

# IDAHO GRAIN

THE IDAHO GRAIN PRODUCERS ASSOCIATION MAGAZINE

SUMMER 2014



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**P**ast IGPA presidents who have been my mentors had talked about how difficult it is to write the article for the magazine because when the edition hits mailboxes the topic often is outdated. I definitely found that the case last time.

In preparing to write this, I racked my brain to decide on a topic that will be important when I write it and just as relevant when the magazine hits your doorstep. Several issues came to mind like biotech, the market share battle between conventional and organic agriculture, government undertakings, and environmental attacks to name a few.

One important topic that farmers talk about at times but easily forget is the importance of research. Without research programs and projects we could not have the varieties, crop nutrition, or tillage choices we have today; and research is important at both the public and private levels.

At the beginning of April I attended the National Wheat Innovation Committee's (NWIC) research fly-in held in collaboration with the National Association of Wheat Growers (NAWG). Researchers and farmers alike joined forces to visit the USDA to discuss what areas may need to be stressed to our lawmakers. Once we were well informed, we banged on the doors of Congress to spread the message to committee chairs, their staff and elected officials.

The problem I mentioned about farmers taking research work for granted is also a problem in Washington, D.C., especially with Congress. The federal dollars allocated for programs and projects today often times do not produce results for several years...and politicians want results now so they can report back to their constituents on how well their vote in support of research was a help to the public and consumers personally.

Picture this - it has been a long winter, and I like most farmers are chomping at the bit, desperate to get some quality windshield time in a tractor. We hope our diligence during winter maintenance paid off for the push to get our crops in the ground.

The time spent in our "mobile offices" is usually a great place to think and develop ideas about the current growing season and maybe years down the road. We think of weather, prices, conflicts in Ukraine, etc. but we usually don't think about research. Heck, the meeting season is done and we are burnt out on the topic of research. Fast forward to the middle of May.

I literally hopped off the tractor from seeding to hop on an airplane to accompany my son Dillon for a scholarship interview in Hartford, Connecticut. The trip was planned in early April and airline miles were used. The only time available to get there was on a Thursday via a midnight "redeye" out of Seattle. Lack of sleep was challenging but it gave us time to see some sights after his interview on Saturday. A mini-vacation and quality father/son time.

We did the typical tourist thing by visiting Plymouth, the Mayflower II, and Plymouth Rock. We saw the very place where the seed of our nation was planted. The best and most important part of our experience followed.

Dillon and I visited an Eisenhower Fellow who has a farm in Northfield, Massachusetts. He raises hops and sod mainly. He had identified a market opportunity for locally grown and organic wheat, and here's where the importance of continued research comes to play. His farm had to get its seed for soft white winter wheat from the Pacific Northwest because years back the grain industry along with grain research had left the New England area.

The wheat crop looked good and was doing well while we were there, but the hot and muggy season had not arrived yet. Their barley was another story. It was a total disaster. It was spring barley that received a hard frost after planting and had to sit underwater for a spell...not a good combination. Very few plants survived and those that did were losing the battle to weeds.

They don't have any neighbors they can talk to about grain production and grain researchers are even harder to come by locally. They are a perfect example of what happens when research isn't taken seriously, funded properly, and/or abandoned altogether.

You as a grower are directly involved in wheat and barley research and advocacy. The Idaho Wheat Commission and the Idaho Barley Commission allocate your assessment dollars towards important research projects at the local, state, regional, and national levels. Your assessment dollars help to increase the use of Idaho wheat and barley with existing buyers while opening new markets to sell as well.

As growers, I imagine that you are thinking of the future. Depending upon the stage in your career, you might be focused on retirement or trying to grow your operation. I ask that you take a little more time to think about research and the work that goes on to ensure that it is relevant, applicable, and most of all there for us!

Agriculture faces significant challenges in feeding a growing global population with limited inputs, reduced arable land, and increased regulatory burdens. We research more than ever before. We need to speak out more frequently and louder than we ever have to make sure that those with the power to say "aye" or "nay" understand the importance research has on our communities, industry and especially the people they represent.

So while you are inside that tractor cab this summer, think about how you can make your voice heard and what you can do to protect not just your own farm, but your industry. ■

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## Is Ag Security Important to You?



A bill meant to increase protections for agriculture facilities in Idaho became one of the most defining and electric pieces of legislation considered by the second regular session of the 62nd Idaho Legislature.

Dubbed the “ag-gag” bill by the media, Senate Bill 1337 arose from a situation where an undercover agent for animal activist group Mercy for Animals purposely misrepresented himself to gain employment with - and thus access to - a large dairy in the Magic Valley.

The operative videoed dairy employees seemingly abusing animals, and months later the video was released to the public and media. The dairy’s owner was subsequently demonized in the court of public opinion while the activist group and its affiliates called on consumers to boycott his business.

Ultimately the employees involved were prosecuted and the dairy took other measures to address the situation. However, that did not satisfy Mercy for Animals, the Humane Society of the United States (HSUS) and other groups. Thus the Idaho

Dairymen’s Association (IDA) became proactive and sought help from the Idaho Legislature.

The issue of animal welfare is nothing new to American ranchers. But the tactics employed by certain animal activist groups against livestock operators have become much more aggressive. The goals of these groups have also evolved. The welfare of farm animals has become secondary to the lust to increase the organizations coffers. To their credit, they have done a great job.

After exhausting testimony and debate, SB 1337 passed the Idaho legislature receiving 79 favorable votes out of the 105 possible. The bill was quickly signed by the Governor and became immediately effective on February 28, 2014. Predictably the opposition responded with a pending lawsuit questioning the new law’s constitutionality.

Where was the IGPA in all of this controversy? Well...caught on the metaphorical barbed wire fence.

Drafted by the dairymen with some input from the Idaho Cattle Association, the draft of the bill first became public on February 5 at a weekly meeting of the Food Producers of Idaho. It was formally introduced in the Idaho Senate on February 10. It took just sixteen days for the bill make it through the legislative gauntlet.

Once the bill became public, the IGPA and other commodity groups were heavily pressured to back it. The prevailing claim was that it afforded protection to all producers, not just the livestock industry. However the IGPA had not been consulted at any time prior to February 5th.

Needless to say the IGPA’s 2014 policy directory contained no mention on this subject. It was not on anyone’s radar screen. When considered by IGPA leadership, a number of questions arose regarding how the bill’s provisions would apply to and protect grain farmers. But these questions fell on the deaf ears of the bill’s proponents and the IGPA chose to join the majority of non-livestock groups and stay away from the front lines.

In reflection, I have drawn on some simple principals and observations that I feel apply to this controversial issue and may help guide the IGPA should it arise again.

First, I contend that most agree that trespassing on private property is a crime. Most agree that people who lie are not acting morally. Nearly all agree that animal abuse is not acceptable. Most rational people believe that stereotyping an individual, a group, or a class of people exhibits bad moral behavior.

Applying these principals to the “ag-gag” bill and agriculture production generally, it should not be acceptable for any individual, group, or class of people to lie or misrepresent themselves, to be the judge and jury of what constitutes animal abuse, and/or to trespass on private property.

There are well-established local, state and federal laws which govern crimes like trespass and behavior such as lying. Whether these ordinances and laws are adequate enough is subjective to an individual or a group’s position. People do not have a so-called “right” to lie or to trespass on private property. If such a right exists as some argue, then why are there laws generally accepted by the populace that make crimes of such actions?

If some believe that certain laws are inadequate, then a process/system exists for people and groups to attempt to adjust them as desired – typically through legislative influence, petitions or legal means. In passing the ag-gag bill, Idaho’s livestock groups exercised their best ability to change Idaho’s laws by legislative means. Given the overwhelming passage of SB 1337, they obviously prevailed.

It certainly is fair and reasonable for people to debate the merits of this legislation. The immediate lawsuit(s) filed by those who oppose the new law is one avenue to affect change. But behavior such as lying, misrepresentation, and illegal acts like trespassing are not acceptable.

Security of your farm, your property and your right to operate a business under legal practices is critical. Farmers already deal with thieves of equipment, chemicals, copper wiring and other property. By and large anti-agriculture activists have not targeted grain farmers in the U.S. or Idaho...yet.

Should our industry be concerned? Could future use by farmers of genetically modified wheat varieties be met someday with hostilities? Could pests or diseases be introduced to certain crops as a form of bio-terrorism?

While SB 1337 may not be the perfect fit for Idaho grain farmers, it has raised these important questions. Questions that will hopefully spur farmers to think more carefully about how to handle security on their farms. The IGPA needs more input, direction and forward thinking into this issue in the months ahead. We hope to hear from you. ■



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## 2014 Farm Act Continues Most Previous Trends In Conservation

by Roger Claassen, USDA Economic Research Service (edited for length)

**T**HE Agricultural Act of 2014, also known as the 2014 Farm Act or Farm Bill, continues a strong overall commitment to conservation. However, unlike the previous two Farm Acts passed by Congress in 2002 and 2008, the 2014 Farm Act does not include an increase in overall funding for conservation programs.

The 2014 Farm Act reduces the number of conservation programs from 23 to 13. Many smaller, more specialized programs were combined to form new programs, folded into existing programs, or simply repealed. Consolidation may create opportunities for better coordination of conservation efforts across the broad range of activities that USDA conservation programs seek to support. Savings in program administration and streamlined application processes may also be realized.

After program consolidations, 97 percent of conservation funding mandated in the 2014 Farm Act will go to the five largest programs: the Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Agricultural Conservation Easement Program (ACEP), and Regional Conservation Partnership Program (RCPP).

The new Farm Act also helps maintain strong incentives for soil conservation on highly erodible land and wetland conservation by adding crop insurance premium subsidies to the list of benefits that could be withheld from producers who fail to meet conservation compliance requirements.

### Funding Continues To Shift Toward Working Land

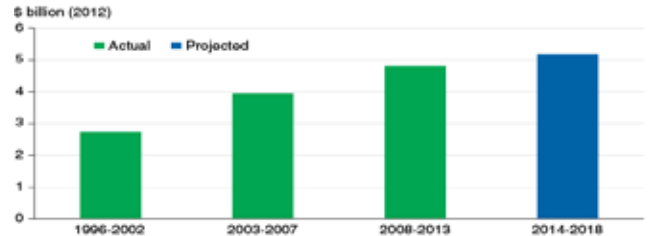
The 2014 Act continues a decade-long trend toward increased funding for conservation on working agricultural land. EQIP and CSP support the adoption of conservation practices or activities on land used for crop production and grazing. CSP can also provide payments that reward farmers who have already demonstrated stewardship by using conservation practices on their farms.

Working land programs can fund a wide range of practices including conservation tillage, nutrient management, field-edge buffers, and many more. In EQIP, 60 percent of funds are reserved for livestock-related practices including manure handling systems, fencing livestock out of streams, and rotational grazing, to name a few.

The minimum stewardship requirement for CSP eligibility is increased in the 2014 Act from having addressed one priority resource concern at the time of program entry (under the 2008 Farm Act) to having addressed two resource concerns. Resource concerns include soil quality, water quality, air quality, and others. To address water quality, for example, producers may be required to reduce the runoff or leaching of sediment, nutrients, pesticides or other pollutants from their farms using a range of conservation practices that could include conservation tillage, nutrient management, field-edge filter strips and others.

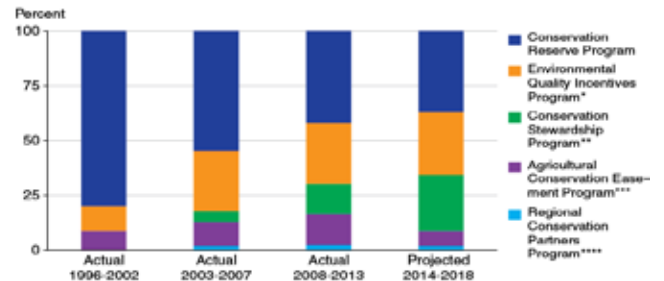
The trend toward greater funding for working land programs recognizes that agri-environmental problems cannot be addressed entirely through land retirement. Land retirement programs, even at peak acreage, included roughly 10 percent of U.S. cropland. Soil erosion, nutrient and pesticide runoff, and other resource concerns require a broader approach involving a larger share of agricultural land.

Rate of growth in average annual spending for major USDA conservation will slow under the 2014 Farm Act<sup>1</sup>



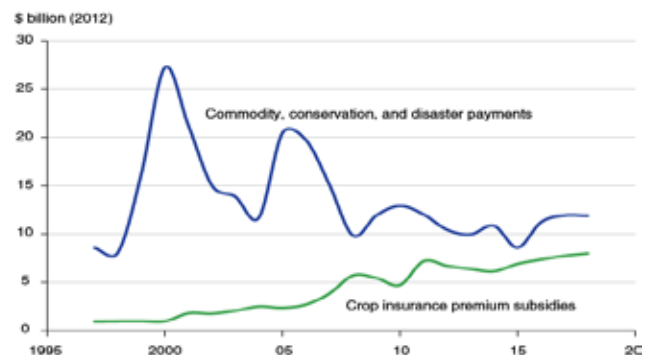
<sup>1</sup>In constant dollars (2012), assuming 2 percent inflation for 2014-2018. Major programs include the Conservation Reserve Program, Environmental Quality Incentives Program (including the Wildlife Habitat Incentives Program for 1996-2013), Conservation Stewardship Program (including the Conservation Security Program for 2003-2007), Agricultural Conservation Easement Program (including Wetlands Reserve Program, assessment portion of the Grassland Reserve Program, Farmland Protection Program for 1996-2013), and Regional Conservation Partnership Program (including Agricultural Water Enhancement Program, Chesapeake Bay Watershed Program, Cooperative Conservation Partnership Initiative, and Great Lakes Basin Program for 1996-2013). Does not include Conservation Technical Assistance.  
Sources: USDA, Economic Research Service analysis of Office of Budget and Policy Analysis data on actual expenditures for 1996-2013; projections for 2014-18 based on the spending levels specified in the 2014 Farm Act and Congressional Budget Office estimates.

Working land conservation programs—the Environmental Quality Enhancement Program and Conservation Security Program—capture an increasing share of conservation funding



\*Includes EQIP and the Wildlife Habitat Incentive Program for 1996-2013.  
\*\*Includes the Conservation Security Program for 2002-2007.  
\*\*\*Includes the Wetland Reserve Program, Farmland Protection Program, and Grassland Reserve Program (assessment portion) for 1996-2013.  
\*\*\*\*Includes the Agricultural Water Enhancement Program, Chesapeake Bay Watershed Program, Cooperative Conservation Partnership Initiative, and Great Lakes Basin Program for 1996-2013.  
Sources: USDA, Economic Research Service analysis of Office of Budget and Policy Analysis on actual expenditures for 1996-2013; projections for 2014-18 based on the spending levels specified in the 2014 Farm Act and Congressional Budget Office estimates.

Crop insurance premium subsidies increasing relative to other farm program payments subject to environmental compliance sanctions



Sources: USDA, Economic Research Service analysis of Office of Budget and Policy Analysis data on actual expenditure for 1997-2013; projections for 2014-2018 based on spending levels provided in the 2014 Farm Act and Congressional Budget Office estimates.

continued on page 8



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*“David is a unique person. I had a ball with him and learned a great deal. What really made the workshop for me was his great energy and grace with nature. He’s the real deal and a great photographer! I hope to return sometime in the future and shoot with him again.” ~ Marla Dell*

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Taylor Stoecklein’s Lightroom class will be held on the first day of every workshop.

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**CRP Acreage Declining More Than Payments**

The 2014 Farm Act reduces the CRP acreage cap by 25 percent from the previous 32-million-acre enrollment cap to 24 million acres by 2017. However, rather than driving program change, the lower acreage limit largely reflects the ongoing decline in CRP acreage. Since 2007, CRP acreage has declined steadily from more than 36 million acres to less than 26 million acres at the end of 2013—a drop of about 30 percent.

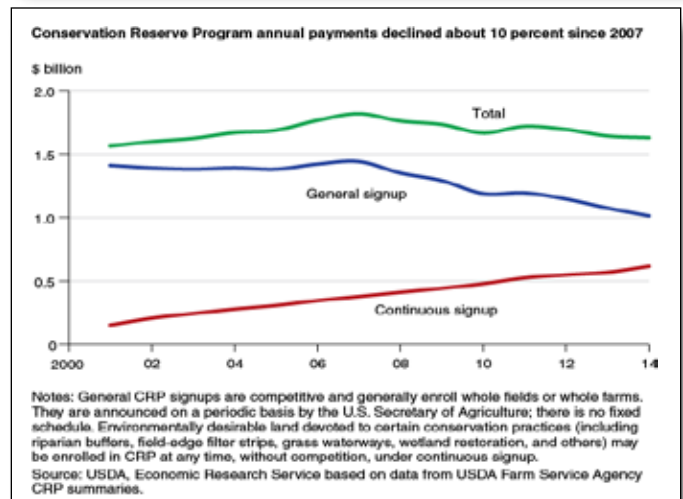
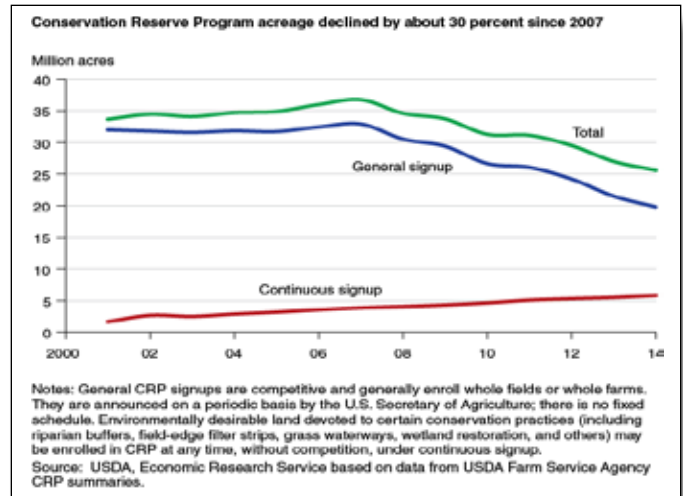
However, payments per acre have risen 16 percent in real terms over the same period, so that inflation-adjusted program expenditures have fallen by only about 10 percent. Since 2007, CRP has increasingly focused on high-priority practices (e.g., riparian buffers, field-edge filter strips, wetland restoration) and on State-Federal partnerships (though the Conservation Reserve Enhancement Program) that concentrate on specific problems such as improving water quality in a specific lake or river corridor.

In recent years, CRP rental rates have also been adjusted upward to account for higher cropland rental rates, making newly enrolled land more expensive. Average rental rates for general signup enrollments increased from \$48 per acre at the end of fiscal year 2011 to \$50 per acre at the end of fiscal year 2013.

**Conclusion**

The Agricultural Act of 2014 continues a strong emphasis on conservation developed during the past 30 years over the course of six major Farm Acts. While conservation funding has begun to level off after significant increases in the 2002 and 2008 Farm Acts, the new legislation continues funding for working land conservation programs. Land retirement and easement programs, however, will shrink in terms of both acreage and funding. In CRP, an ongoing shift toward high-priority practices that require less land may limit the loss of environmental benefits. Adding crop insurance premium subsidies to the list of benefits that could be withheld under environmental compliance requirements will help maintain incentives for soil and wetland conservation. ■

**This article is drawn from: *Agricultural Act of 2014: Highlights and Implications*, by Roger Claassen and Anne Effland, USDA, Economic Research Service, April 2014**



**IGPA Officer Candidate for New USDA Research Foundation**

“POTLATCH” Joe Anderson could not turn down this opportunity. The 71-year old wheat, canola and pulse farmer from North Idaho was approached by several national commodity groups to put his name in the hat for a position on new high profile advisory committee reporting to the Secretary of the U.S. Department of Agriculture (USDA).

Authorized in the 2014 Farm Bill, the purpose of the Foundation for Food and Agriculture Research (FFAR) is to foster research and technology transfer through private-public collaborations. That’s something Anderson has been doing for years on behalf of various Idaho commodity groups.

“Research and tech transfer have been babies of mine for at least 40 years”, Anderson commented. “I’ve spent my farming lifetime working on ways to ensure that Idaho farmers have the best research and technology available to them.”

Few could bring more hands-on experience and knowledge to Foundation than Anderson. He was a founding member of the U.S. Canola Association and has served on numerous national and regional boards including the National Agricultural Research, Extension, Education, and Economics Advisory Board to USDA; the Council for Agricultural Research, Extension, and Teaching (CARAT); American Oilseed Coalition, USA Dry Pea and Lentil Council (USADPLC), and the Idaho Wheat Commission.

The FFAR Board will consist of eight members recommended by the National Science Foundation and seven members backed by the agriculture industry. Appointments will be made by USDA Secretary Vilsack with advisement by ex-officio administrators from the research and tech transfer mission area.



“POTLATCH” JOE ANDERSON

Anderson’s chances for appointment are good given the strong coalition backing him up. Those groups include the National Association of Wheat Growers, National Barley Growers Association, the US Dried Bean Council, the National Sunflower Association, American Malting Barley Association and the US Canola Association.

“I am told the competition is deep for the seven industry positions, but I’ll give it my best shot,” said Anderson. “I believe I could bring to the group a level of experience with agriculture and common sense that is sorely needed in groups like these. I’m looking forward

to the opportunity.”

It’s not known for certain when USDA Secretary Tom Vilsack will make his selections to the FFAR. If Anderson is chosen, he would likely be required to vacate his positions as District 1 representative on the Idaho Wheat Commission and as the newest officer on the IGPA Executive Committee. That’s okay says IGPA President Robert Blair of Kendrick.

“An appointment like this is really would be a highlight of an amazing career of service for Potlatch Joe,” said Blair. “We told him not to worry about leaving our organization. Developing leaders is what the IGPA is all about, and he is the perfect fit for the Foundation. We would be lucky to have him in this position,” added Blair. ■



# Idaho Indemnity Funds Licensing and Examination Process



By Dave Ogden, Section Manager, Warehouse Control Program, ISDA

**Licensing:** To find out if a buyer is licensed you can inquire on line at [www.agri.idaho.gov](http://www.agri.idaho.gov), then select the warehouse link on the left side of the screen, or call (208) 332-8660. Licensed grain and seed buyers must renew their licenses annually. Commodity Dealers renew in December. Warehouses renew in April. Seed Buyers renew in June. The on-line list of licensees is updated about two weeks after the end of each licensing month and throughout the year as needed. There have been quite a few changes recently so you should check license status before contracting to sell your crop.

**Examinations:** Once a year each licensee is examined by a warehouse examiner. During that important examination many audit checks are conducted. Prices paid for crops and prices charged for crop sales are compared to determine if there is a current market gain

or loss on transactions and inventory. Warehouse inventory is measured and compared to company records for accuracy. Is there enough inventory to cover storage obligations to producers? If not then the company must order in adequate supplies or buy a producer's stored crop to come into balance in a few days time. The examiner checks current assets and current liabilities to see if the company is solvent and has an asset to liability ratio of at least 1 to 1 as required by state law.

Inquiries are made for changes in management, ownership, or personnel. Percentage use of lines of credit are verified. Scale tickets since the previous examination are sampled and traced through to settlement verifying all calculations are done correctly and are reasonable. For a few of the settlements and producer storage obligations, the examiner sends out confirmation letters to producers to verify amounts are correct. Current, adequate insurance against loss from physical perils is verified. Examiners also check scales for current inspection stickers. All warehouse receipts

are accounted for by numerical sequence. These steps and more are performed in an examination to verify the licensee is in compliance with state licensing laws and able to meet financial and storage obligations to producers.

**Fund Balances:** The CIF is just under its legal limit of \$12 million and continues to decrease slightly each month as operating expenses are running a little more than interest earnings on the fund. The SIF is just under \$6 million and continues to increase each year with assessments and interest earnings exceeding expenses. We continue to work to refine operations and control expenses. We now are able to receive quarterly indemnity reports and to process any payments on-line which is better for most licensees and for us.

**Producers:** Please remember to sell only to Idaho licensed buyers and to verify they are licensed before you sign a contract. ■

## IGPA Priorities Receive Attention on Capitol Hill

Tom Hance of Washington, DC based Gordley Associates contributed to the following update on federal policy issues important to the IGPA.

### Senate Congressional Committees Approves Federal Highway Bill

On Monday, May 12 the U.S. Senate Environment & Public Works (EPW) Committee released their version of a highway bill, which would reauthorize the federal aid highway program at the baseline level – equal to current funding plus inflation – for six years. Just three days later, the committee unanimously approved the bipartisan bill, S. 2322, the MAP-21 Reauthorization Act.

The proposal maintains current formulas and increases the highway funding amounts each state will receive each year. In addition to maintaining existing highway funding, S. 2322 also authorizes new spending on a national freight program that would allow states to designate rural roads as critical freight corridors, especially if they provide access to grain elevators or "other regionally significant agricultural facilities."

The freight highway proposal builds on a provision from the 2012 highway bill, calling for the designation of critical freight corridors. The EPW bill would fund the initiative with \$400 million available to states beginning in 2016, and increasing it by \$400 million each year until reaching \$2 billion in 2020. If enacted and implemented, the new freight program would significantly increase federal funding for roads important to trucking commodities and freight.

A summary released by the EPW Committee indicates that the freight program "improves efforts to identify projects with a high return on investment through state freight plans and advisory committees" established under the 2012 law. Factors that would be considered in determining which road segments qualify include total cargo tonnage and cargo value, whether the miles close gaps in existing freight network segments and whether they provide first- or last-mile links to such facilities as ports, international crossings, rail yards, warehouses, grain elevators,

energy production sites, airports or intermodal container transfer hubs.

S. 2322 does not yet include an increase in truck weight limits or the continuation of the hours-of-service agricultural exemption. Those issues are under the jurisdiction of the Senate Committee on Commerce and Transportation, rather than EPW, and the Commerce Committee has not yet acted on their portions of the bill.

There is no timetable yet for consideration by the full Senate, and the House Transportation and Infrastructure Committee has not yet indicated their plans or timeline for action.

### Senators Express Concerns to STB on Rail Delivery of Fertilizer

Recently several Senators from upper Midwestern states wrote to the U.S. Department of Transportation's Surface Transportation Board (STB) to reiterate concerns that railroads will not be able to move fertilizer loads in time to meet farmers needs this spring. Joining Senator Heitkamp (D-ND) in signing the letter were Senators Amy Klobuchar (D-MN), Al Franken (D-MN), and Tim Johnson (D-SD). The letter points out that grain shippers are still trying to move last fall's crop, but fertilizer cargoes for spring planting are now more important.

Following a hearing in April, the STB ordered freight rail companies BNSF and CP, the two carriers whose long-haul trains dominate traffic in the upper Midwest, to provide weekly updates on their efforts. BNSF and CP have pledged to pour more resources into moving critical cargoes.

### Idaho Delegation Hails Passage of Bipartisan Water Resources Bill

U.S. Senators Jim Risch and Mike Crapo and Congressman Mike Simpson praised recent passage of the bipartisan Water Resources Reform and Development Act (WRRDA). The bill was approved 412-4 by the U.S. House of Representatives on May 20 and quickly followed up significant 91-7 vote by the

Senate on May 22.

"Small communities across Idaho will benefit from this commonsense legislation," said Risch. "I am happy to see such resounding bipartisan support for the bill and look forward to all the good that it will do for the state of Idaho".

"This legislation provides critical funding to our nation's water infrastructure managed by the U.S. Army Corps of Engineers," said Crapo. "The Corps operates multiple projects in Idaho and throughout the Columbia River Basin that, through the furthest inland seaport in Lewiston, provide farms and other businesses with a vital link to the Port of Portland and the Pacific Ocean."

A provision in the final agreement dealing with on-farm fuel storage is important to many Idaho farmers. The bill included language addressing the EPA's Spill Prevention, Control, and Countermeasure (SPCC) rule.

The provision requires farmers to receive certification by a professional engineer for an individual tank with a storage capacity greater than 10,000 gallons, an aggregate storage capacity of at least 20,000 gallons, or a history that includes a spill; or the owner or operator of the farm may self-certify for a farm with an aggregate storage capacity less than 20,000 gallons.

An additional provision requires the EPA administrator to consult with the Secretary of Agriculture to undertake a study to determine the threshold for exemption of a farm from all requirements of the rule. Such threshold will be an aggregate storage capacity of less than 6,000 gallons and greater than 2,500 gallons and no history of spills.

The bill excludes all containers on separate parcels that have a capacity that is less than 1,000 gallons from the aggregate storage capacity of a farm. The storage capacities stated in this section for triggering the different levels of certification are higher than the capacities under the current SPCC regulations.

Idaho Congressman Raul Labrador did not cast a vote on the House version of the bill. The bill has moved to President Barack Obama's desk where it is expected to be signed into law. ■



# 2014 Schedule of Crop Tours/Field Days

DATE	TIME	EVENT/LOCATION	CONTACT
June 5	8:00 am-2:00 pm	Precision Ag Tech Demonstration Day UI Parker Farm, Moscow	Kristy Borelli (208) 885-1220 or kborrelli@uidaho.edu
June 19	7:30 am -1:00 pm	UI Weed Field Day Best Western University Inn, Moscow Tour includes Kambitsch Farm. Lunch provided	Donn Thill (208) 885-6214 or dthill@uidaho.edu
June 24	9:30 am Rockland 1:30 pm Arbon Valley	Power County Cereal Field Day	Reed Findlay (208) 226-7621 or rfindlay@uidaho.edu
June 24	8:30 am -12:00 pm	UI Snake River Weed Management Tour Aberdeen R & E Center, Aberdeen. Lunch provided	Pamela Hutchinson (208) 397-4181 or phutch@uidaho.edu
June 25	8:30 am 12:00 pm	UI Snake River Pest Management Tour Kimberly R & E Center, Kimberly. Lunch provided.	Don Morishita (208) 423-6616 or don@uidaho.edu
June 25	8:00 am -12:00 pm	Tammany Area Crop Tour Henricksen's Farm, 2810 Powers Ave., Lewiston	Doug Finkelburg (208) 799-3096 or dougf@uidaho.edu
June 26	9:30 am	Rupert UI Cereals Extension Field Day at 700 E. 600 N. Lunch provided	Joel Packham (208) 878-9461 or jpackham@uidaho.edu or Juliet Marshall (208) 390-4859 jmarshall@uidaho.edu
July 1	7:00 am	Prairie Area Crop & Conservation Tour, Nezperce Perce Legion Hall. Breakfast provided	Ken Hart (208) 937-2311 or khart@uidaho.edu
July 8	8:30 am – 12:00 pm	UI/Limagrain Wheat Field Day Kambitsch Farm, Genesee. Lunch provided following tour	Donn Thill (208) 885-6214 or dthill@uidaho.edu
July 9	11:00 am -2:00 pm	MillerCoors Barley Grower Appreciation BBQ, Burley. BY INVITATION ONLY	Derek Godsey (208) 678-3586 Derek.godsey@millercoors.com
July 11	8:00 am	Rexburg BYU-Idaho Meet at Ag Shop on BYU-ID campus. Lunch provided	Greg Blaser (208) 496-4527 or blaserg@byui.edu or Paula Arnold (208) 496-4581
July 16	10 a.m. through lunch	InteGrow Malt Annual Barley Field Day <b>BY INVITATION ONLY</b>	John Zietz (208) 528-1457 or John_zietz@cargill.com
July 16	4:00 pm	Idaho Falls: UI Cereals Extension Field Day with Bonneville County Grain Growers. Marc Thiel's on New Sweden Hwy, 2550 S 45th W. Dinner provided	Juliet Marshall (208) 390-4859 jmarshall@uidaho.edu or Matt Gellings (208) 206-0126 mjgellings@msn.com

July 16	5:00-8:00 pm	UI Kimberly Twilight Tour Kimberly R & E Center, Kimberly. Dinner provided	Don Morishita (208) 423-6616 or don@uidaho.edu
July 17		Thresher AgSpring Field Day, Shiloh Inn, Idaho Falls. <b>BY INVITATION ONLY</b>	Brett Wilken (208) 785-4460 or bwilken@thresherwheat.com
July 18	11:30 am	Anheuser Busch annual barley grower appreciation field day, Idaho Falls <b>BY INVITATION ONLY</b>	Tim Pella (208) 524-1080 or Timothy.pella@anheuser-busch.com
July 22	10:00 am	East of Ririe: Direct Seed Field Day Gordon Gallup Farm 1922 Swan Valley Hwy. Lunch provided	Gordon Gallup (208) 251-9552 or gogallup@hotmail.com; Cathy Wilson (208) 334-2353 cathy.wilson@idahowheat.org Juliet Marshall (208) 529-8376 jmarshall@uidaho.edu
July 28	3:00 pm	Soda Springs UI Cereals Extension Field Day with Caribou County Grain Growers tour starts at Cid & Janet Cellan's Farm. Dinner provided	Steve Harrison (208) 547-3205 steveh@uidaho.edu; Juliet Marshall (208) 390-4859 jmarshall@uidaho.edu
July 29	8:30 am	Prairie Area Cover Crop Tour, Meet at Lewis County Extension office, Nezperce	Ken Hart (208) 937-2311 or khart@uidaho.edu
July 31	8:30 am	Ashton UI Extension Field Day with Jefferson/Madison/Fremont County Grain Growers at Don Marotz Farm 1383 N 4200 E, Ashton	Lance Ellis (208) 624-3102 ellis@uidaho.edu; Juliet Marshall (208) 529-8376 jmarshall@uidaho.edu

# Direct Seed Field Day

**July 22 10:00 a.m.**

**1922 Swan Valley Hwy.**

Join us for a direct seed field day and crop tour east of Ririe, co-hosted by University of Idaho and the Idaho Wheat Commission.

Dr. Juliet Marshall will provide an overview of recent research on production systems, including cover

crops, and wheat varieties for dryland grain.

The results from direct seeding will be highlighted, along with information on disease and fertility.

Lunch Provided.

Please RSVP to: Cathy Wilson [cathy.wilson@idahowheat.org](mailto:cathy.wilson@idahowheat.org) or Gordon Gallup (208) 251-9552 or Juliet Marshall (208) 529-8376



# A new definition of sustainability

By *Cindy Snyder*

**A** NEW Green Revolution is coming to Idaho fields but it promises to look much different than the first one.

Scientists looking for ways to feed hungry nations following World War II used better plant genetics, irrigation and synthetic inputs to more than double cereal yields in developing countries between 1961 and 1985. Idaho farmers put those same tools to work for them, doubling spring wheat production from an average of 38 bushels per acre in the 1950s to 76 bu./ac. today.

While consumers have benefitted from those production gains, they have also grown more distant from agricultural production and more skeptical of modern practices. Many are seeking to reconnect with their food by shopping at local farmers markets or buying organic produce.

According to the U.S. Department of Agriculture, 8,144 farmers markets registered last year, nearly double the number in 2006. Organic food sales have grown from \$11 billion in 2004 to an estimated \$27 billion in 2012.

Food manufacturers and retailers are taking notice of those trends as well as hearing from consumers who want more information about how their food is produced. Increasingly they are looking down the supply chain to farmers to prove that the farming practices used are sustainable.

Idaho grain producers will be hearing that buzzword, with its somewhat nebulous definition, more in the coming years as political leaders and agribusiness companies look for ways to feed a growing global middle class in the face of changing weather patterns and increasing urbanization.

## Greener Farming

Walmart likes to say it started its sustainability journey 10 years ago when concentrated laundry detergent was developed, which reduced the amount of packaging needed. Now the retail giant

is turning its attention to sustainable agricultural production. And suppliers are listening.

Sustainable can mean different things but for seven major food manufacturers and agricultural suppliers attending a Sustainable Product Expo sponsored by Walmart in late April reducing greenhouse gas emissions is a priority.

Agriculture accounts for about 25 percent of the greenhouse gas in the atmosphere. Dave Huggins, a soil scientist with the Agriculture Research Service in Pullman, Wash., said much of that came when the prairies in the U.S., Australia and Soviet Union were plowed prior to 1950. The organic matter released by plowing is 58 percent carbon dioxide, one of the four gases contributing to climate change. Nitrous oxide is another greenhouse gas and emissions have been linked to synthetic fertilizer use.

Idaho growers can expect to see more emphasis placed on improved fertilizer management by some of the companies they already work with including AgSpring (formerly General Mills) and Monsanto. Collectively the companies, along with five others, pledged improvements on 8 million acres to offset 6 million tons of greenhouse gases during the Sustainable Products Expo.

AgSpring, which is already begun working with a select group of farmers in eastern Idaho, committed to enroll 2.5 million acres in the Alliance for Sustainable Agriculture's Field to Market initiative by 2015. That's a 2.5-time increase over current acreage.

Field to Market is an organization made up of farmers, universities, retail companies and conservation groups that have developed analytical tools, like the Fieldprint Calculator, to help farmers evaluate how their management decisions impact sustainability outcomes.

Monsanto pledged to use advanced plant breeding and biotechnology along with precision agriculture to help farmers measurably improve nitrogen use efficiency and lower greenhouse gas

emissions on at least 1 million acres by 2020. Those practices range from making split applications of nitrogen to using satellite technology to create a fertilizer prescription for each field based on soil type and yield potential.

Hugh Grant promised that an explosion of innovation in the agricultural sector from biotechnology to information technology will help farmers grow more with less. "In the future we will farm less on a field basis and more on a yard-by-yard basis," the chairman of Monsanto said during a press teleconference.

Developing smarter seeds with greater drought tolerance will also help plants sip water rather than gulp it, Grant said. That will help Monsanto meet its second sustainability goal: reducing water use by 25 percent through improved irrigation management. The lion's share of Monsanto's 1 to 1.5 million acres of seed production in the U.S. is produced by contract growers under irrigation. One of those key locations is the new Wheat Technology Center in Filer.

"Water is the single largest limiting factor for crop production," Grant said adding that agriculture accounts for the greatest freshwater use worldwide. If Monsanto's water efficiency goal is reached



by 2020, it would represent enough water to supply Washington, DC, for two to four years.

Grant promised that innovating new products will help Monsanto's farmer customers while minimizing agriculture's impact to the environment. "It's good for business, good for natural resources and good for society," he said.

### Sound good, but...

While those goals sound good many Idaho growers are leery, especially those who have sugar beets or potatoes in their crop rotation.

Mark Darrington, a potato and wheat farmer from Declo, is quick to say that the greener goals sound good but he is more than a bit worried about what those policies will mean to farmers.

"For every action, there is a reaction," Darrington points out. "I'm not saying that it will be a negative reaction, but there will be a reaction. If it's a positive reaction, then great, let's do more. But if it's negative, we need to do some more research."

Duane Grant echoes those concerns. He grows wheat, sugar beets and potatoes on his Rupert farm. Amalgamated Sugar Company, which is owned by a grower cooperative, encourages growers to soil sample and apply only the crop inputs that are needed.

That commitment is demonstrated by paying for soil samples on over 90 percent of the member's acres and also by paying sugar growers on how much sugar is produced.

"We do encourage, philosophically and monetarily through our payment system, to use soil sampling and BMPs to apply only the crop inputs needed to most efficiently produce the crop," Grant said.

For some customers, documenting those existing best management practices is enough to show beet growers are using sustainable practices. But other customers have demanded costly and time-consuming whole farm reporting practices.

Grant is concerned that consumer relations personnel who don't have a background in agronomy will hear of new ideas and think they will allay consumer concerns but don't understand how those practices actually work in the field or how much adhering to the new practice will actually cost.

"We have to interact with, or manage, nature in order to produce food," he said.

Both Grant and Darrington have already seen how consumer demands can impact production. Many potato growers follow a voluntary audit verification program to demonstrate to consumers they are minimizing unintentional microbial or chemical contamination of potatoes on-farm or during storage. Some processors have also told growers they will not buy potatoes grown in fields that do not follow certain protocols.

While Monsanto and AgSpring have promised to provide incentives to participating growers to reach their goals, Darrington worries about what the cost will ultimately be to agriculture overall.

"I see a drastic collision between the cost of production and expectations," he said. "I don't think a lot of thought has been given to the cost of value of these decisions." ■

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# Management of acid soils in northern Idaho

Severe aluminum toxicity — spring wheat plant with symptoms of severe aluminum toxicity (lack of tillering, yellowing, stunting of plant)



By Kurtis Schroeder,  
*Cropping Systems  
Agronomist*

**T**HERE is a lot of talk about acid soils in northern Idaho. These conversations lead to questions such as: what are acid soils, why should you care, what is the real risk and what can you do about it? These are all important questions and while soil acidity and its impacts are well known in other parts of the country and the world, less is known about the impact of acid soils on crop production in northern Idaho and eastern Washington.

Soil pH is a measure of alkalinity or acidity. Many factors are impacted by soil pH, including

nutrient availability, microbial activity, plant pathogens, and herbicide breakdown. In northern Idaho, soil pH has been declining for decades due primarily to the use of ammonium based fertilizers that naturally convert to nitrate in the soil, releasing hydrogen cations resulting in soil acidification. Soils that were historically forested tend to be more prone to this decline in soil pH because the soil types in these areas were more acidic when initially broke out for production and they have a lower buffering capacity. As the soil pH declines, many essential plant nutrients become less available for uptake by the plant. However, other elements such as aluminum can become more available at low pH and become toxic to plants. While aluminum is naturally high

in all soils, it is only under low pH that it becomes unbound from soil particles and is freely available for uptake by plants. But just because a soil pH is low does not necessarily mean that free aluminum will be in sufficient quantities to be toxic to plants. On cereal crops, symptoms of this toxicity are characterized as a distortion of the roots with twisting and bending, thickening of the roots, and the presence of stubby roots that have stopped growing. Above ground, the plants will be stunted and yellow, with reduced tillering. In extreme cases, plants will be severely stunted and may die prematurely.

Dr. Robert Mahler, a soil scientist with the University of Idaho, studied acid soils in the 1980's. His work demonstrated that soil pH was becoming problematic in areas and was on the decline. He also documented that as soil pH declines, the yield of dryland crops grown in northern Idaho declines. Depending on the crop, the pH threshold for reduced productivity can vary from about pH 5.2 to 5.7, with legumes (pea, lentil, chickpea and alfalfa) being more sensitive to declining pH. Further work showed that liming these soils would increase soil pH and subsequent yield. Although some growers experimented with liming in the 1980's, the practice did not catch on, partially due to inadequate supplies of inexpensive, high quality liming material.

Since the 1980's, soil pH has continued to decline in many areas

of northern Idaho and eastern Washington. Several years ago, acute symptoms of aluminum toxicity were identified in Spokane Co. in eastern Washington. The region where this toxicity was observed was historically forested and has traditionally been an area of intense bluegrass production. Bluegrass typically requires high nitrogen inputs and with little to no broadleaf crops in the rotation, acidification can be accelerated.

Interestingly, this relationship between soil pH and aluminum toxicity is different for historically prairie soils. Prairie soils have a better buffering capacity, which makes them less susceptible to shifts in soil pH. Evidence from research at Washington State University suggests that even under low pH conditions, aluminum toxicity may not occur in these soils. Several factors contribute to this phenomenon, such as the fact that prairie soils tend to have a higher cation exchange capacity (CEC) which means they are capable of retaining larger quantities of elements such as calcium, magnesium, potassium, etc. As such, these soils tend to have higher concentrations of calcium and magnesium (essential micro-nutrients) that can limit the plants ability to take up aluminum.

The relationship between soil pH and aluminum is quite complex and it is difficult to determine whether a soil will have sufficient free aluminum to result in toxicity.



Winter wheat on the left (sensitive to low soil pH and aluminum toxicity) and winter triticale on the right (tolerant to aluminum). This photo was taken on a grower field in the Rockford area on a field with a very low soil pH (~4.2).



Two plots from an aluminum tolerance screen conducted by Mike Pumphrey (WSU). The variety on the left is tolerant (Babe, 40 bu/A) and the variety on the right is sensitive (Louise, 8bu/A).



Typical root symptoms of aluminum toxicity on spring wheat seedling. Healthy plant on the left and aluminum sensitive plant on the right.

Moreover, it may be difficult to ascertain whether a soil is sufficiently acidic to warrant action. Ideally, soil pH of agricultural soils should be above 5.5 or even 6.0. Simple soil tests can determine the soil pH and additional tests can measure the CEC and quantity of the various cations in a soil. While these numbers can be informative, there are no good guidelines available to help growers to interpret this data. In addition, soil pH can vary widely, even within a single field. The best strategy when sampling for soil pH is to collect multiple samples from a field to a depth of about six inches. It is important to note if a noticeable decline in productivity has been observed on the farm that cannot be explained (particularly with legume crops). Contact a local extension agent to help interpret soil pH results.

Once soil acidity and/or aluminum toxicity has been identified as a problem, what are the control options? Several avenues have been explored for managing this problem and include planting tolerant alternative crops, growing tolerant

varieties of wheat or liming with calcium carbonate. Tolerant crops that are suitable for production in northern Idaho include oats and triticale. Research plots and grower experience have both indicated that oats and in particular triticale are tolerant of acid soils and aluminum toxicity, and should perform well in problem areas. Likewise, tolerance has been identified in a number of varieties of winter and spring wheat that are adapted for the Pacific Northwest. Additional screening is being conducted to determine the tolerance of other Pacific Northwest wheat varieties. Efforts are also underway in the breeding programs at Washington State University to identify new varieties of wheat with even better tolerance to aluminum.

The third control strategy, and the method that gets at the root of the problem, is to lime the soil using calcium carbonate. Use of lime in northern Idaho is still limited because low cost sources are not presently available, but several sources of calcium carbonate products are currently being marketed in the region, each with unique advantages

and disadvantages. Considering the high cost of liming soils, questions remain including: how much lime should be added and how much will be required to see an improvement in crop performance and result in a return on the investment? It is important to keep in mind that the return in investment will likely occur over several years, depending on the quantity of lime added. But the time interval between subsequent applications and the economic return remain in question. A multi-year study is currently underway at the University of Idaho in collaboration with the USDA-ARS in Pullman, Washington to compare various lime sources at different application rates and follow the benefit of liming over multiple years, examining the economic impact of the applications. If choosing calcium carbonate applications for your farm, consider leaving a portion or

strip through the field without lime and be sure to mark it. This will help to assess the success of the application on improving soil pH and plant health. Also keep in mind that depending on the product used, it may take some time for reactions to occur in the soil to improve soil pH, so the benefits may not be observed immediately. Finally, improvement in crop performance will be most obvious in legumes, although benefits may also be realized in cereal crops.

A lot of questions remain about the impact of soil acidity and how to best address this problem, but collaborative efforts among the University of Idaho, Washington State University and the USDA-ARS will hopefully start providing some answers in the near future.

To learn more about acid soils, view Dr. Schroeder's webinar at [idahowheat.org/media/webinars](http://idahowheat.org/media/webinars). ■

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# Yield maps: More than pretty pictures?



Figure 4: simulated solar radiation (Aspect Ratio) during first week in July @ 6:00p

By Bill Marek, Ph.D.



**I**T'S true, in the right hands with the right technology those yield maps

you've been putting in the desk drawer can actually be the missing link to improved profits. So let's dust off those maps and put them to use. Here's how.

**Understand the dilemma.** If a grower has farmed a piece of land for many years he knows where yields are good and not-so-good. If asked he would tell you he has a hunch it is a drainage problem due to underlying gravel or rocks, or sodic soils, or maybe an area of marginal infiltration. Problem is growers think they can't take the time to think about all the information that is available from field maps. Advances in computing and sensing technology provide ways to systematically and conveniently obtain, organize, and store the field data. Numerous software packages are readily available to calculate statistical correlations between yield data, management practices and field geology. But how does the grower convert this data into actions to improve his bottom line? It can seem like a steep learning curve you just don't have time for but actually you can't afford not to learn how to leverage data to improve yield, cost efficiencies and over all farm profitability.

## Technology to the rescue.

Today, sensors can visualize layers of data defining the geology of the land under a center pivot. One device

uses an integrated Electro-Magnetic Imaging (EMI) sensor together with Real Time Kinematic (RTK) technology packaged into a mobile unit that runs 65' transacts across center pivot acreage. The data is processed into four topographic GIS data layers and two GIS soil stratification maps. Software allows the grower to 'peer through' the various GIS data layers to discover cause 'n effect relationships. Advanced software packages have the capability to mine data and to bring to light the subtle interactions that occur between inputs, yield and fixed soil data layers. Armed with human analytic skills, aided by software, we can account for just about 100% of the cause 'n effect relationship between inputs and crop production.

Why is this important? With knowledge of these interactions, corrective actions (and the associated investments) will deliver yield improvements and profitability. Think about that. We have the

technology to learn, with certainty, what contributes to yields and what can be done to improve those field areas that are yield deficient. A 'management-by-the-numbers' approach to find those elusive 'threads-of-information' defining a causal relationship, will optimize yield and profitability.

## Explain yield deficiencies.

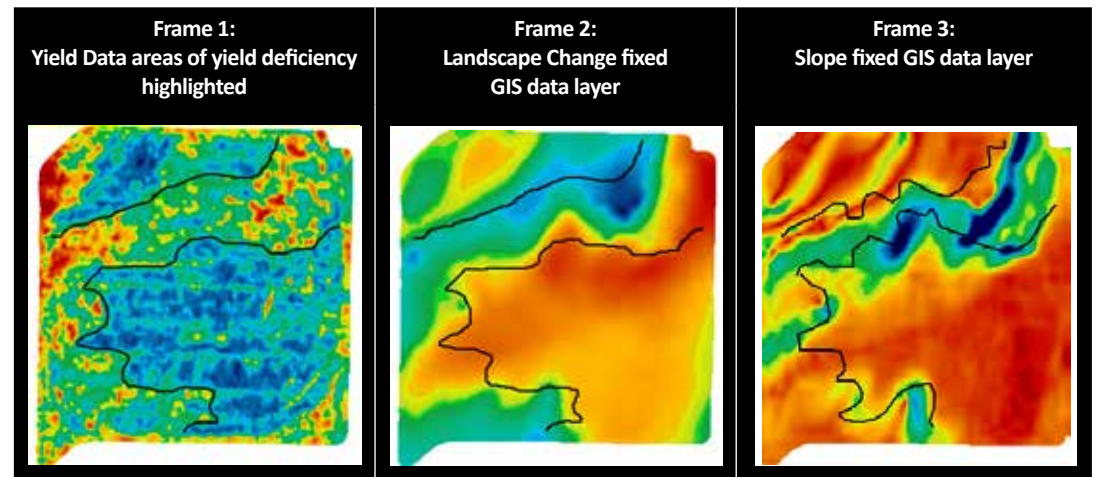
There are three things you need to know and take action upon. First, establish a baseline yield. Knowing the average bu/ac for the entire field becomes a 'stake-in-the-ground' against which comparisons can be made. Second, map yield deficient areas to create management zones. This can be done visually, often with a draw tool available within most field map software programs (see Figure 1 / Frame 1).

Now comes the fun part. Third, visually compare the areas of yield-deficiency to each of the four fixed topographic maps and two soil

GIS data layer maps derived from the EMI-RTK technology. Some say this is a little like playing armchair psychiatrist. And you know what, they're correct...somewhat. Actually we are just taking advantage of what the human mind does best—pattern recognition.

A quick glance comparing Frame 1 (yield data: high yield in blue decreasing through green, yellow to the lowest in red) to Frame 2 (change in elevation; blue is higher with red lowest point) confirms that this particular field shows a relationship between yield deficiency and higher-than-average elevations (higher elevations are designated blue; swale areas designated red/yellow). We observe a somewhat similar pattern when we compare Frame 1 (yield data) to Frame 3 (change in slope). So, on this field we are beginning to better understand how yield loss is correlated to (1) a rise in elevation and (2) sloped areas in the field.

Figure 1: comparison between yield, landscape change and slope





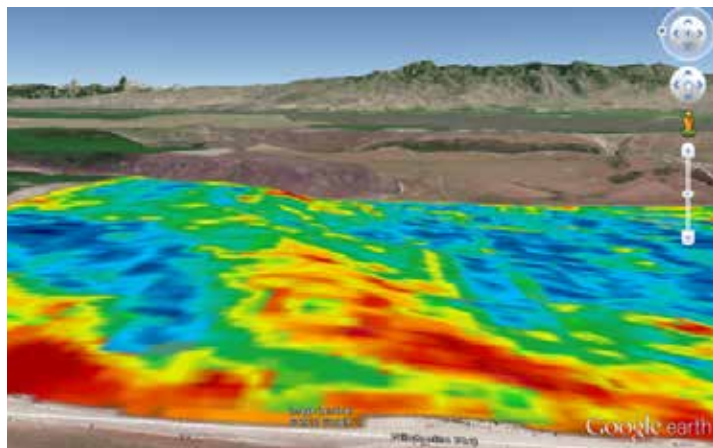
## Develop a working hypothesis.

At this point we can pose a cause and effect relationship between elevation and high slope areas with reduction in yields. Statisticians calculate this relationship using a metric called a correlation coefficient designated by the symbol 'R2'. A high R2 value measures a very strong correlation between the elevation and slope with reduced yield. When we overlay the view from Google Earth with yield data we receive visual confirmation of the relationship between yield and the higher elevated, sloped areas (see Figure 2). Software provides tools that allow us to mathematically cross-check these observations (see Figure 3 and read the description).

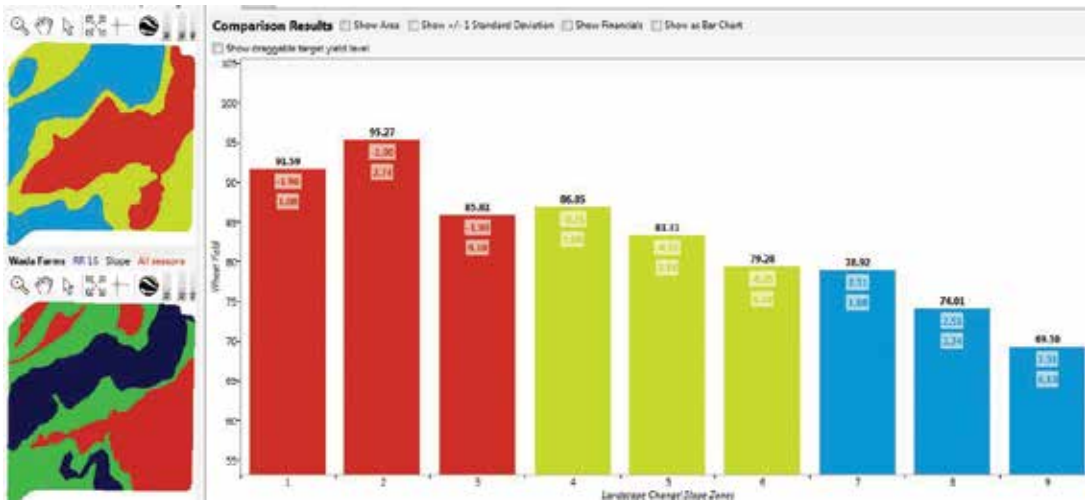
Now we can declare victory in understanding the cause and effect relationship of elevation and slope to yields...or can we? Looking back to Figure 1/Frame 1, the yield map, you will note in the northwest quadrant an area of high yield in blue. This area of high yield acreage on the elevated portion of the field begs an explanation. After all didn't we just conclude that elevated areas account for drops in yield? Now we notice a contradiction; an elevated portion of the field is yielding exceptionally well. Exactly what is going on?

The explanation is found in the compass position of the field in relation to solar radiation. Figure 4 illustrates a simulation in Google Earth. The simulation displays solar radiation on the field in early July at 6:00pm. At this time of the year the sun in Idaho sets at ~9:45pm. Clearly the shadow areas coincide with the

**Figure 2: yield data in Google Earth with emphasis on slope / poor yield area of field**



**Figure 3: plot interactions between landscape change x slope x yield**



**Description:** First, Landscape Change and Slope GIS data layers have been statistically 'cast' into management zones. Second, the management zones have been intersected with one another. Third, the intersected result sets have been compared against yield and then plotted on the bar chart. Note, the blue bar on the far right-hand side represents the maximum slope, maximum elevation and lowest yield. Conversely, the two red bars on the left hand side represent the minimum elevation, average to minimum slope and the maximum yield. The lower elevation sectors in red bars represent ~36% more yield than that of the blue bars.

area where yields are deficient but not on the northwest corner of the field which has a slight west facing slope. In addition to higher elevation and slope, we have a third correlate to the yield loss; ~3 hours per day less solar radiation. (See Figure 4)

## Find solutions.

The critic argues: '...you still don't have a solution'. But we're 80% there! William James the influential turn-of-the-century American philosopher was credited with the quote 'If all you have is a hammer you tend to treat everything as if it were a nail'. And that is precisely what growers have been doing by adding more of everything to boost production. Software is now available to leverage yield data to

## Deconstruct the Problem into its Parts

To find solutions we deconstruct the problem into its component parts.

### Center Pivot:

- Are the dropdowns laying down the volume of water consistent with the sprinkler chart; particularly when the unit begins to pull 'dynamic head'?
- Are we below the operating PSI for our regulators?
- Do we need to change the sprinkler package?
- Are we simply under-powered and need to add a booster pump?

### Best Management Practices:

- Have we taken steps in our tillage practices to mitigate runoff on the high slope areas?
- Can we write a program in the CAMS panel to 'wipe' the slope areas to lay down less water but more frequently and improve infiltration?
- Are their soil additives that can be used to improve infiltration?

Once presented with the options, the grower will know the best course to pursue for his farming operation. Remember yield is not the end goal, profitability is.

gain the upper-hand on soil and topographic variability, to make pin-point fertility applications as well as increasing seed densities where it will produce the biggest yield response.

We must re-focus the question on input management. How do I minimize inputs to best protect my investment? For instance, a number of growers report good results reducing seed density, nitrogen applications and water to poor fertility areas. Now, instead of standard plant populations competing for scarce inputs, the available seed can more effectively compete for sustaining nutrients. Quantitative evidence suggests that over-all yield

improvement can often best be demonstrated by working within the available constraints rather than always boosting inputs.

## Concluding thoughts.

By using the geo-spatial yield map and related GIS data layers it is not only possible to identify the cause of yield loss but develop solutions as well. The key to problem identification and ultimately finding solutions is the combination of software to help the grower visualize the problem(s) and local grower expertise. This type of by-the-numbers solution is readily available to help push the yield envelope. ■



# The Truth About GLUTEN



## Gluten-free facts from the experts

**C**elebrities, athletes, talk show hosts and nearly 30 percent of people say they are turning to gluten-free diets to solve health issues from “foggy mind” to bloating and obesity. But before you throw out the flour or start embracing all things non-wheat, barley and rye, it’s important to consider that nutrition experts do not advocate a gluten-free diet for most people. In fact, at least 93 percent of people — and probably many more — are completely healthy and happy following a diet that includes wheat and its protein, gluten.

According to Dr. Stephano Guandalini, founder and director of the Center for Celiac Disease at the University of Chicago, “There is a popular belief that gluten is bad for everyone. This is not the case. There is no evidence to show that anyone who does not suffer from celiac disease (CD) or non-celiac gluten sensitivity (NCGS) benefits from following a gluten-free diet.”

### Gluten: Wheat Protein Explained

Gluten is a protein matrix in wheat formed by gliadin and glutenin. It’s also present in barley and rye, and their many ancient grain ancestors. Gluten’s structure forms pockets that trap carbon dioxide released by leavening agents, such as yeast, baking powder or baking soda, giving bread and baked goods their texture. Gluten-free breads and products are denser and heavier because they can’t form air pockets without gluten.

### Wheat and Gluten Facts

Celiac disease, an autoimmune disease, is very real and affects about 1 in 141 people — less than 1 percent of the population. For people who have celiac, even a small amount of gluten is unsafe. When they eat it, their bodies immediately react, damaging the lining of their intestinal tract. The damage allows many proteins and other substances to enter the blood stream that should

not, setting up physical reactions and digestive problems with serious health consequences.

Incidences of all autoimmune diseases are on the increase, with CD four times more common than it was 60 years ago. Research is being conducted by a number of leading medical and scientific institutions to investigate if changes in our gut bacteria might be the cause.

“It’s very important that people who have celiac get diagnosed and tested so that they can begin following a gluten-free diet as soon as possible. And, it’s something they have to stay on for the rest of their lives,” said Dr. Joseph Murray, celiac disease researcher at the Mayo Clinic.

### A Rare Condition

Non-celiac gluten sensitivity (NCGS) is the other condition that proponents of a wheat-free life style say affects everyone when in fact, research indicates that it, too, is quite rare. According to Dr. Guandalini, “Around 0.5 percent of people react to gluten in a way that is not a food allergy but is also not celiac.”

Dr. Alessio Fasano, one of the world’s top scientists in celiac disease and director of the Center for Celiac Research at Massachusetts

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**“There is a popular belief that gluten is bad for everyone. This is not the case.”**

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General Hospital in Boston, Mass., explained, “Some people simply don’t react well to gluten and feel better when it’s removed from the diet. Unfortunately, there is no test for NCGS and this is part of why going

gluten-free has become ‘the’ answer to all that ails us digestively and other wise. It’s unfortunate because there are a lot of causes besides gluten for digestive issues.”

### Understanding Gluten-Free Diets

“Following a gluten-free diet is very difficult and one must know how to read labels. Foods such as broths, soups, gravies, sauces, seasoned rice mixes and seasoned tortilla or potato chips may contain small amounts of gluten,” said Tricia Thompson, registered dietitian and founder of the Gluten Free Watch Dog. “The new FDA labeling rules define ‘gluten-free’ foods as having less than 20 parts per million of gluten. This is extremely helpful for people with celiac disease or NCGS who must avoid all gluten, even in tiny amounts.”

### The Topic of Weight Management

According to the NPD Group, a leading market research firm that has followed nutrition trends



for more than 20 years, the biggest driver behind the gluten-free trend is weight loss. In addition, gluten-free products can be significantly more expensive — one study showed an average of 242 percent higher in cost.

“Eliminating wheat products (bread, rolls, cereals, pasta, tortillas, cakes, cookies, crackers) will result in fewer calories, but important nutrients like B-vitamins (thiamin, riboflavin, niacin and folic acid), and iron and fiber will also be lost,” said Pam Cureton with Boston’s Center for Celiac Research and chair of the Academy of Nutrition and Dietetics’ sub-practice group, Dietitians in Gluten Intolerance Diseases (DIGID). “Grains provide 43 percent of the fiber in the U.S. diet and wheat is approximately three-quarters of the grains eaten in the U.S. Nutritionally, many gluten-free products are not equal replacements for their wheat-containing counterparts.” Cureton recommends that anyone thinking about starting a gluten-free diet see a skilled dietitian first to be sure it is nutritionally sound and to help guide them through the difficulties of the diet.

### Facts About Wheat Breeding

Some promoters of the gluten-free lifestyle say that recent wheat breeding practices have led to higher, more “toxic” types of wheat. They believe that such practices are increasing the rates of celiac and gluten sensitivity, even though you must have a gene to develop celiac disease.

“Wheat, like all other food plants we eat, has undergone farmer selection and traditional breeding over the years,” states Brett Carver, PhD, wheat genetics chair in Agriculture at Oklahoma State University. “The hybridization that led to

bread wheat occurred 8,000 to 10,000 years ago. All cultivated wheat varieties, both modern and heirloom varieties, have these hybridization events in common, so the kinds of protein (and gluten) present in today’s varieties reflect the proteins present throughout the domestication process of wheat.”

In case there is any doubt of this, scientists have carefully reviewed available data back to 1925 and have not found any evidence supporting increased gluten content due to wheat breeding over the past century. Dr. Guandalini, like many other celiac specialists, is frustrated by the myths about wheat that are promoted by talk show hosts, articles and websites.

“Genetically modified wheat is not commercially available anywhere in the world,” said

Guandalini. “Wheat has been, and continues to be, a life-saving and nutritious grain for most people.”

### Gluten-Free: The Bottom Line

Most of us can eat and enjoy the many varieties of wheat foods available to us. And, luckily, for the few of us who can’t, there are gluten-free options. “The increased awareness by the food industry of the need for gluten-free foods has helped provide many options for those on gluten-free diets. There are more choices and better tasting products every day,” said Amy Jones, dietitian at Mary Rutan Hospital, Bellefontaine, Ohio, and chair-elect of DIGID.

But for the vast majority of us, going gluten-free can be expensive, less nutritious and just plain unnecessary. The bottom line: gluten is a complex plant protein found in some of our favorite foods, and most of us have been tolerating it for thousands of years.

For more information, visit [www.wheatfoods.org](http://www.wheatfoods.org). ■

## “Grains provide 43 percent of the fiber in the U.S. diet and wheat is approximately three-quarters of the grains eaten in the U.S.”

# The Wheat Foods Council

Judi Adams, MS, RDN, President

THE Wheat Foods Council (WFC) was organized in 1972 when wheat flour consumption was at a low of 110 pounds per person — during the first Atkins/low-carb fad. The Council consisted of five state wheat commissions and has now expanded to 25 wheat commissions and grower organizations (including the Idaho Wheat Commission). With positive promotions about wheat — and the knowledge that weight loss from low carb diets was unsustainable and low in many nutrients (B vitamins and fiber), the consumption rebounded to a 50 year high of 147 pounds per person in 1997.

About that time, the second round of low carb diets were popularized and wheat consumption plummeted while obesity skyrocketed. And now we are facing the popularity of the gluten-free diet. While we know that those with celiac disease and non-celiac gluten sensitivity must avoid gluten, the majority of people on a gluten-free diet are doing it because they think these diets will help them lose weight, are “healthier” or will make them “feel better” — all reasons with no scientific evidence to back them.

WFC leverages the majority of our resources into combatting the negative “urban legends” about wheat and carbohydrates. Because our budget is limited, we develop science-based materials



for nutrition influencers such as dietitians, extension specialists and other health professionals, rather than going directly

to the consumer. These influencers take our message to the consumer for us.

We write letters to editors/producers in response to inaccurate media stories, provide toolkits to supermarket dietitians and extension professionals as well as providing media dietitians with research that supports the importance of wheat in the diet, recipes and fun facts.

When financially possible, we develop new recipes and update our most popular ones with new, high resolution photography for our website ([wheatfoods.org](http://wheatfoods.org)). Check out our website for wheat-based recipes and nutrition information. One of our newer recipes, Raspberry Lovers Pudding (photo left) is perfect for spring while fresh raspberries are plentiful. Light-as-a-Feather pancakes, made with whole wheat flour, is one of the most popular recipes on our website.

Wheat has been a staple of our diet for thousands of years when there wasn’t obesity or a perceived gluten problem. The WFC is working diligently to return the “Staff of Life” to its rightful status. ■





# Wheat: Staff of Life

## *A Title Well Deserved*

**W**HHEAT is the “Staff of Life,” one of three life-sustaining grains the human population relies upon for sustenance (rice and corn are the others). Archeological evidence suggests that wheat was the first wild grass to be domesticated, sometime between 11,500 BC and 10,000 BC. But as early as 17,000 BC, nomadic tribes of hunters ate the seeds of wild grasses. While hunting they would grasp the head of a plant, run it through their hand, stripping the seeds into their palm, rub the grains between their palms to loosen the hull, blow away the chaff, and pop the raw kernels into their mouths. Chewing grass grains provided a good energy source while they stalked their prey. When hunting further from home, they carried these grains into regions where grasses did not grow in order to have a ready source of nutrition. Evidence suggests that cultivation and more permanent residences began to replace the nomadic hunter culture around 9,500 BC. Farming and animal husbandry were firmly established in the great river valleys by 8,500 BC. Einkorn, a domesticated wheat-like grass, was a primary crop in the watershed of the Tigris and Euphrates river valleys, known as the Fertile Crescent.

Wheat earned the title “Staff of Life” in part because of its wide adaptability across different environments. Wheat was established as far north as Scandinavia by 5,000 BC and east to China and Africa by 3,000 BC. The Spanish introduced wheat to Mexico in 1529 where it competed well with the native grain known as maize. Wheat reached south to Australia in 1788. Wheat can be grown in tropical and sub-tropical climates as well but high humidity increases the disease pressure, reducing yield and making long-term storage a challenge.

As civilizations developed food security became a central concern. Foodstuffs became both an asset and a weapon in the maintenance and pursuit of political power. Wheat was prized for its high nutritional value and because it is an easily stored source of calories and protein. Those who controlled the wheat stores gained power and influence during periods of

drought or famine. Not surprisingly, wheat gained a sacred status among ancient peoples who depended upon it for survival. Today wheat continues to hold an important place in the international economy and in the imagination of policy makers, citizens, and farmers throughout the world.

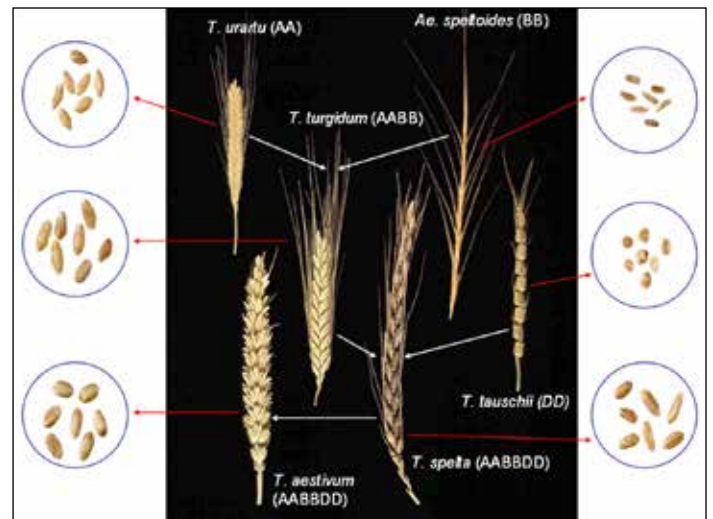
### The Genetics of Adaptability

How and why has wheat been so adaptable across a wide range of climates and cultures? Wild grasses selected for their larger grain size and easier harvesting and threshing ability were the predecessors to the cultivated landraces of ancestral wheat. Einkorn, a diploid grass with 7 chromosomes, was selected on two traits that enabled ready cultivation. The first was that the seed stayed attached to the spike, allowing the grain to be cut and bundled without shattering. This trait was changed by a mutation at the Br gene resulting in the non-shattering trait of the grain spike. The second desirable trait was for a free-threshing or hull-less grain type, which offered obvious advantage over the wild types having glumes that adhered tightly to the seed when dried. These mutations allowed large volumes of grain to be harvested, threshed, and stored for future use. Because grain was highly storable it provided many advantages over freshly killed game, which was subject to spoilage. Unlike wild game, grain did not lure large predators to compete for the prey or endanger the hunters.

Spontaneous outcrossing between Einkorn and *Triticum speltoides* produced a tetraploid having 4 homologous sets of chromosomes

to total 28 chromosomes. These natural tetraploids were domesticated as Emmer and eventually led to our modern tetraploid wheats: Durum, Persian, rivet wheat, and Polish.

Common wheat or “bread” wheat is of relatively recent origin and only exists in cultivation. In the wild, bread wheat cannot compete with native wheat-like landraces or grasses. In unmanaged plots, wild grasses and weeds will replace bread wheat within three years. Bread wheat is another product of natural hybridization between cultivated emmer and a wild grass, *Triticum (Aegilops) tauschii*. It is believed this hybridization occurred spontaneously multiple times across various regions. Bread wheat has three genomes and six homologous chromosomes: AA, BB, DD. The natural hexiploid was selected by farmers for its improved agronomic and end-use qualities. Greek bakers were exploiting the advantages of bread wheat in baking cakes, bread and rolls by 3,000 BC. Genomics research has verified the AA genome is clearly related to the



The evolutionary and genome relationships between cultivated bread and durum wheats and related wild diploid grasses, showing examples of spikes and grain

A genome of einkorn and the D genome is from *T. tauschii*, but the origin of the B genome is more complicated. Genetically, the closest surviving relative for the B genome is *Aegilops speltoides*.

In the broadest sense of the term, wheat is the ultimate “transgenic” crop combining three unique genomes in one functional species. Its adaptability to wide ranging environments and its genetic diversity for various traits is most likely the result of the three distinct genomes and their interaction with each other. Today, 95% of the wheat grown in the world is hexiploid common or “bread” wheat, with the other 5% being tetraploid durum wheat used for pasta.

### Versatility as an Ingredient

Hexiploid wheat displayed characteristics setting it apart from other grains. Bread wheat has a combination of unique protein genes resulting in the characteristic viscoelasticity of bread dough. Viscoelasticity makes wheat a versatile ingredient for baked goods in most cuisines of the world. Rice and corn, on the other hand, do not contain the “magic” gluten proteins. Gluten is a complex of proteins that interact with each other, providing the elastic matrix to trap CO<sub>2</sub> gas in bread dough allowing it to rise, making a light fluffy loaf. This gluten complex is made up of as many as 100 distinct proteins comprising 80% of total wheat protein. This combination of gluten proteins is not found in rye, einkorn, emmer, spelt and other novel grains. It is uniquely the result of the hybridization between emmer and the wild *Triticum*.

### Nutritional Components of Bread Wheat

In ancient civilizations, people understood that bread wheat was a good source of calories. Today scientific research gives us a more thorough understanding of the nutritional value of wheat in the human diet. Though 60-70% of the wheat grain is starch, wheat still provides as much protein to humans and animals annually as soybean. Much of the world's population relies on wheat as a staple of their diet. Wheat is a complete protein source, containing all of the essential and non-essential amino acids, except lysine, to build the proteins necessary for human and animal growth. Essential amino acids are those that can't be made by humans or animals and must be provided in the diet.

Wheat is also a major source of iron. Iron deficiency affects over two billion people globally and is the most common of all nutrient deficiencies. Non-wheat breakfast cereals are often fortified with iron to compete nutritionally with wheat cereals. Selenium, another nutrient found in wheat is an essential micronutrient for mammals but is not utilized in plants. Wheat consumption provides the major dietary sources of selenium in China, the United Kingdom, and many other parts of the world. The level of selenium in wheat varies greatly, depending upon the variety and where it is grown. As the UK shifted away from reliance on wheat imported from the US, nutritionists expressed concern about the relatively low selenium content in UK produced wheat and its affect on selenium content in the diet of the UK population.

May Yates, founder of the Bread Reform League in London, 1880; advocated the use of whole-wheat flour to improve the nutrition of poor children. In 1909, an official minimum standard extraction of 80% flour from grain was established and labeled “Standard Bread” flour. Modern science has confirmed that iron, other minerals, vitamins and fiber are found in highest concentrations in the outer “bran” layer of the wheat grain. Whole wheat flour retains a higher portion of the bran than refined flour derived solely from the starchy endosperm. Recently, many school districts across the US have enacted new dietary standards for school meals, requiring that fifty percent of all wheat products served must be made from whole-wheat flour. Consumer acceptance of whole wheat products has greatly improved with the development of hard white wheat for milling into whole wheat flour. Whole-wheat flour milled from hard white wheat is much lighter in color and does not have the characteristic bitter taste or texture of flour milled from hard red wheat.

Another important benefit of wheat in a balanced diet is as a source of fiber. Grains provide nearly 43% of the fiber in the U.S. diet, and wheat accounts for 75% of the grains consumed by Americans.

### Wheat as a Human Allergen

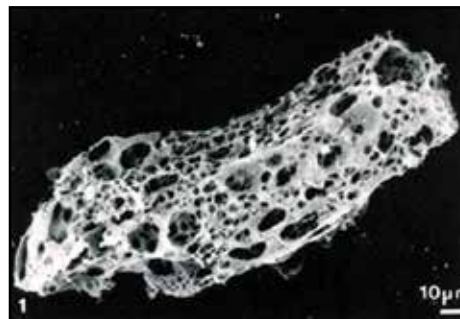
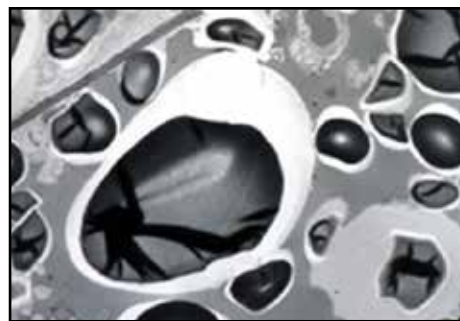
Although wheat is acknowledged as having a positive contribution to the development and stability of human civilization there are some health conditions associated with wheat. In ancient Rome, slaves working in the flourmills wore cloth masks to avoid inhaling the fine dust and debris clouding the mill room air. So-called baker's asthma is a health concern requiring preventive measures in the commercial milling and baking industries. Reactions of the lungs to inhaled wheat CM proteins are the primary cause of baker's asthma.

Wheat is also one of the eight major food allergens that together account for 90% of all food allergies. However, the incidence of IgE mediated food allergies in adults is infrequent and may only affect up to 1% of children. Wheat-dependent, exercise-induced, anaphylaxis (WDEIA) is a well defined allergic response to eating wheat and exercising. This condition is associated with very specific proteins, w5-gliadins, encoded on chromosome 1B. Other allergic responses to wheat include atopic dermatitis, urticaria, and anaphylaxis.

### Dietary Intolerance

Allergic responses are intense, quick to express, and can be mediated by the administration of medications to suppress the immune response. By contrast, dietary intolerance is a chronic disease that requires the complete elimination of wheat from the patient's diet. Perhaps 1% of the population in Western Europe is affected by Celiac disease, the best known of the wheat dietary intolerance diseases. Some patients react to gluten in a way that is not a food allergy and is not Celiac disease. This syndrome is called Non-celiac gluten sensitivity (NCGS).

There are many reasons why wheat is called the “Staff of Life.” Since the dawning of civilization, people have exploited its unique properties as a



The origin of wheat gluten. (A) Transmission electron microscopy of the developing starchy endosperm cells at 46 d after anthesis shows that the individual protein bodies have fused to form a continuous proteinaceous matrix. Taken from Shewry et al., 1995, (*Biotechnology* 13, 1185–1190) and provided by Dr M Parker (IFR, Norwich, UK). (B) Digestion of a flour particle with amylases to remove starch reveals a continuous proteinaceous network. Taken from Amend and Beauvais (1995) and reproduced by kind permission of Getreidetechnologie. (C) After kneading, dough can be washed to recover the gluten network as a cohesive mass which is stretched in the photograph to demonstrate its viscoelastic properties.

nutritious food source. Wheat is adapted across a wide range of latitudes, altitudes, and climates. It is a highly productive crop per acre of cultivation. The grain is easily stored without losing its nutritional value or its milling and baking qualities, making it a prized food commodity in every nation. Wheat is not only the “Staff of Life,” it is the staff of power and prosperity as well. ■

**Acknowledgements:** Much of the content for this article was derived from “Wheat”, P. R. Shewry, *J. Exp. Bot.* (2009) 60 (6):1537-1553. Additional sources include: “The Truth about Gluten: Gluten-free facts from the experts”, Wheat Foods Council, May 7, 2014, <http://finance.yahoo.com/news/truth-gluten-160412940.html>, and “From Wheat to Flour”, Sharon P. Davis, ed. April 1996, Millers' National Federation and Wheat Foods Council. Figure 1 and Figure 2 are from the “Wheat” article referenced above and used with permission from Oxford Journals.



# IDAHO BARLEY UPDATE

**T**HE Idaho Barley Commission is very pleased to announce that **Dr. Christopher W. Rogers, University of Arkansas**, has been selected by the University of Idaho as the newly established Barley Agronomist and will be based at the Aberdeen Research & Extension Center, effective July 28.

Dr. Rogers brings a wide range of knowledge and skills in soil fertility, applied soil physics and nutrient cycling to his faculty position with the University of Idaho. His academic record is stellar and he comes highly recommended by several faculty who served on his M.S. and Ph.D. committees. His Ph.D. work focused on addressing important issues facing Arkansas rice producers, including rotational management, cultivar selection and fertilizer nitrogen management. As concerns of the sustainability of rice associated with global climate change developed, Dr. Rogers was asked to take on the challenging task of initiating the first research to investigate methane emissions in Arkansas rice production. His research has been published in multiple scientific journals and agricultural experiment station series, and he has been widely recognized for his excellent academic record and research skills.



**Dr. Christopher W. Rogers**

Idaho. In respect to the position, I initially became aware of the Barley Agronomist position at the University of Idaho at the annual Tri-Society meetings in Tampa, FL. While there I spent an extended period of time talking with Drs. Paul McDaniel and Amber Moore from the UI about the position. I followed this up by investigating the agricultural production in the region. This initial investigation led to further talks with the UI cereal agronomist, Dr. Juliet Marshall, and Kelly Olson of the Idaho Barley Commission. The enthusiasm of the researchers at the UI and the commitment of the IBC, as demonstrated through the generous endowment for this position, made this a highly desirable position. I am excited to continue my career working in cereal grain production in Idaho as the Barley Agronomist and plan to develop a strong research and extension program that contributes to improving barley management and production.

**Q. What aspects of your academic background has prepared you for the Idaho Barley**

**Research Agronomist faculty position?**

**A.** I have trained extensively in soil and agronomic science through both academic coursework and research. I obtained M.S. and Ph.D. degrees in Crop, Soil, and Environmental Science from the University of Arkansas where my research investigated nutrient cycling in agricultural systems. To accomplish this work, I have had experience conducting and managing laboratory and field studies at multiple locations, and I have coordinated with both university and industry scientists. Along with my research, I have been fortunate to be afforded the opportunity to work with a broad group of researchers in Arkansas rice production focused on optimizing crop production (i.e., yield and end-use quality) through research across the Arkansas Delta. This has included participation in the development of a nitrogen soil test, grain-yield verification trials, cultivar by nitrogen rate trials, stable isotope ( $^{15}\text{N}$ ) trials, and rice milling quality trials in relation to nitrogen application rate. Training in these research areas, and an understanding of the direct impact they have on agricultural producers, has solidified my commitment to establishing a productive agronomy program focused on barley in Idaho.

**Q. What makes you the right person for this new endowed research position?**

**A.** I am passionate about working on issues facing agricultural producers, and I am excited to have the opportunity to bring my skills to the UI and the barley producers in the state. Again, I have been fortunate to work with a highly collaborative group of researchers, and I plan to continue this type of collaboration as the Barley Agronomist at the UI. Collaborative efforts result in increased productivity from a scientific standpoint, resulting in more rapid solutions to issues that are currently being faced by Idaho producers. I believe my skills in agronomic

**Q. What drew your interest to the Barley Research Agronomist position?**

**A.** Growing up in rural Arkansas, I have always enjoyed the outdoors from working on my family's small cattle farm cutting and hauling hay to canoeing, biking, fishing, and hunting. It seems my family has an affinity for the West as my father worked in Washington in the apple orchards as a young man, and I remember when he would go elk hunting out West when I was a boy. I have also spent time with my brother in Colorado where he currently lives. During my initial interview for the position, I was impressed by the beauty of the landscapes in Idaho, so from a geographical standpoint, I am truly excited to move to

and soil science will be a positive addition to the both the UI and to Idaho barley producers, and I look forward to establishing my research and extension program while working with both researchers and producers in the state.

**Q. How do you envision approaching this new position in the first 6 months and year?**

**A.** I have had the opportunity to work on the setup and initiation of several large research projects, including initial laboratory and field setup, and I plan to bring the skills I have learned during these projects to my new position. While rice production is unique, I am confident that the skills I have developed in agronomic and soil science will allow me to rapidly adapt to the barley production system. Prior to my official start date in July, I plan to make several visits to meet with Idaho barley producers and to participate in the North American Barley Researchers Workshop in Minneapolis, MN. During these visits, I hope to begin to establish connections with Idaho barley producers to help determine current issues that

I need to address as I begin my position. In Minnesota, I hope to develop relationships with established research scientists to understand current trends and issues. These two groups will provide me with key information for determining specific research goals during my first 6 months in this position. I believe it is key to work with producers and current barley scientists to ensure that the program starts off by addressing important issues facing barley production.

**Q. What excites you about joining the UI faculty and working with Idaho barley producers and industry?**

**A.** I believe this is an exciting time at the University of Idaho, both at the University as a whole and within the Department of Plant, Soil and Entomological Sciences. I had the opportunity to meet with the new UI president Dr. Chuck Staben earlier this year and was pleased to hear his enthusiasm for developing a shared vision for the university as well as his enthusiasm for this position specifically. In addition, I am

looking forward to working with the PSES department head Dr. Paul McDaniel and the faculty in the department. In particular, I have already discussed research ideas and goals with the UI Cereal Agronomist Dr. Juliet Marshall as well as other faculty both at the experiment station and on the main campus. I believe the collaborative environment that exists in the PSES department at the UI will lead to a highly successful research and extension program focused on barley agronomy.

**Q. Would you share a bit about your personal background and family?**

**A.** I have strong family ties to agriculture as both my parents grew up on farms that, at the time, were largely associated with dairy production. I grew up on a small cattle farm outside of Harrison, AR in the Ozark Mountains of northern Arkansas. I spent time as a child on my grandma's cattle farm and helped my uncle with his poultry farm. I spent time in the summer with my mother's family in central Missouri. My wife Stacey and I have been married for nearly 4 years and we have a young daughter together. We are looking forward to moving to such a beautiful area and are excited to have the opportunity to make Idaho our home. ■

## IBC hosts Western U.S. Barley Fusarium Head Blight forum to assess threat and to evaluate control strategies

Nearly 60 representatives of the Western U.S. malting barley industry, including growers, maltsters, brewers and researchers attended a forum organized by the IBC, University of Idaho and American Malting Barley Association to explore the potential threat of Fusarium Head Blight (scab) disease in barley on January 9, 2014 in Idaho Falls. Experts from the Midwest where the disease has been prevalent for the past two decades helped attendees better understand how the fungus is established, how it spreads and agronomic management to prevent crop losses. Attendees agreed to form a Western U.S. Barley and Wheat Scab Research Initiative, which immediately received funding support from the National Scab Research Consortium to screen barley and wheat varieties for resistance and to investigate integrated FHB disease management strategies. ■



## IBC hosts craft brewers for barley field course

IBC and Great Western Malting Co. are teaming up in July to host a two-day barley field course designed for craft brewers. This tour will give participants a first-hand opportunity to see our 2014 malting barley crop, discuss new barley varieties and malt quality issues and visit Great Western's commercial malting plant in Pocatello. This craft beer segment continues to grow at a rapid pace – 10-15 percent annually – and now uses more than 22% of U.S. malt. Idaho is well situated to supply this growing market as craft brewers prefer 2-row malting barley which we produce in abundance in our region. ■



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