

IDAHO GRAIN

THE IDAHO GRAIN PRODUCERS ASSOCIATION MAGAZINE

WINTER 2015



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In Good Hands

WHAT a year it's been – overall, it's been a very good year serving as IGPA's President. I've really enjoyed my time on the executive board, and learned a lot during my tenure. This past year, we've spent a significant amount of time on farm bill implementation, working on changes to crop insurance, burning and air quality issues, and building a good relationship with the Idaho Cattle Association on open range issues – it's been a busy year.

Then, in late August, I received a phone call from Travis Jones, IGPA's executive director. He informed me that he was going to take a new position with Congressman Mike Simpson in Boise. The new position would involve less travel and enable him to spend more time with his family, which is how it should be after spending many years traveling with the grain growers' organization. I wish Travis and his family the very best in his new endeavor.

The Executive Board and representatives from the Barley and Wheat Commission met in Boise for the task of selecting a new executive director. After a long day of interviews with five very good candidates, we selected Stacey Satterlee – I am confident she is the right person for the job. Stacey is a farm girl from Idaho who brings to IGPA an extensive background in agriculture policy, having worked in Washington, D.C. and Idaho. I think she will serve Idaho wheat and barley growers well.

I would like to thank the Idaho Wheat Commission and the Idaho Barley Commission for the support I have received from them over the last four years. Most of all, I would like to thank the farmers of Idaho for the hard work you do. I am grateful for all the people I have met, and the friends I have made over the past four years. You have made me feel welcome and I appreciate your support.

IGPA will continue to work for you. The organization is making a difference. I applaud the young farmers who are stepping up to the plate and getting involved at the county and state levels. These young guys are the future of farming! ■

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FIRST, let me say: I am honored and excited to be your executive director.

I thought I'd introduce myself a little bit – I grew up in Eastern Idaho, and graduated from Pocatello High School. My family is in custom farming – we put up alfalfa, bale straw, and spread fertilizer (and in the past few years, my dad has added raising pheasants to his job description).

I graduated from Utah State University with a degree in English. After I graduated from college, I spent the summer working on the farm, then moved to Washington, DC for an internship with Idaho Senator Mike Crapo. I loved my time in DC as an intern – so much

so, that I decided I wanted to move there.

I started working at the National Cattlemen's Beef Association, and met my husband-to-be Daniel – I'd originally committed to stay in DC for a year, but I found the years quickly going by. Daniel and I got married, and I changed jobs a couple of times, working for the Western Growers Association, then the National Council of Farmer Cooperatives. Throughout my career in DC, I worked on federal land issues, international trade, environment and conservation, immigration and labor, water, food safety and nutrition, and farm policy.

Daniel and I were blessed with twin babies while we lived in DC, and just before their second birthday, we moved back to Idaho. For the past three years, I've been working for the American Cancer Society Cancer Action Network on health care policy issues.

Outside of work, I love to fish in the summer and ski in the winter – while living in DC, I'd plan as many trips home as I could around those two activities. I love music and books, I love to cook (and to eat good food), and I love to travel (though I haven't as much since I had kids). I love my family – my parents still live in Pocatello, my sister lives in Salt Lake City with her husband and their two children, and my brother just moved to San Diego – I love being closer to all of them, so my kids get to grow up with their cousins and spend time with their grandparents. Our twins are now five years old, a boy and a girl, and they are so much fun (and wild and energetic, and smart and sassy, and exhilarating and exhausting) – and we just had a baby boy this past July (who is adorable and has a headful of dark hair). We also have a dog named Spud.

I have some pretty big shoes to fill – but I can't say enough how excited I am to be part of the Idaho Grain Producers Association. As I'm getting settled in to the job, there are a few things I want to accomplish sooner than later. First, I want to get to know you – the growers IGPA represents. Call me at the office at 208-345-0607 or email me at ssatterlee@idahograin.org anytime. I want to hear from you – what has been working, what we can do differently, what we can do better. I want you to know what IGPA is doing for you – we publish this magazine, write newsletters, send emails – what is the best way to communicate with you? I want to hear from you. We are active on so many fronts – what issues are you dealing with on your farm? I want to hear from you. In this edition, we've started featuring a grower in the magazine – our first profile is about Justin Place who lives in Hamer. We'll continue these profiles in coming editions – I'd welcome your thoughts on issues or people who should be included. Together, we will keep IGPA the premier agriculture organization representing Idaho's grain producers. ■



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Collaborative Efforts Improve Small Grains Policy for Idaho Grain Producers

By Benjamin Thiel, U.S. Department of Agriculture Risk Management Agency, Spokane Regional Office director

WHAT happens when a farmer plants a crop and has federal crop insurance on that particular crop, but the policy doesn't protect against an unexpected change in the quality of the crop due to unfavorable weather conditions? This is exactly what happened in 2014 in southern Idaho. Crops in the region sustained heavy damage due to an abnormally wet harvest period, which resulted in significant quality problems for Idaho grain producers.

When you have too much moisture during the early stages of wheat production, the sprout can be damaged. This can cause lower test weights and hurt protein levels. This triggers the production of starch-degrading enzymes that can have a negative impact on dough quality. The industry measures sprout damage with a test called falling numbers. This test measures the effect of the enzymes on wheat quality in flour or meal. Wheat normally scores high. It falls within a range of 400-500 for the rating system. A critical threshold a grain miller uses for wheat is 300 or greater. When falling numbers go below 300 the wheat is usually discounted.

The weather events of 2014 led to lower prices for wheat producers. Producers raised questions about quality loss coverage because of the excessive rainfall during the wheat harvest. The coverage gap identified a weakness in the safety net for wheat producers. Southern Idaho producers, the U.S. Department of Agriculture's Risk Management Agency, and other partners collaborated to find a solution to future weather events impacting wheat production, specifically dealing with quality issues.

Producers' needs shift over time, and RMA continues to listen to producers who share their stories and concerns. RMA's Spokane Regional



PHOTO: SCOTT BAUER, U.S. DEPARTMENT OF AGRICULTURE

Office had many conversations and meetings with industry partners, including the Idaho Grain Producers Association, Idaho Wheat Commission, and the Idaho Barley Commission. RMA heard concerns about the impacts of 2014 and took action to help make modifications to the wheat quality coverage tables for falling numbers in the Special Provisions of Insurance for Wheat.

Involvement with stakeholders helps identify changes that can be made to improve the federal crop insurance safety net. Brandon Willis, the RMA administrator, emphasized the importance of listening to and gathering feedback from producers who use safety-net options. Consistently reviewing farm safety-net programs will help ensure those most at risk have policies available that work for them.

Collaborative efforts resulted in several significant changes. In previous crop years, the Hard White and Hard Red Winter wheat classes were not covered for falling numbers. Beginning with the 2016 crop year all classes of wheat are covered. The second change impacts falling numbers that go below 200. Instead of using a set factor, wheat will be subject to a reduc-

tion in value calculation specified in the special provisions. These changes provide all classes of wheat with poor falling numbers more quality coverage. Other changes were made improving coverage options for Soft White, Hard Red Spring and Durum wheat.

RMA relies upon the data collected for setting quality coverage standards for federal crop insurance. RMA worked with various partners to modify wheat discount standards for falling numbers. These new standards are now available for the Special Provisions of Insurance for Wheat, effective for the 2016 crop year.

Producers have a lot at stake. RMA continues to welcome industry suggestions to ensure the best tools are available to manage price, quality and production risks.

RMA continually works to address and innovate solutions to federal crop insurance safety-net options to mitigate evolving agricultural risk. By listening, learning, and pilot-testing new or expanded insurance options, RMA continues to ensure that a critical safety net for modern agriculture, federal crop insurance, is available for the greatest number of farmers and ranchers. ■



Grower Profile



Justin Place of Jefferson County with his farm picture on display in the office of Idaho Senate Ag Committee Chairman Jim Rice.

Justin Place

to withstand the abrasion. When the sand begins to blow, the seedlings either get cut off or buried; it's a real struggle.

We visited with Clark Hamilton (Idaho Wheat Commissioner) and Gordon Gallup (former Idaho Wheat Commissioner) this summer to see what they are doing on their farms in terms of direct seeding. I was most interested in seeing Clark Hamilton's operation to compare irrigation against irrigation (Gordon is a dry land farmer).

If I can leave the straw stubble, I have a wind-break fence every 7-1/2 inches.

How did it work?

I tried one pivot this spring that has quite sandy ground on half and heavier soil on the other half. We sprayed out the hay in the fall of 2014 leaving the crowns and stubble in place. This spring, we watered the field and planted directly into that stubble. I purchased a new drill in the summer of 2014. It's a conventional drill with the capacity to put heavier down pressure on the openers. We shanked in liquid fertilizer at the same time. We had good results in spite of a little retouching to some of the hillsides where we didn't get the seed-to-soil contact we wanted. It made us look at the rest of our farm (for opportunities to reduce tillage).

Concerns about going no-till?

The only downside I see with no-till is that I'd like to have my fields a little smoother beforehand.

- Location — Hamer, ID
- How long in farming — second generation
- Farm size — 1,250 farmable acres
- Family — Tara (wife) and four sons: Kyler, Alex, Daniel and Truman
- Rotation — wheat, barley and alfalfa with some land rented out for potatoes

By Cindy Snyder

REDUCING wind erosion and improving water efficiency are two of the greatest challenges facing Justin Place, who farms in Jefferson County. Here are some of his thoughts on that topic and a few others:

How has your crop rotation changed?

We used to raise a potatoes, alfalfa, a little wheat and a lot of barley. About three years ago, we dropped potatoes out of the rotation. We still have alfalfa, a little wheat and a lot of barley. Wheat and barley aren't a rotation, but it's hard to find another crop to put in. Locally, we don't have the market capacity to raise other crops.

Why take potatoes out of the rotation?

I only grew about 300 acres of potatoes. The market wasn't good at the time and it was expensive to continue growing potatoes. We were seeing a lot of wind erosion due to the lack of residue after harvest. We've gone back to leasing some ground to other potato growers to include another crop in the rotation but that's not a good solution either as we are transitioning towards no-till.

What appeals to you about no-till?

The trouble we have up here is that we've got quite a bit of sand. We've got to water the field a lot to hold that sand down while we're planting. Some years we have to re-drill two or three times because the sand cuts off the seedlings. It takes quite a bit of growth for plants to be big enough



The Place Family (left to right): Daniel, Truman, Justin, Tara, Kyler, and Alex

I may go back with a disk and touch up a few spots that are a little rough. For example, I have a field where a ground sprayer left deep ruts when the field was wet after all that rain last spring.

What about water savings?

To comply with the safe harbor agreement reached between ground water and surface water users in southern Idaho, our water district will have to cutback use by 11 percent next year. If I don't have to pour water on my fields all spring trying to get a crop out of the ground, that's good for everyone.

Photography is your hobby, how did you get started?

I've always been fascinated with technology and when digital cameras came out, I had to have one. Then I took a photography class from an acquaintance who lived nearby and has since become a good friend. We went to the World Super Pipe snowboard competition in Park City, Utah, several years. The first time we won passes from a sponsor, the second year we got press passes so we could shoot with the professionals. I have a press pass signed by Shaun White on one side and Torah Bright on the other, both of whom won gold that year.

What do you like to shoot best?

I do a little freelance work for the local high school shooting athletic events. I try to do something creative and different for them to use in their yearbook. I also do a lot of senior and family portraits. I once shot a family portrait that had 115 people in it.

What's next for you?

I recently purchased a GoPro camera and mounted it on my farm equipment. That was fun for a while but now I'm looking for something else to do with it.

What's your favorite family holiday tradition?

Each year we go up to the hills and cut a Christmas tree. We often bring hot chocolate and snacks, and sometimes build a fire. We've taken the scoop shovels sledding down the road. One year the snow had drifted on the road so I drove out in the sagebrush for a half mile, maybe three-quarters of a mile, before I could get back on the road. I about had a heart attack the next year when I could see how many big rocks were out there where I'd been driving the year before. ■



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Why Idaho Farmers Should Care About the Trans-Pacific Partnership

By Ben Conner, U.S. Wheat Associates

FEW economic topics seem to divide people as much as trade, so it's no wonder that the biggest trade agreement of them all, the Trans-Pacific Partnership (TPP), has revived the public debate on the consequences of that ancient human activity. For Idaho, agriculture could be a big winner once TPP goes into effect. While the full details have only just been released, a clear enough picture has emerged that show substantial benefits for agriculture.

TPP is an agreement negotiated between 12 countries that are aiming to create the largest regional trading bloc in the world. The United States already has existing bilateral trade agreements with six of the countries, meaning that with ratification of TPP, the United States would have five completely new free trade relationships. Most significantly for agriculture, those new relationships include Japan, Malaysia, and Vietnam.

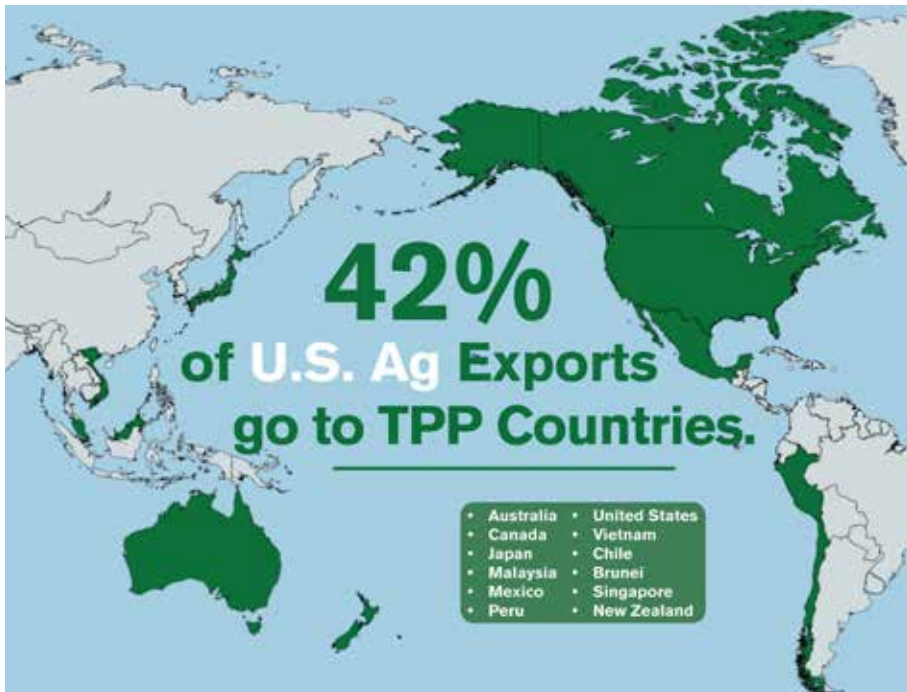
Japan is the third largest economy in the world, but it arguably has the world's most protected agricultural market. Unfortunately, even with TPP it will remain protected, but with much

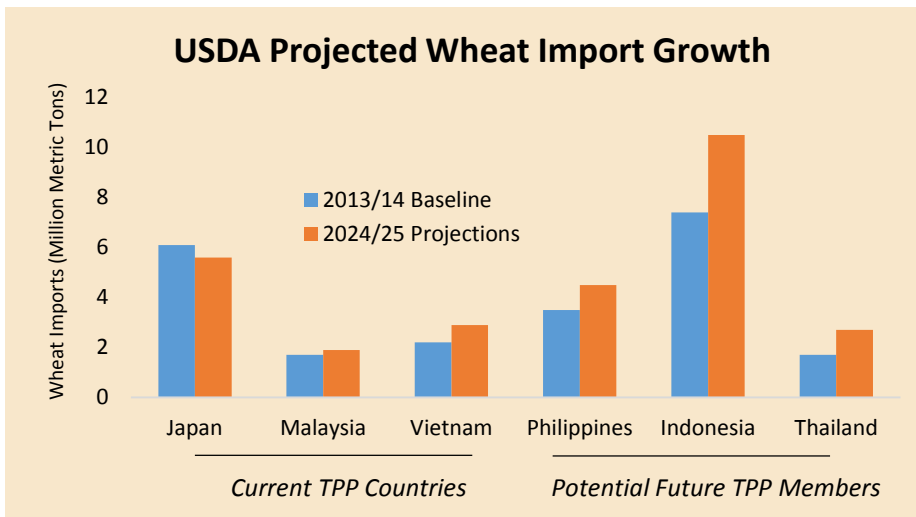
greater access than it has ever allowed in the past. For example, Japan will retain its government monopoly on imports of wheat, but it will reduce the effective tariff – known as the markup – by 45 percent. Since that markup is now almost \$4 per bushel, that's a significant reduction in the prices that Japanese consumers ultimately pay for wheat, and that in turn may lead to increased wheat demand. However, even though it is the United States' largest and most consistent market for wheat, USDA projections expect the Japanese market to decline slightly over the next decade.

Malaysia and Vietnam, on the other hand, have great potential in the coming years. TPP could provide a big boost to these economies, and as income grows so does demand for high quality breads, cakes, and other wheat products made from high quality U.S. wheat, including that produced in Idaho.

Malaysia does not apply tariffs on wheat, but Vietnam does and has negotiated trade agreements with other major wheat exporting countries like Australia, Russia, and Kazakhstan. Ensuring U.S. wheat exports compete on a level playing field with exports from these countries translates into more business and opportunities for Idaho farmers.

Vietnam imports an average of 2.0 million metric tons (MMT) of wheat per year. Approximately 75 percent of that comes from Australia, used to make wheat noodles that are popular in Vietnam. Many countries increase their purchases of bread wheat and lower protein soft wheat as their economies grow and Vietnam has done the same. Sales of U.S. wheat to Vietnam in 2014/15 were a record 273,000 metric tons (MT),





two-and-a-half times greater than last year and the five-year average. Meanwhile, USDA projects a 40 percent increase in total wheat imports by Vietnam in the next 10 years.

But it's not just tariff changes that will be beneficial for wheat exports. It's also the rules of trade. As tariffs have been lowered over the past two decades, governments often find other ways to shield domestic producers from competition, notably through plant health and safety standards that are not based on science. TPP would put rules and mechanisms in place that will make it much harder for governments to play those games. Of course, every government has the right to protect human and environmental health, but in order to get the benefits of this agreement, they need to ensure that those protections are based on sound science and a reasonable risk threshold.

Finally, getting this agreement passed by Congress and signed into law is just Phase 1 of TPP. The next phase is expanding the agreement to cover more of the Asia-Pacific region. Countries like Indonesia, the Philippines, and Thailand are rapidly growing and becoming larger consumers of U.S. agricultural products, including wheat. All have tariffs that can make wheat more expensive for consumers, as well as reduce the returns to the farmers who grow it. As exciting as new opportunities in Malaysia and Vietnam are, USDA projects that each of these potential TPP countries will increase wheat imports by more than those two countries combined.

Farmers in Idaho are looking overseas for the big opportunities that will grow their industry in the coming years. Agreements like the TPP are vital to securing those opportunities. ■

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Looking Ahead: Idaho's 2016 Legislative Session

By John Foster and Kate Haas, Kestrel West

THE Idaho Grain Producers Association is one of the groups most respected by Idaho legislators. Years of diligent outreach, measured insights and trusted advice make IGPA one of the rare organizations with only allies.

While agriculture is always touted as our state's most important industry, our members know their history. Agriculture has not always been as important to our elected leaders as it is today, and only continued engagement in the legislative and political process will assure us that what's important to legislators is based on what's important to our members, our families and our communities.

The last session of the Idaho Legislature was a good example of how that outreach can make a difference. IGPA played an important role on a wide variety of issues:

- **Open Range.** Legislators were impressed by our dialogue and approach with the Idaho Cattle Association, and have pointed to it as a model for other groups to follow.
- **Depredation.** The legislative session brought our concerns into focus and provided a great opportunity raise the profile of the issue for Idaho Fish and Game.
- **Dams.** IGPA supported Rep. Caroline Nilsson Troy's memorial to express legislative support for keeping in place the four dams on the lower Snake River.
- **FFA Funding.** We helped advocate for a big funding boost for this program as well as reinstatement of a full-time FFA director position.
- **CALS.** We worked closely with the lobbyist for the University of Idaho College of Agricultural and Life Sciences to help them receive yet another funding boost from the legislative budget writers.
- **Commodity Fund.** A new law clarifies the role of advisory board members and outlines their responsibilities in the claims process.
- **Primacy.** IGPA was part of a broad coalition on a measure allowing the Idaho Department of Environmental Quality to initiate primacy for the NPDES program.
- **Dust/EPA.** Rep. Gayle Batt helped us resolve this issue with DEQ and the EPA without the need for legislation, providing certainty for our members.

The coming legislative session will be a throwback of sorts, with our elected leaders focusing on three issues familiar to any Idaho citizen and



important to all IGPA members: taxes, education and water.

Gov. Butch Otter's Task Force on Education will have a slate of proposals to continue the reinvestment in our state's education system. A legislative working group focused on tax policy will have proposals and ideas for how to reduce Idaho's income tax rates without making a big hit to the state's budget. And months of work to resolve several long-standing disputes over water are expected to be front and center for discussion when the Legislature convenes January 11.

That last issue was a main topic of discussion when the IGPA board met in October to discuss priorities for the legislative session. It is an issue that highlights the diversity of our membership: We grow grain around Idaho on farmland going back prior to statehood and as new as the last couple of decades. The water rights are just as diverse, which is why IGPA's legislative approach will be focused on making sure that no matter what policy makers decide to do, they make sure there is adequate funding to implement a solution.

That sort of pragmatic, savvy approach is a hallmark of IGPA's legislative agenda. In the coming session the organization will also be helping pass a bill and set of rules to help the Idaho Wheat Commission be prepared for the future and have the information it needs to serve IGPA members and our industry.

We will also spend time in the coming months working with legislators and the Idaho Department of Fish and Game to improve the agency's implementation and awareness campaign around Idaho's new trespass laws. Our members are very clear: We want the state to protect our interests, too – not just the interests of sportsmen.

There will be other issues to come. You can look forward to regular updates as the legislative session begins, progresses and winds toward what should be a quick conclusion. After all, 2016 will be an election year, so make sure you take the time to remind your legislator that IGPA members care about important issues, and that those IGPA members vote! ■



Changing Weather



By Cindy Snyder

JOE Anderson's dad used to have a saying that seems apropos to what wheat growers across Idaho have been experiencing the last few years. "My dad's been gone for three years," Anderson said, "but he used to say, 'The last normal weather year in farming was the one before I started.'"

Whether it's hot and dry in north Idaho or soggy in southeastern Idaho, grain growers have faced a number of challenges from Mother Nature lately and the forecast indicates more are on the way.

But as the north Idaho wheat farmer points out, that's nothing new. "Farming takes a lot of faith," Anderson said.

WHAT'S CAUSING THE WACKY WEATHER?

While a debate rages in some circles about whether the unusual weather patterns are caused by a two-year mega El Nino or global warming, Art Douglas takes a slightly different approach. He classifies both phenomenon as climate change along a continuum.

El Nino is short-term climate change, the decades-long weather patterns (remember the '70s?) is medium-term climate change and increases in atmospheric carbon dioxide is a long-term climate change, really long-term

(think hundreds or even thousands of years).

With that in mind, Douglas blames the El Nino that began in the spring of 2014 for the weird weather Idaho has been experiencing. He's a professor emeritus of the Department of Atmospheric Sciences at Creighton University and a frequent speaker at PNW agricultural events.

Other forecasters are also calling for a strong El Nino this winter and are drawing comparisons with 1982 and 1997, two events Douglas calls mega El Ninos. In 1982, the Pacific Northwest experienced mean temperatures 1 to 3 degrees below normal while the opposite was true 1997. In June 1982 the eruption of El Chichon led to a stratospheric dust veil that cooled the planet and led to the development of El Nino. The mega El Nino of 1997 developed in the old fashioned way. This water year began with warm temperatures in October but colder than normal the first half of November.

Statistically, the PNW is more subject to drought in El Nino years. "The stronger the El Nino, the worse the drought gets," Douglas added. Although sometimes strong mega El Ninos bring large storms to the Pacific Coast spreading moisture from California into western portions of the Pacific Northwest.

One difference between 1982 and 1997 and this winter is that the '82 and '97 El Ninos lasted just one year, and this one has persisted for two years.

Still, Douglas sees signs that it will end.

El Nino is associated with warmer than normal equatorial Pacific Ocean temperatures. All of the models last year showed sea temperatures cooling back to normal in 2015, which would have ended El Nino. Instead, sea temperatures reached the third warmest on record and the El Nino intensified. Those hot temperatures spilled over to warm the Indian Ocean and the tropical portions of the Atlantic Ocean as well.

Given that water covers three-quarters of the earth's surface, it makes sense that if those waters have been warming for two years, then land temperatures will also warm. And that's what we've seen, Douglas said.

The trick is separating out what portion of the hot temperatures are related to El Nino and what percentage can be assigned to increased levels of greenhouse gases. His educated guess is that about half of it can be blamed on El Nino and 30 to 40 percent on increased carbon dioxide levels.

"Global warming doesn't just pop up," Douglas said. "It's a very long, very slow process."

Douglas is pessimistic about the prospects for a good snow year in Idaho's Panhandle or western Montana/Wyoming where the headwaters of the Snake River are located.

El Nino, on the other hand, can develop or weaken relatively quickly. Douglas sees evidence that a wave of cold water is building behind the warm water in the Pacific which could cool temperatures by a half degree and begin breaking down the El Nino by spring.

What does that mean for 2016 and 2017? Douglas is pessimistic about the prospects for a good snow year in Idaho's Panhandle or

western Montana/Wyoming where the headwaters of the Snake River are located. That likely will mean a tight irrigation season for much of southern Idaho and a continuation of the drought in north Idaho.

The weakening condition of El Nino this upcoming spring indicates dry conditions are likely to persist across the eastern half of the PNW but by the summer, El Nino effects will end with precipitation returning to near normal levels. More importantly, the probability of a wet winter in 2016-17 is quite good as La Nina is likely to develop.

Beyond that, Douglas again becomes more pessimistic. Looking at years of data on sea temperature oscillations, it appears that the 2014-16 El Nino may mark the shift into a new decadal climate period. Just as the late 1940s and '50s were largely wet across the PNW before shifting to a hot, dry period from the mid-1970s to mid-'90s, before morphing back to cooler and wetter starting around 1994; it appears that the next decade — or two — may be hot and dry like the '70s were.

WHAT TO DO?

Gordon Gallup remembers growing up in the '70s including the Thanksgiving he was rabbit hunting in a short-sleeved shirt. In the mid-'90s when he moved his family full-time to their Swan Valley farm, his older kids missed lots of school because of snow days. His younger kids never got to experience that pleasure.

While the mountain snowpacks have been dismal the last few years and he knows his fellow farmers who rely on the Snake River for their irrigation water are facing shortfalls again, it's hard to think of drought on his dryland farm in southeastern Idaho. From August 1, 2014, to August 1, 2015, his region received 27 inches of moisture; just above the greatest annual precipitation to fall there since 1961 (26.84 inches in 1993).

It's not just rainfall that's been abundant lately, but warmth also. Killing frosts that usually arrive in late August to mid-September held off until the first of November. That allowed even volunteer grain to mature this fall.

Climate Snapshots From the Last 50 Years

	LEWISTON	SWAN VALLEY
Precipitation		
1948 to 2014 ave.	12.62 in.	n/a
1960 to 2014 ave.	n/a	18.00 in.
1961 to 1990 ave.	12.44 in.	17.04 in.
1971 to 2000 ave.	12.78 in.	18.26 in.
1981 to 2010 ave.	12.31 in.	19.12 in.
Wettest year	18.72 in. in 1950*	26.84 in. in 1993
Driest year	7.73 in. in 2007	10.66 in. in 1966
Highest Monthly Total	4.8 in. May 1948	7.51 in. June 2009
Mega El Nino Years		
Precip Total		
1982	12.44 in.	20.79 in.
1997	15.06 in.	22.50 in.
2014	12.11 in.	23.63 in.
2015 (through Oct.)	7.52 in.	20.78 in.
High Temperatures		
Average Max Temp		
1948 to 2014	63.2 deg F	n/a
1961 to 2014	n/a	56.6 deg F
1961 to 1990	63.3 deg F	56.7 deg F
1971 to 2000	63.2 deg F	56.5 deg F
1981 to 2010	63.6 deg F	56.7 deg F
Hottest Max Temp	115 deg F in Aug. 1961	101 deg in June 1988, July 1989, & Aug 1990
Mega El Nino Years Hottest Maximum Temp		
1982	105 deg F in Aug	95 deg F in Aug
1997	105 deg F in Aug	90 deg F in July & Aug
2014	106 deg F in July	90 deg F in July
2015 (through Oct.)	111 deg F in June	94 deg F in June
Cold Temperatures		
Average Min Temp		
1948 to 2014	41.9 deg F	n/a
1961 to 2014	n/a	28.3 deg F
1961 to 1990	42.1 deg F	27.1 deg F
1971 to 2000	42.5 deg F	27.8 deg F
1981 to 2010	42.8 deg F	29.3 deg F
Coldest Month	-22 deg F in Dec. 1968	-43 deg F in Jan. 1963 (also Jan. 1950)
Mega El Nino Years Lowest Minimum Temp		
1982	-4 deg F in Jan.	-36 deg F in Feb.
1997	11 deg. F in Jan.	-11 deg F in Dec.
2014	-4 deg F in Feb.	-15 deg F in Dec.
2015 (through Oct.)	11 deg F in Jan.	-15 deg F in Jan.

*If using just the 1960 to 2014 data, the wettest year is a tie at 15.44 inches in 1971 and 2012.

SOURCE: WESTERN REGIONAL CLIMATE CENTER



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"It's a strange weather pattern," Gallup said. He has sheep grazing on volunteer barley that was completely headed out. Should he have sprayed it to reduce stripe rust or other pest problems next year? Maybe. But it's hard to spend money to treat a pest problem that usually winterkills.

"It's way out of the norm for everyone around here," he explained.

But extension specialists worry that what's unusual today will become the new norm of tomorrow, changing the environment farmers plant into.

Juliet Marshall, UI Extension cereal pathologist, worries not just about more frequent and heavy infestations of stripe rust or the aphids that vector barley yellow dwarf virus in southern Idaho but also how a hotter, drier climate may impact already stretched water supplies.

"Higher temperatures also allow plants to be active longer, which means more ET (evapotranspiration) into the fall," Marshall said.

Warmer winters also mean plants break dormancy as early as February and begin drawing water from already depleted soil moisture reserves, which creates a mini-drought situa-



Joe Anderson, Genesee

tion before irrigation water can be turned in. Plants tiller less when it's dry but then put on new tillers later when spring moisture is available; essentially creating a two-crop situation in the field. Marshall saw that very scenario in many southeastern Idaho grain fields last spring.

In north Idaho, Doug Finklenburg is also seeing the effects of depleted soil moisture. The region is 1 to 3.5 inches behind normal for precipitation, depending on elevation. Two dry years in a row have shrunk yields and

exacerbated the effects of stripe rust or root rots. When water is plentiful, plants can outgrow some disease pressure that they can't offset as easily when their roots are working hard to extract what little moisture is present.

It the hot and dry conditions persist for too many years, Finklenburg envisions some growers on the Palouse switching from annual cropping systems to wheat-fallow systems like their counterparts in eastern Washington. He is the UI Extension educator in Nez Perce County.

And that could create another problem for growers: a dwindling market for their grain. Hot, dry weather tends to push up protein levels

in wheat. That's good if you're a dark northern spring grower in Montana but not if you're raising soft white winter wheat for export markets.

One strategy he sees to help offset the potential impacts of a long dry, hot period is to build soil organic matter. Research shows that each 1 percent boost in soil organic matter can increase the soil water holding capacity by 1 inch.

Joe Anderson is taking that approach by using direct seed technology on his Genesee farm. He doesn't plan to change his cropping rotation because of the last two years of drought nor the prediction of another dry year to come.

Farming is like predicting the weather, it's not an exact science, he said. "We're counting on average."

Gallup has much the same approach. While he knows that Marshall is recommending that growers plant varieties with better pest resistance or drought tolerance, or changing planting dates to avoid pest problems; he had more problems with varietal issues and falling numbers this year than pests.

That's not to say he's not looking at his options but "when you farm at six thousand feet, there's not a lot you can do about planting date. I plant the date I can get in the field," he said. He is also using direct seed practices.

Both he and Anderson are taking a similar approach to potential climate changes: Manage everything they can manage and let Mother Nature take care of the rest. ■

MARK YOUR CALENDAR • Wednesday, February 24, 2016 • Shiloh Inn • Idaho Falls

South Idaho Direct Seed Workshop

The Direct Seed workshop is a one day educational event for growers who are thinking about direct seeding or have taken the plunge and are looking for new ideas, technology, science and networking opportunities.

The 2016 Direct Seed Workshop topics will include: Cropping systems, Resistant weeds in no-till cropping systems, Rodent/pests, Disease control, and a Grower's panel where direct seed farmers share their on-farm experience with direct seed, what worked in their operations and, equally valuable, what they changed over the years.



Save the date! More information on this year's agenda will be available soon. The Workshop is sponsored by the Idaho Wheat Commission. Contact Teresa Waterman at ts@idahowheat.org



Working Together

A team of three: IWC, OWC, WGC

By Glen Squires, CEO Washington Grain Commission

IF you've ever watched a juggler keeping a series of balls in the air, then you have an idea of how market development works. It also has many moving parts and just as in juggling, success demands not dropping anything!

Although the Pacific Northwest's three wheat and grain commissions frequently work together, recent efforts to sell more of our preeminent soft white wheat class into Colombia has been a real team effort. Beginning almost a decade ago, the country has seen regular visits from representatives of each PNW commission.

The effort started in 2007 when Hans Hayden, then a commissioner on the Idaho Wheat Commission, and I, met with millers and government officials in Colombia to learn more about how the Colombia/Canada Free Trade Agreement, then under negotiation and signed in November 2008, would affect our exports to the country. As expected, U.S. wheat exports shrank dramatically.

President Obama's signing of the Colombia/ U.S. Free Trade Agreement in October 2011, however, put us back on a level playing field and interest



MARCIO SILVA/ISTOCK/THINKSTOCK

in soft white wheat imports grew with Colombian trade teams visiting the Portland-based Wheat Marketing Center and each of the PNW states.

For several years, PNW commission representatives have also been at-



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tending U.S. Wheat Associates'-sponsored Latin American Buyers Conferences (LABC). While these conferences allow us to highlight the value of the soft white class as well as provide supply/demand information, they are perhaps most important in affording us the opportunity to meet one-on-one with buyers.

At the LABC in Bogota, Colombia, Blake Rowe, CEO of the Oregon Wheat Commission, and myself, met with several Colombian representatives interested in buying soft white. At a subsequent conference in Costa Rica, Andrea Saturno, the milling consultant hired by the three state wheat commissions, provided information on the economic and end-use benefits of blending soft white wheat with the hard wheat classes.

Ultimately, arrangements were made to send container-size wheat samples. That led to larger shipments which were used effectively for cookie production. A further follow up included the WGC and a PNW grain trader working with the USW Santiago, Chile office to address logistical challenges in getting grain to both Colombia and Ecuador.

As part of that trip we stopped at Compania de Galletas NOEL S.A.S (NOEL). The company has four production plants for biscuits and crackers in Colombia with a 55 percent market share in the country. Company officials said soft white was working perfectly for biscuits (cookies), but it wasn't doing so great for crackers. Since shutting down the commercial line for testing to find the right formulation was not an option, the plant manager said he'd have to continue to use soft red winter wheat.

This is just the kind of situation the PNW wheat commissions envisioned when leadership voted to invest in a pilot scale cracker and biscuit line at the Wheat Marketing Center. Working with USW's Santiago office, as well as USW's Arlington, Virginia office, arrangements were made to sponsor NOEL's Carlos Mario Montoya, Manager of Research, Development and Innovation and Jorge Andres Gallego Restrepo, technical director, to spend a week at WMC conducting formulation tests on the pilot line.

Their goal was not only to solve quality problems with cracker production, but also to find alternatives to reduce DON (vomitoxin) contamination being found in soft red wheat. That's because many of the products NOEL produces are shipped to Europe which has adopted a 1 ppm DON acceptance level. The pair also hoped to come away with new knowledge to improve their process controls.

To get the most out of the effort, USW paid to bring in Terry Knabe, a



Carlos Mario Montoya, Manager of Research, Development and Innovation at Compania de Galletas NOEL S.A.S, a Colombian company specializing in cookie and cracker production, (left) creates a formulation at the Wheat Marketing Center with Gary Huo, technical director and wheat food specialist for the WMC.

biscuit consultant with 45 years of experience working around the world. Art Bettge, a cereal chemist formerly with the Agricultural Research Service in Pullman, provided milling and baking expertise for soft white.

The superior performance of soft white is hard to overstate. Many product manufacturers routinely add expensive enzymes to the flour they buy to get the flour performance they desire. So when Knabe recommended the Colombians try making crackers without any enzymes, they didn't think it was possible and were amazed when it worked.

NOEL is part of the larger Grupo Nutresa, the 4th largest food company in Latin America. Grupo Nutresa has 37 manufacturing plants in 11 countries with products sold in 72 countries on five continents. In addition to the four NOEL production facilities in Colombia, the company also has one in Costa Rica and owns Fehr Foods in USA, (Lil' Dutch Maid is one of its brands). Together, Grupo Nutresa has a combined 28 production lines for 7 types of crackers, 16 sweets (cream, wire cuts, bagged and plain), 4 wafer and one pastry line. The company also has two flour mills in Colombia.

After Montoya and Gallego's week of experience on the pilot cracker and biscuit line at the WMC, they could see that soft white would work in their products. In fact, Montoya felt a slow transition to soft white was in the



Colombians Carlos Mario Montoya, (left) Manager of Research, Development and Innovation and Jorge Andres Gallego Restrepo, technical director at Compania de Galletas NOEL S.A.S, spent a week at WMC conducting formulation tests on the cracker pilot line using soft white wheat formulations. They were impressed by the performance of the class and hope to convert to soft wheat for their needs.





PNW wheat growers, including Idaho District 2 Commissioner Bill Flory, recognize Latin America miller Molinos Modernos for their substantial purchases of soft white wheat from the PNW states.

best interests of the company and he talked of a long future with the PNW. To confirm that point, plans are already underway for additional NOEL employees to come to Portland for “customized” training. As the men explained, it’s one thing for them to be convinced. To be successful, they want purchasing, manufacturing and research and development employees all to be on the same page.

The three commissions also joined forces to ship two container samples to Colombia and Ecuador this fall. Knabe, Bettge and Didier Rosario, a USW baking consultant, were all on site when the samples were milled and products were made to provide technical assistance. The men also spent time training Colombians at the country’s largest flour mill as well as at its largest biscuit company.

Although the WMC has had other validating experiences since the \$560,000 pilot line was built and installed in 2014, it felt good to have Carlos call it, “The most beautiful pilot cracker line in the world,” not to mention have it serve such a critical role.

PNW wheat commissions along with our partner, USW, are putting increased time and effort into Latin American markets. I believe the Colombian experience shows our determination is paying off and it’s not only soft white that will benefit.

Once the Northwest becomes Colombia’s regular port of call, we also believe we can convince them to purchase the high quality hard red winter and hard red spring wheat grown in the region and nearby. Now, that’s juggling market development! ■



Six formulations were ultimately developed during the Colombian’s weeklong stay at the Wheat Marketing Center. The No. 4 formulation was judged best.



At the end of their time at the Wheat Marketing Center, the Colombian team created a PowerPoint presentation to highlight what they had learned during the process. Around the table from left are: Carlos Mario Montoya, Manager of Research, Development and Innovation and Jorge Andres Gallego Restrepo, technical director for Compania de Galletas NOEL S.A.S; Steve Wirshing, vice president and director of the Portland office of U.S. Wheat Associates; Shawn Campbell, assistant director of the USW Portland office; Tom Zelenka, WMC board member; Blake Rowe, CEO of Oregon Wheat; Tana Simpson; associate administrator at Oregon Wheat and Gary Huo, technical director and wheat food specialist for the WMC

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The Clearfield Plus Advantage:

UI and LCS bring new CL+ varieties to market swiftly

By Zach Gaines, Marketing Manager, Limagrain Cereal Seeds

THE wheat breeding collaboration between the University of Idaho (UI) and Limagrain Cereal Seeds (LCS) continues bringing to market new, exciting varieties for Pacific Northwest farmers. The most recent fruit from this public/private partnership comes in the form of three new soft white winter wheat Clearfield Plus varieties.

UI Magic CL+, UI Palouse CL+ and UI Castle CL+, bred by the University of Idaho, were among a group of eight different varieties trialed in the Pacific Northwest this season that designated as “CL+” varieties. The university’s partnership with LCS has given the three Clearfield Plus varieties a massive commercial launch into the marketplace, both in terms of speed and distribution. A very ambitious production strategy for each of the new lines was undertaken by LCS, which included the management of herbicide tolerance evaluations and production of breeder and foundation seed stocks. The results of this dynamic approach will put the three new varieties in the hands of farmers all over the Pacific Northwest at least two years earlier than a traditional commercial launch.

The Clearfield (CL) system is a non-GMO weed control tool developed by BASF. The original CL system (1-gene technology) gave farmers the ability to control a broad spectrum of weeds with the Imazamox herbicide, sold under the trade name Beyond. While the CL technology has proven an effective weed control option for growers, crop injury is often associated with spray overlap, stress conditions and cool, wet weather following applications of Imazamox. The 1-gene technology also did not allow growers the option of using all available adjuvants to increase the effectiveness of the herbicide. The new Clearfield Plus (CL+) system has imparted a much higher level of crop safety from applications of Imazamox herbicide, in addition to giving growers the option of adding oil-based adjuvants like methylated crop oils (MSO) or crop oil concentrates (COC) to their spray mixes. Seed dealers across the Pacific Northwest are very excited to have three new SWW wheat options in their lineup that contain the 2-gene CL+ technology.

UI Magic CL+ performed exceptionally well in the 2016 trials, taking first place in both the Moro and Pendleton/Ruggs locations of the OSU Clearfield performance trials. In southern Idaho, yield performance averaged 131.7 bu/ac across all irrigated trial sites and 49.9 bu/ac in the Ririe



dryland location. In northern Idaho, the average yield was 97.6 bu/ac across all sites. UI Magic CL+, a medium-early maturing wheat, demonstrated good winter-hardiness and a wide adaptation across the Pacific Northwest.

UI Palouse CL+ netted an average yield of 74.6 bu/ac in the OSU Clearfield performance trials this season. In southern Idaho, yield performance was 126.0 bu/ac across all irrigated sites and 48.9 bu/ac at the Ririe dryland location. In northern Idaho, the average yield was 97.8 bu/ac across all sites. UI Palouse CL+ is well adapted to northern Idaho, has a medium plant maturity and excellent straw strength.

UI Castle CL+ another good yielder, came in at 52.3 bu/ac, at the Ririe dryland location. Castle was right behind Magic at 120.7 bu/ac across all irrigated sites in southern Idaho. Overall, it had an average yield of 69.0 bu/ac in the OSU Clearfield performance trials. In northern Idaho, the average yield was 86.4 bu/ac across all sites. UI Castle CL+ has shown the best dryland adaptation of the three varieties, has good resistance to stripe rust, and produces high test weight grain.

All three new UI CL+ varieties will be available to growers for planting in 2016. Contact your local seed dealer for details. ■

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UI Palouse CL+

Contact Pacific Northwest Farmers Cooperative in Genesee, ID (208-285-1141)

PNWFC in Steptoe, WA (509-397-4664)

UI Castle CL+

Contact Mid Columbia Producers, Inc. in Moro, OR (541-442-5555)

UI Magic CL+

Contact Mid Columbia Producers, Inc. in Moro, OR (541-442-5555)

Northwest Grain Growers of Walla Walla, WA (509-525-6510)




<p>UI Magic CL+</p>  <p>It's No Illusion</p>	<p>UI Palouse CL+</p>  <p>Bred for Your Backyard</p>	<p>UI Castle CL+</p>  <p>Defend Your Fields</p>
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PHOTO: ANNA BERKUTISTOCK/THINKSTOCK

Idaho Wheat Producers Support Future Leaders with Scholarships

FOR the past three years, the Idaho Wheat Commission has been awarding distinguished students from across the state with scholarships at the University of Idaho and Utah State University. “It’s our goal to raise up a future generation of agricultural leadership,” said Idaho Wheat Commission Chairman “Genesee Joe Anderson. “This year’s scholarship recipients are all outstanding students. We are fortunate to have such a distinguished group of young people who are committed to work in all aspects of agriculture.”

Scholarships were awarded to three students enrolled in the College of Agriculture and Life Science programs at the University of Idaho. Each student received a \$2000 scholarship.

Three Students from southeastern Idaho were awarded a \$2,000 scholarship to Utah State University’s College of Agriculture and Applied Sciences.

University of Idaho Scholarship Recipients



ALLISON STEVENS grew up in the heart of downtown Boise, without a single agricultural opportunity until high school. Her freshman year of high school, she was recruited for a Career Development Event in FFA, and she found herself surrounded by Ag. “I had no idea how passionate I was about agriculture, until I was exposed to it through my involvement with FFA,” said Allison. “I continued to learn and grow so much; going to nationals to compete in Natural Resources, winning State Envirothon,

and raising several lambs and steers for the Western Idaho Fair. All of those experiences have made me who I am today.”

Now a sophomore at the University of Idaho, Allison finds herself falling in love with Animal Nutrition and Plant Science. “The Idaho Wheat Commission scholarship means so much to me as it secures my place at the University, and means the difference between continuing my education, and dropping classes to get a third job.”

Now that Allison has found her passion, she intends to follow it. She is currently pursuing a Bachelor’s Degree in both Agricultural Systems Management and Agricultural Science; while also utilizing her time on campus to get involved and grow as a student and a leader. She is the National Communications Coordinator for the University’s Residence Hall Association – a position which has taken her across the United States, which is helping her

develop strong leadership skills. When not traveling, Allison is involved in several clubs, including the Plant and Soil Science Club, the Dairy Club, and CFFA – all of which give her ample resources for learning and networking.

“It’s organizations like the Idaho Wheat Commission which have helped me by providing scholarships that have allowed me to progress in college. It is my goal in life to become a Dairy Manager; to start my own herd – and perhaps the most important aspect of such a goal is animal nutrition. Healthy animals produce better quality milk at a higher yield; which is why I am now devoting myself to study agriculture and crop science, so that I can fully understand the value of commodities like wheat in feeding my animals. I am so glad to be a student of Ag, and I am so grateful that the Idaho Wheat scholarship is helping me on my way!”



CHYLA WHITED developed an interest in agriculture through her involvement with the Meridian FFA during high school. FFA helped Chyla learn about Idaho’s agricultural industry, and ignited her desire to continue her education in agriculture. The University of Idaho was her first choice because of its involvement in Idaho agriculture, and the great programs the College of Agricultural and Life Sciences had to offer.

Chyla is a sophomore studying Agribusiness with a minor in Political Science. Her goal is to continue on to law school, with the hopes of someday practicing law for the agricultural industry. “I am hoping that this will give me a helpful voice for Idaho’s agricultural industry, and allow my work to be beneficial to something that is extremely important to me,” said Chyla. “Someday, maybe I will even be able to lobby at the capital for Idaho agriculture, or even run for a political office. Agriculture is a great industry, with great people that do so much to provide for everyone in this world, I would like to be able to give them a louder voice where the consumer is even farther from the farm.”

When Chyla was notified that she had received the Idaho Wheat Commission scholarship, it was a huge blessing and encouragement. She is grateful to have received the scholarship as it helps her stress less about money for school, and is a huge help in allowing her to have more time to get involved in the college. Now Chyla can focus more on giving back and gaining the most from classes and experiences available at the University of Idaho.

She is already extensively involved in her college, where she serves as the Treasurer of the College of Agricultural and Life Sciences Student Affairs

Council, and is a member of the Collegiate Farm Bureau club on campus. According to Chyla, the best part of having more time to get involved in supplementary education outside the classroom has been meeting so many people in this field that really help the industry come to life. The scholarship has allowed Chyla to worry less about spending time trying to find money for her schooling, and instead opened a door for her to take that time and apply it to grow, learn, and explore all that Idaho's agriculture has to offer.



SARAH CURET is very grateful to have been chosen as a recipient of the Idaho Wheat Commission Scholarship. She is a sophomore and proud Vandal at the University of Idaho. She transferred last year from North Idaho College in Coeur d'Alene and quickly found her niche in the Horticulture program and is also working towards a minor in Crop Sciences.

Sarah was raised in beautiful Salmon, Idaho but was born in Moscow when her parents were both attending the U of I. From a young age she always felt a pull back to the rolling hills of the Palouse. Attending the University of Idaho and living in Moscow is the fulfillment of a childhood dream.

Receiving the IWC scholarship means a great deal to Sarah, "Paying my own way through college, although immensely gratifying, can at times impart a great deal of stress on my life due to financial worries which detract from my studies," said Sarah. "I am currently working two jobs (a reduction from three during my previous two semesters) to support myself as I attempt to reduce the number of loans needed to pay for school and housing. When I received the email with the news that I received this scholarship, an immeasurable amount of stress and weight was lifted from me!"

The generosity of the Idaho Wheat Commission scholarship will allow Sarah to have more time to devote to her studies and she hopes that she will now have the time to become more involved with her college. "The experience that I can gain from clubs and attending college events will have a great effect on my future as well, shaping my skills and experience that I can take with me into my future career."

Sarah said, "I am deeply grateful for the support of the Idaho Wheat Commission and for the opportunities given to me through financial support of this scholarship and hope that with the gift of education that comes from this scholarship, that in the future I will be able to return the freedom from financial stress to a student of agriculture."

Utah State University Scholarship Recipients



JORDAN BEUTLER comes from a farm in Dayton, Idaho that raises wheat, seed potatoes, dry beans and other rotational crops. Learning principles of hard work, honesty and responsibility at a young age, Jordan wouldn't trade his upbringing for anything. After graduating as salutatorian from West Side High School, and spending time on a service mission in Ukraine, he is now headed into his third year of university studies. Majoring in Plant Science with a minor in the Russian language, Jordan

intends to be involved with production agriculture. Jordan said, "The help of the Idaho Wheat Scholarship has been unequivocal. Receiving such help

is humbling, but incubates a strong desire to pay it forward in my future. It permits me to have a balanced life as I attend Utah State University, explore career opportunities, and compete in cross-country and track & field."



JONATHAN BLAKELY is a senior at Utah State University working on a degree in Animal Science and Agribusiness with a minor in Agronomy. He was born and raised near Heise, ID on a working cattle ranch and farming operation. His passion has always been cattle and stock horses. Reproduction, improving genetic lines and breed qualities, nutrition, and range management and improvements are key passions. Jonathan also enjoys farming and being involved in crop production.

"Since a very young age I have been involved in agriculture and the wheat industry," said Blakely, "I have spent a good deal of time in most aspects that the wheat industry entails: from tilling, planting and irrigating, to fertilizing, harvesting, and storage. I have worked for many large farms to help with grain harvest, putting up straw after harvest, fieldwork and planting." Jonathan worked for several years at a grain elevator, and was able to see the storage, marketing, and shipping side of the business.

Jonathan's goal after graduation is to return to agriculture and the ranching industry. He plans on raising grain in rotation with other crops, and is committed to help the industry grow. Jonathan said, "There are few things that bring equal satisfaction as knowing that your labors are directly involved, even to the smallest degree, to helping others and providing food for the world. Watching life spring forth from your hands and grow into something so needed is deeply satisfying. Thank you for your contribution to my future."



COURTNEY BENNETT grew up in Grand View, Idaho where her family has a cattle and farming operation where they raise wheat, alfalfa, sugar beets, and field corn. Courtney loved being involved in both the animal and crop aspects of the farm, and because of that involvement, she has a huge appreciation for the industry.

Courtney said, "I found my passion for animals on my family's farm, raising my own flock of sheep and helping with the cows. I am currently a senior at Utah State University, majoring in Bioveterinary Science with minors in Chemistry and Biology and I will graduate in May 2016." Courtney has applied to veterinary school this past summer and hopes to start in the fall of 2016. She is an Ambassador for the College of Agriculture and Applied Sciences, as well as a Peer Advisor and Peer Mentor. She has an off campus job working as a Veterinary Technician in a local mixed animal practice.

"My plan after veterinary school is to return to Idaho and practice a mixture of large and small animal veterinary medicine. Without the help of scholarships like this one, I wouldn't be able to afford my education, so thank you," said Courtney. ■



Field day participants take the opportunity to examine what's under their feet and learn how it is linked to the productivity and management of Palouse region soils.

Soils of the Palouse Highlighted for 2015 International Year of Soils

By Paul McDaniel and John Hammel
University of Idaho Soil Scientists

THE United Nations designated 2015 as the International Year of Soils. This theme was emphasized by University of Idaho soil scientists Paul McDaniel and John Hammel at the 2015 University of Idaho/Limagrain Field Day held July 9 at the UI Parker Farm in Moscow. McDaniel and Hammel showcased the Latahco soil, one of the major soils occupying lower-lying landscape positions in the Palouse region of northern Idaho and eastern Washington. Field Day attendees had the opportunity to view the

soil up close using a 6-foot-wide, 30-foot-long, 5-foot-deep soil pit prepared for the event.

HISTORY OF THE PALOUSE SOILS – ICE AND WIND

According to Paul McDaniel, Palouse region soils are a product of the last Ice Age. Rock flour, generated by the grinding action of glaciers found to the north of the Palouse region, was deposited in central and eastern Washington by glacial melt waters and floodwaters. The silt-sized (0.00008-0.002 inches or 0.002–0.05 millimeters in diameter) material, known as loess, was eventually picked up by the wind and carried in an

easterly direction into the area referred to as the Palouse region. After these great dust storms, the land surface would stabilize and vegetation would reestablish, allowing soils to form in the loess deposits. Another glacial cycle would then trigger another great influx of dust, burying the previous soils and eventually allowing a new soil to form. This sequence of events was repeated many times during the Ice Age, giving rise to a modern-day Palouse landscape that consists of a stack of old soils known as paleosols.

THE LATAHCO SOIL PROFILE

An up-close look at the Latahco soil reveals a

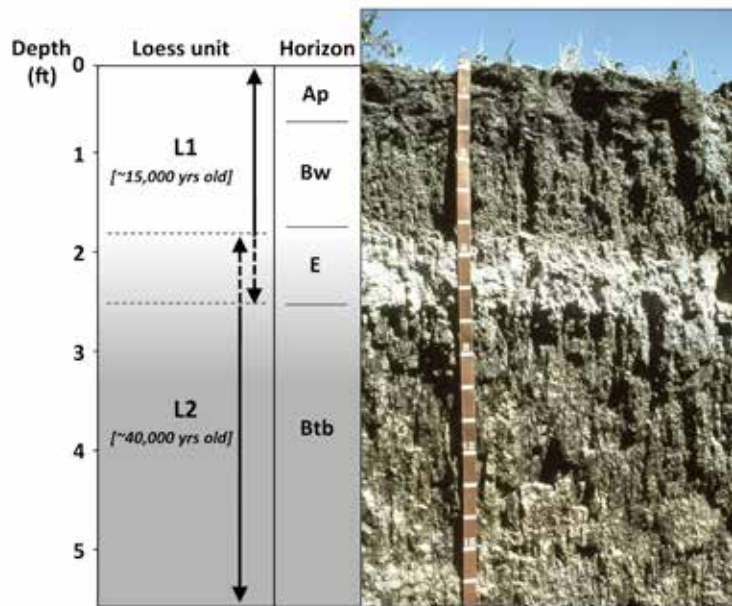
number of properties that are common to many other Palouse region soils. The Latahco soil can be considered a multigenerational soil – it actually consists of two distinct soils of differing ages (right). The top 2½ feet of soil has formed in the youngest loess layer (L1) and is estimated to be about 15,000 years old. The lower part of the soil profile is a buried paleosol that is estimated to be approximately 40,000 years old (McDaniel and Hipple 2010). Several layers or horizons are clearly visible. An *Ap* horizon represents the surface layer that has been recently plowed. A *Bw* horizon is below the tillage layer and is the zone where hard tillage pans can form in these soils. A light-colored *E* horizon represents a leached-out zone that contains a perched water table for 6-8 months of the year. The *E* horizon is underlain by a *Btb* horizon that is part of the 40,000-year-old paleosol that has been buried by younger loess. It is very dense and very slowly permeable, creating the perched water table and restricting root development.

SOIL PRODUCTIVITY

The history and nature of the Palouse soils have a direct bearing on their suitability for agricultural production. The silt-sized particles that dominate the soils are the optimum size for maximizing the amount of plant-available water that can be stored in the soil. Each foot of a typical Palouse soil can store approximately 2½ inches of plant-available water. This water storage coupled with some well-timed spring rains produces some of the highest dryland winter wheat yields in the world. The productivity of the Latahco and similar soils figured prominently in the decision to locate 2 land-grant institutions, University of Idaho and Washington State University, in the Palouse region.

MANAGEMENT CONCERNS

Unfortunately, silt-sized particles are very susceptible to erosion by wind and water. The combination of hilly Palouse topography, silty textures, and lack of significant plant cover during winter when the majority of precipitation is received results in some of the highest historical rates of water erosion documented in the United States. On steeper slopes, annual losses of as much as 200 tons per acre were observed prior to the adoption of better conservation practices (US Dept. of Agriculture 1978). This rate of soil loss was equivalent to losing the top 1½ inches of soil across an entire acre of land each year. However, the transition to conservation tillage practices in the region has substantially reduced soil erosion



The Latahco soil profile has several distinct layers or horizons. Like many Palouse area soils, the Latahco soil is a multigenerational soil – it has formed in 2 different-aged loess deposits, L1 and L2. Each division on the photo scale represents 4 inches.

over the past several decades.

Silt-sized particles are also susceptible to compaction. Silty soils such as Latahco will readily compact under tractor and implement traffic, particularly when moist or wet. The Latahco's lowland position, combined with its very slowly permeable *Btb* horizon, makes this soil quite wet during normal springtime farming operations. Since drainage in lowland positions is quite slow during the spring, perched water tables can exist within 0.5 to 1 ft of the soil surface into May in the Palouse. Capillary rise above the water table generally keeps the soil surface water content at or near the level that is optimum for compaction during the normal period of tillage operations.

In constructing a foundation for a road, engineers require this level of wetness to achieve maximum compaction. Conversely, tillage or heavy-axle load traffic on wet soils can lead to soil physical conditions that markedly limit crop productivity. According to John Hammel, examples of compaction from large implement or heavy-axle tractor traffic include tillage or plow pans and deep subsoil compaction below the normal depth of seeding. Tillage pans can reduce root growth into the subsoil layers, thereby limiting water and nutrient uptake. Compacted surface layers also limit infiltration of water, thereby reducing stored soil water, and potentially increasing runoff or causing poorly aerated conditions conducive to root diseases and decreased root function. Deeper soil compaction from heavy tractor or implement traffic during wet soil conditions decreases soil porosity, increases soil strength, and reduces subsoil water

permeability – conditions which will only worsen the wet spring soil conditions in later years and limit field productivity. The primary challenges for producers, Hammel said, are scheduling field operations to limit field traffic until more optimal soil water content conditions exist and selecting equipment to limit heavy-axle loads or ground pressures when soils are wet. It is much easier and less costly to avoid compaction rather than to remediate it, particularly subsoil compaction.

FUTURE CONSIDERATIONS

The Latahco and related soils are the basis for the success of agricultural systems in the Palouse region. These productive soils have formed over the course of tens of thousands of years, and should be considered a critical and non-renewable natural resource. Erosion and compaction threaten the health of these valuable soils. Widespread adoption of effective conservation practices such as contour tillage, minimal tillage, the use of cover crops, and spring cropping is needed to maintain the health and productivity of these soils for future generations. ■

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Taiwan Four Millers Sign \$544 Million Wheat Deal

A DELEGATION from the Taiwan Flour Millers Association (TFMA) representing important customers for Idaho wheat visited Northern Idaho September 10-13, 2015. While in Idaho, the delegation visited with a local grain terminal, met with several wheat elevator operators, and toured a local farm in the Lewiston area. The trip to N. Idaho culminated with some western hospitality at the Lewiston Roundup Rodeo Saturday, September 12.

The delegation also signed an agreement supporting U.S. wheat exports over the next two years – a deal worth \$544 million. The TFMA Delegation Head Shin-Yao Lin, Director General Andy Chin of the Taipei Economic and Cultural Office in Seattle, and Idaho Wheat Commis-

sion Chairman “Genesee” Joe Anderson joined the Idaho Department of Agricultural Deputy Director Brian Oakey for the signing ceremony in Lewiston.

“Taiwan and Idaho enjoy a very close trade relationship. Last Year Taiwan was Idaho’s fourth-largest export market; Idaho exported more than US\$470 million to Taiwan in 2014,” Director General Andy Chin said. “This visit is an opportunity to further expand business and cooperation between the Gem state and Taiwan going forward.”

Idaho Wheat Commission Chairman Joe Anderson traveled to Taiwan last November as part of U.S. Wheat Associates crop Quality conference where he met with the TFMA. “The Taiwan Flour Mills Association is a great friend to Idaho and an important customer for Idaho’s wheat industry,” said Chairman Anderson. “Roughly 50% of Idaho’s wheat crop is exported to foreign markets and Taiwan is consistently one of Idaho’s top five export destinations.”

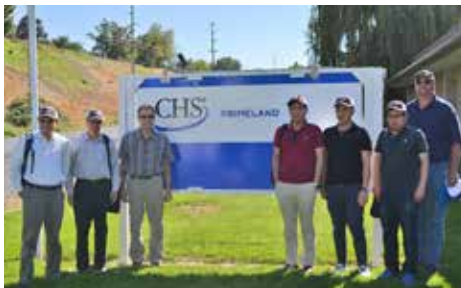
“Taiwan imports most of its wheat needs from the United States,” said Shin-Yao Lin, Delegation Head for the TFMA, “Flour mills and consumers in Taiwan have long enjoyed and appreciated the quality and consistency of Idaho wheat in particular.”



(left to right) Director General Andy Chin, Shin-Yao Lin Delegation Head, and Idaho Wheat Commission Chairman “Genesee” Joe Anderson sign the Joint Communiqué in Lewiston, Idaho

Export markets are critical to the success of Idaho wheat farms, and a key piece of future prosperity and growth for all Idaho agriculture. The face to face visits are important in developing the relationship directly with international customers.

The U.S. wheat industry’s working relationship with Taiwan is nothing new. Their cooperation and friendship is nearly 50 years in the making. With this deal the TFMA will import more than 70,000 metric tons (2.5 million bushels) of wheat every month to be distributed among all of the millers. ■



Taiwan Flour Millers Association meet at Primeland headquarters



The Taiwan delegation enjoyed western hospitality at the Lewiston Roundup Rodeo

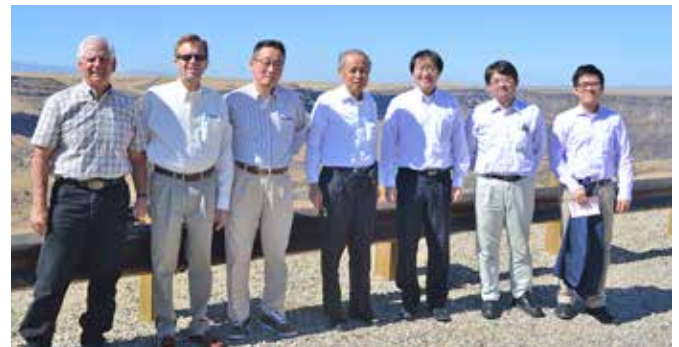
Japanese Millers Trade Team Visit Helps Ensure Future Market Share

IN 2016, the U.S. Wheat Associates (USW) will mark 60 years with a marketing office in Japan, so it comes as no surprise that in marketing year 2014/15, Japan was the single largest buyer of wheat from the United States. In the same year, Japan was also the biggest market for U.S. hard red spring (HRS) and soft white (SW) wheat. To learn more about the high quality wheat to which their customers have become accustomed over the past 60 years, a team of mid-level managers from Japanese flour mills visited Idaho, Oregon and Montana September 20 to 26, 2015.

Millers on this team were executives from milling companies representing Japan’s National Cooperative of Millers. The first trade team from

this group of millers visited the United States in 2014. USW collaborated with the Idaho Wheat Commission, Montana Wheat and Barley Committee and Oregon Wheat Commission to organize and host this year’s visit.

“These mid-level managers will eventually ascend to senior management positions and hopefully take with them an understanding that the United States produces the highest quality wheat for Japan,” said Steve Wirsching, USW vice president and director of the West Coast Office in Portland, Oregon. “This trade team visit created an opportunity for us to increase their positive



Rich Hahn, Idaho Power and Blaine Jacobson, Idaho Wheat Commission at the Swan Falls Dam with the Japanese Millers delegation

view of U.S. wheat and ensure we can continue to compete in Japan in the future.”

This trade team brought individuals involved in milling, quality control and marketing to the United States to learn more about the effective wheat export supply chain and gave them the opportunity to discuss logistical and quality assurance systems with the people who manage the U.S. wheat supply chain. ■



Idaho Barley Commission Update

Malt Barley Grain Yield and Quality Response to Repeated Dairy Manure Applications in Southern Idaho

By Amber D. Moore, University of Idaho Soil Fertility Extension Specialist and Christopher W. Rogers, University of Idaho Endowed Barley Research Agronomist

UNIVERSITY of Idaho soil fertility specialist, Amber Moore, and University of Idaho barley agronomist, Christopher Rogers, are entering the fourth year of an eight-year study to evaluate the use of dairy manure for various crops in a rotational cropping systems study. The goal of the study is to gain a better understanding of how repeated dairy manure applications impact a wide variety of factors related to crop yield and quality, soil health, and environmental quality in a wheat-potato-barley-sugar-beet crop rotation.

Dairy manure was applied at rates of 7.7, 15.4, and 23.2 ton/acre (dry weight basis) either annually or biennially from 2012 to 2015 on irrigated research plots located on the USDA ARS research station in Kimberly, Idaho. Annual treatments are applied fall-applied every year, while biennial treatments are fall-applied every other year prior to planting of the small grain crop (i.e., wheat or barley). A fertilizer-only treatment based on current University of Idaho Extension recommendations for each crop was also included, to help understand how manure systems compare to non-manured systems. A control treatment (no supplemental fertilizer or manure added) was also included. All treatments will continue until 2020.

Moderate applications of dairy manure (up to 20 ton/acre/year) had negligible effects on barley yield and quality in comparison to fertilizer-only treatments (Table 1). However, as manure applications and/or frequency of applications increases, increased proteins, increased lodging, decreased percentage plumps, and even yield loss started to occur (Table 1). We speculate that increasing pools of soil N and other manure nutrients resulted in increased plant height and was, at least partially, respon-



Table 1. Moravian-69 spring malt barley responses in 2015, year 3 of an eight year long term dairy-manure application study in Kimberly, Idaho. Soil nutrients tested at the 0-12 inch soil depth. The protected LSD multiple comparison (alpha=0.05) was used for statistical analysis.

Dairy manure rate (ton/acre, dry basis)	Frequency of Applications	Yield (bu/acre)	Protein (%)	Plumps (6/64) (%)	Lodging rating (1-9)	Plant height (inch)	Preplant soil nitrate-N (ppm)	Preplant soil K (ppm)
Control	NA	102 c	9.7 d	94 a	1 c	24 d	16 d	127 d
Fertilizer	NA	146 a	10.1 c	91 ab	1 c	29 c	19 d	145 d
7.7	Biennial (Applied in 2012 and 2014)	141 a	10.2 c	90 ab	2 bc	29 bc	26 cd	280 cd
15.4		140 a	10.5 ab	83 c	4 b	32 a	36 bc	427 c
23.2		122 b	10.8 a	81 c	7 a	32 a	53 a	665 b
7.7	Annual (Applied in 2012, 2013, and 2014)	145 a	10.3 bc	89 b	2 bc	31 ab	26 cd	410 c
15.4		138 ab	10.6 a	83 c	6 a	32 a	45 a	777 b
23.2		131 ab	10.8 a	76 d	8 a	32 a	53 a	1110 a

sible for increased lodging. Increased N also likely increased protein levels, although protein levels were still under the 12% protein threshold recommended by the American Malt Barley Association. Decreases in percentage plumps and other quality issues may be attributed to excessive N availability later in the growing season and/or accumulations of K (potassium) and other salts in the soil. We will be further evaluating relationships between soil parameters, plant nutrient uptake, and other yield components to better understand why and how the barley crop responds to dairy manure applications. The final goal of the project is the development of models

to help growers predict barley crop response to manure applications. Through studies such as this, we can help ensure sustainable production practices are being implemented in Idaho by improving our understanding of dairy manure applications in a rotational setting, thus resulting in high yields and quality while minimizing potentially negative impacts.

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

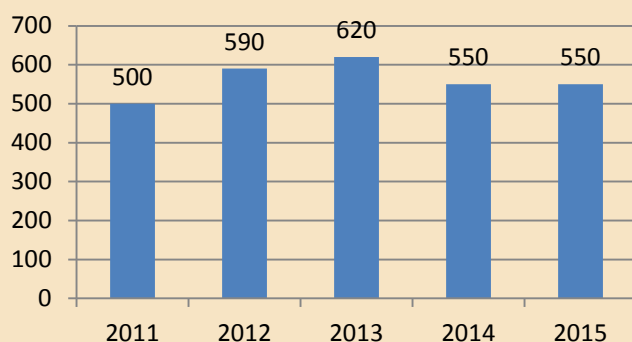
Global Grain Market Outlook, November 2015

MY 2015/16 World Grain Supply & Demand

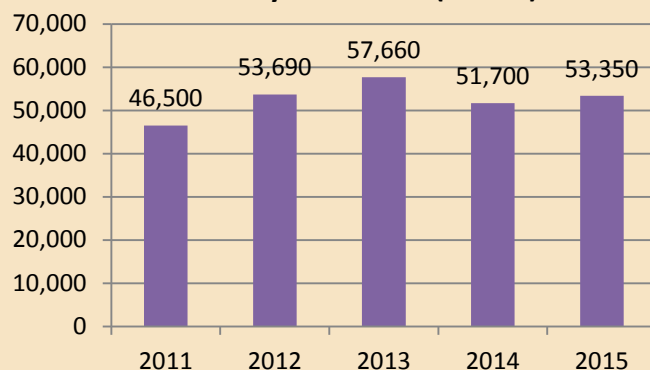
USDA, Nov. 10, 2015 (million metric tons, MMT)

	BARLEY		CORN		WHEAT	
	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16
Carryin	23.9	23.8	174.9	208.2	193.6	211.7
Production MMT	141.2	144.8	1,008.8	974.9	725.1	732.9
Total Supply	165.1	168.6	1,183.7	1,183.1	918.7	944.6
Export trade	29.8	25.5	132.3	128.0	161.3	160.9
Total Usage	141.2	144.9	975.5	971.2	707.0	717.4
Ending Stocks	23.8	23.7	208.2	211.9	211.7	227.3
Stocks / Use	17%	16%	21%	22%	30%	32%

Idaho Barley Harvested Acres (000)



Idaho Barley Production (000 bu)

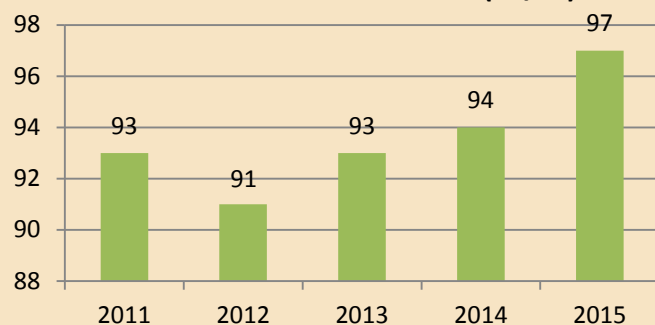


MY 2015/16 U.S. Grain Supply & Demand

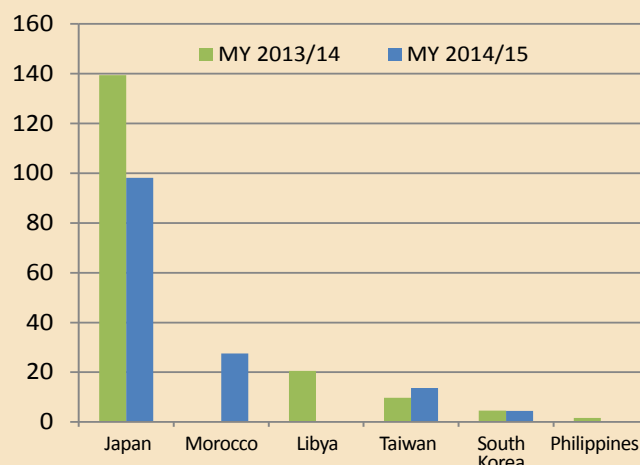
USDA, Nov. 10, 2015 (million bushels)

	BARLEY		CORN		WHEAT	
	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16
Harvested Acres (mln)	2.5	3.1	83.1	80.7	46.4	47.1
Carryin	82	79	1,232	1,731	590	753
Production (mln bu)	182	214	14,216	13,654	2,026	2,052
Imports	24	18	32	30	149	125
Total Supply	287	311	15,479	15,415	2,766	2,930
Food, seed & industrial	151	153	6,568	6,555	1,039	1,039
Ethanol			5,209	5,175		
Feed	43	50	5,315	5,300	120	180
Exports	14	12	1,864	1,800	854	800
Total Usage	209	215	13,748	13,655	2,013	2,019
Ending Stocks	79	96	1,731	1,760	753	911
Stocks / Use	38%	45%	13%	13%	37%	45%

Idaho Yield Per Harvested Acre (bu/Ac)



US Barley Exports (000 bu)





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