Miller, Idaho Farm Bureau; Steve Riggers, Craigmont; Joe Anderson, Genesee; Dan Lakey, Soda Springs; Devon Zenner, Nez Perce; Dr. Jayne Bock, WMC; Clinton Kinghorn, Idaho Falls.



L-R Brogan Darrington, Declo; Blaine Jacobson, IWC; Jeff Van Orden, Blackfoot; Jerry Brown, Soda Springs; Daren Hall, Director of Terminal Operations Union Pacific; Taylor Duncan, Rupert; Gilbert Hofmeister, American Falls; Kyle Larson, Soda Springs; Tyler Searle, Rexburg.

PNW Export Tour in Portland, Oregon. Discussions with Jayne Bock, Technical Director at the Wheat Marketing Center, and the hands-on quality testing exercises provides unique insight into wheat production and wheat quality and how wheat quality is such a significant factor in global demand of Idaho wheat. The Wheat Marketing Center is a facility whose mission it is to bridge the gap between growers and consumers through technical training, grower workshops, research, product development, and crop quality testing. The Wheat Marketing Center promotes and demonstrates the superb quality of wheat grown in the PNW for global products, and the participants on the PNW Export Tour were able to experience those efforts first hand.

In addition to the Wheat Marketing Center highlights of the tour included conversations with Kristin Meira, Executive Director of the Pacific Northwest Waterways Association, and Kevin Brice, Deputy District Engineer for Programs and Project Management with the U.S. Army Corps of Engineers. The group were also able to participate in a tug boat tour of the Willamette River with Shaver Transportation and stopped at the TEMCO



PHOTO AT LEFT: Front row L-R: Lacey Wilde, IWC; Trevor Stout, Genesee: Blaine Jacobson, IWC; Devon Zenner, Nez Perce; Braden Lake, Rupert; Brogan Darrington, Declo; Doug Barrie, Idaho Falls. Back row, L-R: Joe Anderson, Genesee; Clinton Kinghorn, Idaho Falls; Bill Flory, Winchester; Jon Hogge, University of Idaho; Dan Lakey, Soda Springs; Nick Wood, Bancroft; Zak Miller, Idaho Farm Bureau; Steve Riggers, Craigmont; Roger Morter, Bonners Ferry.



ABOVE: Domestic Marketing Tour at Pepperidge Farm, where all Goldfish Crackers and many Pepperidge Farm cookies are made from Idaho wheat.

RIGHT: The PNW Export Tour group got a first-hand view of the daily operation of TEMCO at their elevator and facility on the Willamette River.

BOTTOM RIGHT: Domestic Marketing Tour group at Aspen Mills Bakery.

Portland terminal which allowed them a closer look at the logistics and challenges of transporting wheat down the Columbia Snake River system.

Both the Domestic Marketing Tour and the PNW Export Tour are unique and insightful experiences for those involved directly in the production, marketing, and end-use of Idaho wheat. If you are interested in participating in either tour in the future, please visit with the IWC commissioner from your area.









2018 Idaho Spring Barley Variety Performance Tests and 2016-2018 Yield Summaries

BY JULIET MARSHALL, EXTENSION SPECIALIST ABERDEEN,
KURT SCHROEDER, EXTENSION SPECIALIST MOSCOW,
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DEPARTMENT OF ENTOMOLOGY, PLANT PATHOLOGY AND NEMATOLOGY, UNIVERSITY OF IDAHO;
AND DEPARTMENT OF PLANT 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 20' 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 2018 spring barley tests are summarized by district in Tables 1-4. The state is divided into the Northern (Table 1), Western (Tables

2 and 3), and the Eastern Districts (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 2016, 2017, and 2018 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.

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

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TABLE 1. DRYLAND SPRING BARLEY PERFORMANCE IN NORTHERN DISTRICT AT BONNERS FERRY, CRAIGMONT, GENESEE, AND MOSCOW, 2018.

		Yie	eld		North Idaho Average						
Variety	Bonners Ferry	Craigmont		Moscow	Yield	Test weight	Plant Height	Lodging	Plumps	Thins	Protein
		bu	/A		bu/A	lb/bu	inches	%	%>6/64	%<5.5/64	%
Feed											
Altorado	69	77	104	97	87	52.2	33	3	64	12	9.1
Camas	74	76	93	94	84	53.5	35	1	82	5	9.7
Champion	65	90	100	103	89	53.7	36	2	79	5	9.2
Claymore	59	72	105	104	85	51.1	35	5	74	7	9.1
LCS Vespa	73	80	105	92	87	52.0	30	0	82	5	9.4
Lenetah	64	78	100	100	86	52.6	34	4	83	4	8.8
Lyon	75	75	110	99	88	51.2	32	3	76	7	9.2
Muir	63	66	102	100	82	51.6	33	6	79	6	9.6
Oreana	75	82	109	105	93	52.2	30	1	73	9	9.2
Survivor	60	76	93	95	80	52.8	34	3	86	4	10.0
Tetonia	76	88	111	102	94	52.6	34	0	76	6	9.2
Food											
Goldenhart*	51	54	68	67	60	56.1	35	3	71	8	12.1
Havener*	60	58	93	79	72	59.6	35	0	52	18	11.1
Kardia	66	62	91	90	77	50.5	34	0	75	7	10.9
Meg's Song*	51	66	90	79	71	58.2	34	3	68	10	11.6
Salute	61	78	90	90	80	52.0	35	1	87	3	10.8
Transit*	38	43	60	65	52	56.7	36	0	52	12	13.5
Average	63	72	95	92	80	53.4	34	2	74	8	10.1
LSD (0.05)	5	11	9	10	5	0.8	2	2	6	3	
Malt											
AAC Connect	63	73	98								
CDC Bow	56	67	94	90	77	50.9	37	3	83	5	9.5
CDC Copeland	62	59	94	82	74	50.3	36	3	73	11	9.5
CDC Fraser	64	67	107	86	81	49.8	35	0	80	7	9.1
Esma		83		-	-	-	-	-	-	-	-
GemCraft	59	72	111	97	85	50.3	33	1	72	10	8.9
LCS Genie	54	69	101	91	79	52.1	30	1	87	5	9.3
LCS Odyssey	58	70	109	100	84	50.5	30	3	84	5	9.2
LCS Opera	70	82	112	103	92	50.4	29	0	79	8	8.6
LCS Sienna	56	70	103	92	80	51.2	32	1	81	7	9.0
Manta		69									
Sangria		79									
Average	60	72	103	93	82	50.7	33	1	80	7	9.1
LSD (0.05)	5	ns	9	11	7	1.0	2	1	8	4	_

^{*}Hulless entry

this article are for 2018 trials; previous results can be found in the spring 1992 to 2017 issues of Idaho Grain Magazine. Average performance over locations and years more accurately indicates a variety's relative performance. Try to evaluate as much information as you can prior to selecting varieties. Yield is a primary characteristic used to select varieties, but disease resistance, maturity, lodging tendency, and quality characteristics such as test weight and plumpness are also

important variety selection considerations. Also consider that plots are managed according to the average expected yield, latest varietal maturity, and / or performance of the surrounding crop in a grower's field, whether wheat or barley. Varietal performance may not reflect actual performance in your field when a specific variety is managed for optimal economic performance.

Continued on next page



Continued from previous page

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

Further Information

Variety performance information for winter wheat and winter barley has been published in the fall issues of Idaho Grain. An excellent Extension Publication for barley producers is "Idaho Spring Barley Production

Continued on next page

TABLE 3. DRYLAND SPRING BARLEY PERFORMANCE IN SOUTHERN DISTRICT AT WEISER, 2018

Variety	Yield	Test weight	Plant Height
Spring Feed Barley	bu/A	lb/bu	inches
Altorado	32	44.2	28
Claymore	27	44.4	27
Champion	24	43.7	28
Oreana	23	43.5	25
Average	27	44.0	27
LSD (0.05)	11	14.2	
Spring Malt Barley			
Manta	32	52.0	27
Esma	32	44.3	27
LCS Opera	30	46.8	27
LCS Odyssey	29	48.8	25
CDC Fraser	29	42.4	30
Sangria	28	48.3	29
LCS Sienna	28	47.6	28
CDC Bow	25	43.4	30
AAC Connect	22	42.6	27
LCS Genie	22	43.3	24
Average	28	45.9	27
LSD (0.05)	12	14.7	

No Lodging at this location

Significant grasshoper damage in all plots, estimated at 40% loss.

TABLE 2. IRRIGATED SPRING BARLEY PERFORMANCE IN SOUTHERN DISTRICT AT PARMA, 2018

Variety	Yield	Test weight	Plumps	Thins	Plant Height
Spring Feed Barley	bu/A	lb/bu	%>6/64	%<5.5/64	inches
Altorado	150	57.7	97	1	30
Oreana	133	53.0	96	1	27
Claymore	126	56.8	99	0	30
Champion	112	56.5	98	1	30
Average	130	56.0	97	1	29
LSD (0.05)	45	8.1	2	0.3	
Spring Food Barley					
Kardia	123	53.5	98	0	29
Goldenhart*	107	58.7	98	0	29
Average	115	56.1	98	0	29
LSD (0.05)	27	1.8	5	0.2	
Spring Malt Barley					
LCS Opera	163	53.1	99	1	29
LCS Odyssey	148	52.6	99	1	25
LCS Genie	133	54.5	98	1	24
LCS Sienna	132	53.8	98	1	29
GemCraft	123	54.1	98	1	30
AAC Connect	120	53.2	98	1	29
CDC Fraser	115	52.3	98	1	32
CDC Bow	106	53.5	99	1	32
Average	130	53.4	98	1	29
LSD (0.05)	20	0.8	3	0.7	

No Lodging at this location

Stripe rust present in all plots, with no significant damage.

^{*}Hulless entry

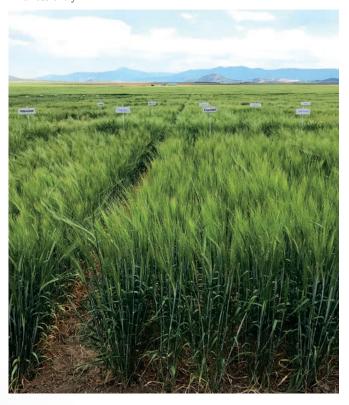


TABLE 4. IRRIGATED TWO-ROW SPRING BARLEY PERFORMANCE IN EASTERN DISTRICTS AT RUPERT, ABERDEEN, IDAHO FALLS, AND ASHTON, 2018.

		Irri	gated Yi	eld		Dryland			Irrigate	d Average	·	
Variety	Rupert	Aberdeen	Idaho Falls	Ashton	Yield	Yield Soda	Test Weight	Plant Height	Lodging	Plumps	Thins	Protein
Variety		bı	ı/A		bu/A		lb/bu	inches	%	% > 6/64	(%<5.5/64)	%
Feed												
Altorado	142	174	157	132	151		54.4	36	1	94	2	10.8
Champion	139	157	137	121	137	64	54.3	37	15	91	4	11.6
Claymore	163	140	126	113	135	57	51.7	36	15	84	7	10.8
Goldenhart*	112	77	106	90	96		59.9	37	20	91	3	14.8
Idagold II	131	116	132	112	123	65	53.1	34	4	82	4	11.2
Julie*	132	140	131	91	123		56.4	36	12	89	4	11.5
Kardia	129	124	130	103	122		50.5	37	25	78	10	11.4
Lenetah	137	138	127	112	128	71	53.0	39	31	87	6	11.4
Millennium (SB6)	172	158	143	97	142	66	49.9	37	9	77	8	11.0
Oreana	170	155	145	105	144	70	52.6	32	11	82	7	11.2
Transit*	128	131	120	89	117		55.6	37	3	89	4	11.0
Xena	150	144	130	105	132	58	52.7	36	12	86	6	11.3
Average	144	141	133	105	131	61	52.9	36	12	86	5	11.4
LSD ($\alpha = .05$)	19	22	16	28	11	14	0.9	3	16	8	4	0.7
Malt												
AAC Connect	160	136		91	129	61	53.3	37	2	93	3	11.7
AAC Synergy	144	131	130	89	124		52.3	37	27	91	5	11.3
ABI Eagle	147	118	146	102	128	68	52.5	34	8	91	4	11.6
ABI Growler	151	133	127	113	130	55	51.7	36	9	92	4	11.3
ABI Voyager	151	134	153	101	135	73	53.2	38	5	97	2	11.0
AC Metcalfe	129	122		86	112		52.9	38	11	92	3	11.5
CDC Bow	137	125	141	75	120		53.7	39	1	96	2	11.5
CDC Copeland	138	126	120	99	121		52.5	40	22	91	3	11.4
CDC Fraser	157	139	138	95	132		52.1	36	27	94	3	11.4
Conrad	147	118	119	103	122		52.8	35	24	93	3	11.4
Esma		174	166		170		52.7	32	21	95	2	11.0
Explorer	153	154	138	98	136		51.9	29	14	90	4	11.3
Full Pint	143	150			146		53.2	24	20	92	3	11.0
GemCraft	149	129	125	103	126	63	51.4	36	28	87	5	11.0
LCS Genie	161	155	135	113	141		52.5	30	8	90	3	11.3
LCS Odyssey	156	136	148	118	140		50.3	30	15	88	4	11.5
LCS Opera	161	118	130	111	130		48.7	30	11	78	10	11.2
LCS Sienna	166	156	139	116	143		52.0	32	32	87	5	11.1
Manta		168	141		154		52.6	31	35	83	4	11.0
Merit 57	130	117	117	88	113	59	50.2	37	22	79	9	11.8
Moravian 179	147		153		150		53.5	29	9	98	1	11.2
Moravian 69	159	139	123		140		50.9	29	37	77	9	11.2
Sangria		170	148		159		52.3	34	5	94	2	11.0
SY Sirish	167	162	144	127	150		52.5	31	1	93	3	11.3
Average	148	138	136	101	135	65	52.2	33	16	90	4	11.2
LSD ($\alpha = .05$)	18	22	18	15	11	10	1.0	2	20	10	5	0.3

^{*} indicates hulless variety

⁽SB6) = Six-row barley

TABLE 5. SPRING BARLEY YIELD AVERAGE FOR 2016-2018 IN IDAHO.

	Dis	trict	
	Northern	Eastern	Western
Site/Years	12	12	3
2-Row Feed			
Altorado	92	147	
Camas	90	_	
Champion	94	136	
Claymore	93	143	105
LCS Vespa	96		
Idagold II		130	
Lenetah	93	134	
Lyon	92	_	
Millennium (SB6)		143	
Oreana	99	145	124
Tetonia	97		
Xena	_	138	
Average	94	140	115
LSD $(\alpha = .05)$	3	5	
2-Row Malt			
ABI Growler		126	
ABI Voyager		137	
AC Metcalfe		121	
ACC Synergy		128	
CDC Copeland	85	128	
Conrad		127	
LCS Genie	90	138	115
LCS Odyssey	96	142	112
Moravian 69		134	
Average	90	131	113
LSD (0.05)	4	5	
2-Row Food			
Goldenhart*	67	102	
Julie*		120	
Kardia	66	127	100
Salute	81	_	
Transit*	55	104	
Average	67	113	100
LSD (0.05)	3	5	

^{*} indicates hulless variety (SB6) = Six-row barley

Continued from previous page

Guide" (Bulletin No. 742) that was updated for 2003, (see the Idaho Ag Communications website at 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 www.uidaho.edu/extension/cereals/.



Idaho Barley Commissioner Wes Hubbard, 2nd from right, represents IBC as a delegate to the U.S Grains Council and serves on the Asia A Team.

Idaho Barley Commission Leverages Grower Dollars Through U.S. Grains Council Partnership

BY LAURA WILDER, IDAHO BARLEY COMMISSION ADMINSTRATOR

With 96 percent of the world's population living outside of the United States, developing export markets to provide greater marketing opportunities for Idaho growers is an important program area for the Idaho Barley Commission (IBC). With limited financial resources, it is crucial for IBC to leverage Idaho grower dollars by working with strategic partners in this area and



the U.S. Grains Council (USGC) is that primary partner.

The U.S. Grains Council develops export markets for U.S. barley, corn, sorghum and related products including distiller's dried grains with solubles (DDGS) and ethanol. With full-time staff presence in 13 key markets and representatives in an additional 15 locations,

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the Council operates programs in more that 50 countries and the European Union. The USGC mission is "Developing Markets, Enabling Trade and Improving Lives". This mission is accomplished through trade policy work and market capacity building, information and research to provide current



data to help buyers recognize the value of U.S. barley and other grains, and through trade teams and missions, along with other programs.

In addition, the Council engages grain producers and agribusiness representatives who serve together on seven Advisory Teams (A-Teams) that identify opportunities, set priorities and chart the course for the

U.S. Grains Council every

vear. IBC Commissioner Wes Hubbard, a food barley grower from Bonners Ferry, currently represents Idaho growers as the IBC delegate to USGC and also serves on the Asia A-Team



A-Teams are critical for the Council's success because they leverage the perspective, experience, insight and leadership provided by grassroots membership. A-Team members meet in person twice a year during the Council's annual meetings where they review the Council's Unified Export Strategy (UES) and help set directions and priorities for the year ahead. They also have periodic phone calls where they review new developments that affect USGC work around the world.

There is also a barley sector focus group within USGC which Hubbard and IBC Administrator Laura Wilder participate in. This group encourages sharing information and cooperation in U.S. barley marketing efforts to further leverage barley export marketing potential.



RECIPE



THAI BARLEY STIR FRY

INGREDIENTS

- 1/2 Cup PEARL BARLEY
- 1 Cup water
- 2 Tbsp vegetable oil
- 1 chicken breast, cut into bite-sized pieces
- 2 Cloves garlic, finely chopped
- 1 Cup thinly sliced eggplant
- 1/2 Cup chopped bell pepper
- 1/2 Cup chopped onion
- 3 Tbsp chopped basil
- 1 Tbsp chopped mint
- 8-10 Drops red pepper sauce
- 1 Tbsp oyster sauce
- 1 Tsp soy sauce
- 3 Tbsp chopped peanuts

Garnish with shredded red cabbage carrots



DIRECTIONS

- 1. Place barley and water in medium saucepan; bring to boil. Reduce heat to low, cover and cook 45 minutes or until barley is tender and liquid is absorbed. Set aside.
- 2. In large skillet or wok, heat 1 Tbsp oil over high heat. Add chicken pieces and garlic; stir-fry 3 to 4 minutes.
- 3. Add cooked barley; stir-fry an additional 3 minutes, then remove from pan; keep warm.
- 4. Heat remaining 1 Tbsp oil in skillet. Add eggplant, bell pepper and onion; stir-fry 3 minutes. Add basil, mint, red pepper sauce, sugar, oyster sauce and soy sauce; cook 2 more minutes.
- 5. Return barley-chicken mixture to skillet; stir-fry 3 minutes.
- 6. Sprinkle with peanuts and garnish with shredded red cabbage and carrots

Nutrition Facts (per serving, 4 servings in recipe):
Calories 250 | Total Fat 9g | Saturated Fat 1.1g |
Cholesterol 33mg | Sodium 171mg | Carbohydrates 27g |
Dietary Fiber 6.5g | Protein 17.5g

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Albaugh's BIOst® Insecticide 100 provides the grower with a second mode of action to enhance the performance of insecticide seed treatments for wireworms resulting in wireworm mortality and improved Return on Investment.





Albaugh's goal is to deliver performance and value against wireworms.

- 1. Albaugh's BIOs⊤[®] Insecticide 100 wireworm technology when combined with separately registered seed treatments Resonate® Insecticide and NipsIt Inside® Insecticide will provide the grower with 3 active ingredients and two modes of action against wireworms.
- 2. Albaugh's BIOst® Insecticide 100 provides a contact mode of action resulting in enhanced performance and wireworm mortality.

Contact your local seed retailer for more information on BIOST® Insecticide 100

Refer to the product label for complete use directions and instructions. BIOsr® and Resonate™ are trademarks of Albaugh, LLC.
NipsIt Inside® Insecticide is a trademark of Valent USA, LLC.
Always use and follow label directions. EPA Reg. No. 84059-14-42750 AD No. 100616, EPA Reg. No. 42750-133 AD No. 110316, EPA No. 59639-15