Attachment 1:

2/27/2017

2017 Idaho Barley Report

Kelly Olson, kolson@barley.idaho.gov
Idaho Barley Commission
February 2017

2016 Idaho Barley Crop #1

Harvested area - 580,000 acres unchanged

Production - 62.1 million bu ⬆10%

Ave. Yields - 107 bpa ⬆10%

Est. Farm-Gate Value: $304 million ⬆16%

Idaho barley represents 31% of US crop

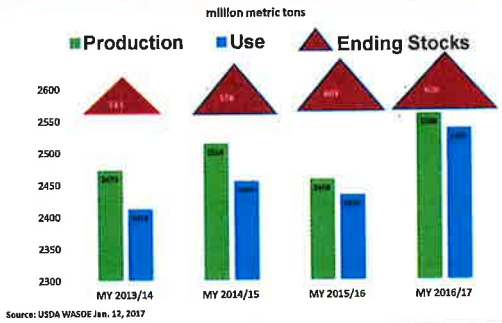
IBC Budget Highlights

	FY 2015	FY 2016	FY 2017
Income	$605,841	$772,154	$691,602*
Expenses	$635,735	$701,355	$730,325
Reserves	$480,485	$551,284	$512,461

* Original income projection $691,602. Estimated actual income $800,000

FY 2017 Expense Allocation	
Admin	13% ($96,193)
Research	52% ($375,469)
Market Development	11% ($83,819)
Grower Services	16% ($116,910)
Info/Education	8% ($57,934)

2016/17 Global Grain S&D



Source: USDA WASDE Jan. 12, 2017

2016/17 Barley Market

- Back-to-back BIG MALTING CROPS
- 2016 U.S. production -9%
- U.S. ending stocks +1%
  U.S. stocks-to-use 48% vs. 48% year before
- 2017 Idaho Malting Barley contracted acreage down; prices down about 10-15%.

U.S. Beer Demand

Percent Change in Volume	Calendar Year 2016	Calendar Year 2015	Calendar Year 2014	Calendar Year 2013
Total Supply		-0.1%	+0.4%	-1.2%
Domestics	YTD -1.2%	-1.2%	-0.7%	-1.3%
Imports		+6.2%	+6.9%	-0.6%

2016 Domestic Beer Sales -1.2%

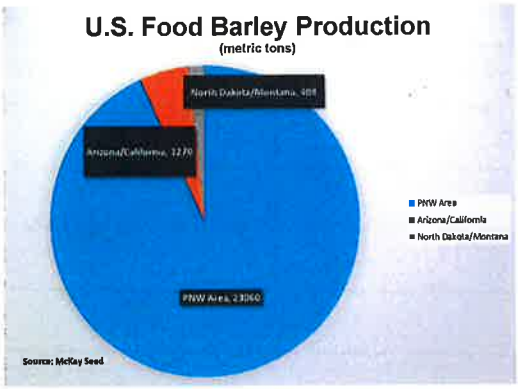
2015 Craft Beer Sales +13% 12% share

Growth in food barleys

- FDA Heart Health Claim in 2006. Market growth has been slow but steady.
- Dietary health risks are on the rise: high cholesterol, heart disease and diabetes.
  - Heart disease #1 killer of Americans.
  - 1 in 9 American adults have Type II diabetes – expected to rise to 1 in 3 by 2050.
  - Globally 380 million people suffer from diabetes – expected to rise to more than 600 million by 2050.
- Higher fiber diets are significant part of solution.
  - Daily fiber recommendation - 25 g for adult women and 38 g for adult men.
  - Ave. intake of dietary fiber in the U.S. is only 15 g/day.
- Biggest growth has been in Asian exports Japanese rice extender demand tripling

U.S. Food Barley Production

(metric tons)



U.S. Food Barley Symposium

Feb. 23-24, 2017
Ardent Mills Food Innovation Center, Denver CO

Ardent Mills
Nourishing what's next.

- Barley supply chain
- Barley nutritional story
- Barley health benefits / microbiome health
- Barley functionality & innovative applications
- Barley market appeal

IBC BARLEY RESEARCH

IRRIGATION EFFICIENCY

LOW ELEVATION SPRAY APPLICATION (LESA)

- Retrofits center pivot irrigation to place sprinkler heads closer to soil surface.
- Reduce water & energy use by 10-15%.
- Reduce lodging and potential disease reduction.

FERTILIZER EFFICIENCY

- Evaluating soil test methods to update N fertilizer recommendations.
- Evaluating barley response to inorganic P fertilizers.
- Evaluating variety x N management strategies to optimize performance.
- Evaluating N fertility and last irrigation scheduling.

IBC GROWER EDUCATION

IBC has been awarded more than $228,000 in competitive grants from Western Center for Risk Management Education during past 15 years. We have sponsored more than 130 educational events reaching more than 6400 participants across Idaho.

WEBINARS

- 2017 Winter Weather & Water Outlook Webinar (Troy Lindquist) – Nov. 17, 2016
- What's Your Breakeven Price – Using UI Tools to calculate your Cost of Production (Ben Eborn) – Feb 17, 2017
- Writing a Pre-Harvest Grain Marketing Plan (Ed Usset) – Feb. 28, 2017

WORKSHOPS

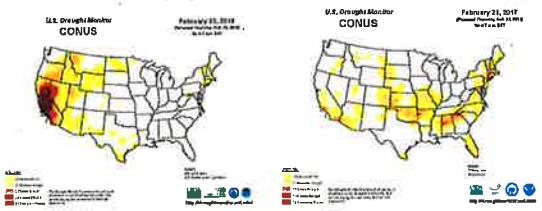
- March 29-30 - Five Common Mistakes in Grain Marketing, 8:30 a.m. at Fort Hall Convention Center & Lewiston Lindsey Creek Winery

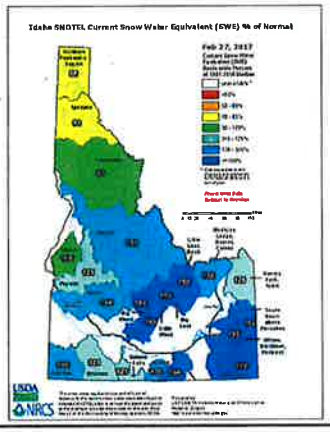
IBC GROWER ISSUES

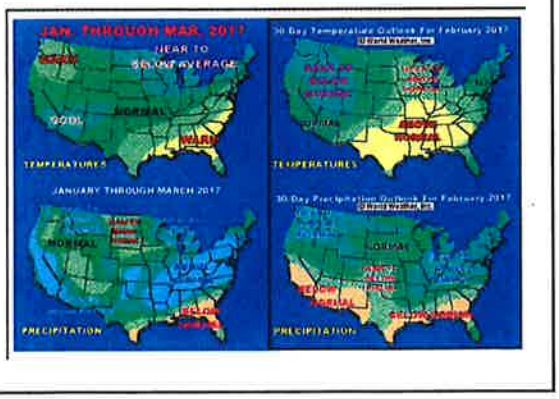
- **Low commodity prices** – need is greater than ever for Federal Farm Safety Net & Crop Insurance Tools.
- **Foreign Market Access / Trade Agreements** – NAFTA is critically important and TPP would have been highly beneficial for grain exports.
- **Immigration Reform** – we need comprehensive reforms to ensure an effective seasonal farm worker program is available.
- **Regulatory reforms** - underway

2017 New Crop Outlook

- Prolonged dryness across PNW has disappeared.
- U.S. winter wheat acres pegged at 32.38 million, lowest since 1909, down 10% (Idaho down 4%)
- U.S. corn acres projected down 4%







FY 2017 Budget Report To the Idaho House and Senate Agriculture Committees

Submitted by
Kelly Olson, Administrator
Idaho Barley Commission
821 W. State Street, Boise, Id
FEBRUARY 2017

IDAHO BARLEY COMMISSION'S FY 2017 BUDGET REPORT

The Idaho Barley Commission was created on July 1, 1988 for the purpose of protection, promotion, research, and development of markets for Idaho's barley industry.

IBC STRATEGIC INVESTMENT IN BARLEY AGRONOMIST RESEARCH ENDOWMENT AT THE UNIVERSITY OF IDAHO

In 2013, the Idaho Barley Commission undertook its boldest and most significant initiative to fund a **Barley Agronomist Research Endowment at the University of Idaho.** This ONE MILLION DOLLAR research investment enabled the University of Idaho to establish a dedicated Barley Agronomist / Soil Fertility Professorship (70% applied research and 30% extension) at the University of Idaho's Aberdeen Research & Extension Center in Aberdeen, ID. **Dr. Christopher Rogers was hired by the UI to fill this new Barley Agronomy Research Scientist post in July 2014.** Dr. Rogers earned his Masters and Ph.D degrees in soil fertility from the University of Arkansas and came to Idaho with strong credentials and an outstanding publication record.

The IBC has funded this UI Barley Research Endowment through five consecutive year $200,000 payments to the UI Foundation, scheduled to be completed in FY 2018. To generate this income, the IBC raised the barley assessment from $0.02/Cwt to $0.03/Cwt on July 1, 2013. The IBC has statutory authority to set the barley assessment rate at a range up to a maximum of $0.04/Cwt.

FY 2016 Financial Summary

Assets	
Cash and Cash	**$444,506**
Accounts Receivable	**109,082**
Total Assets	**$553,588**
Liabilities and Fund Balances	**$ 8,051**
	$ 8,051
Fund Balances	**$545,537**
Total Liabilities & Fund Balances	**$553,588**

IDAHO BARLEY COMMISSION
ACTUAL FY 2016 & PROJECTED FY 2017
INTERNAL BUDGETS

	FY 2016 ACTUAL EXPENSES	FY 2017 Approved	% CHANGE PREVIOUS FY
Research - U of I & Other	$376,801	$375,469	-0.4%
Market Development	73,097	83,819	+15%
Industry Partnership / Grower Services	105,487	116,572	+11%
Education & Information	53,579	57,934	+8%
Administrative Policy Development	90,851	96,193	+6%
Capltal Outlays	1,560	0	
TOTAL EXPENSES	**$701,355**	**$730,325**	**+4%**

	ACTUAL INCOME	PROJECTED INCOME	% CHANGE PREVIOUS FY
TOTAL INCOME	**$772,154**	**$806,000**	**+4%**

IBC

Reduce Water and Energy Use and Disease Pressure with Low Elevation Spray Application (LESA)

Howard Neibling, University of Idaho and Troy Peters, WSU

Figure 1. Double goosenecks (upper circle) and truss-rod hose clamps (lower circle) used to decrease the drop spacing and increase the number of drops. Photo by Howard Neibling, University of Idaho.

What is LESA?

LESA, or Low Elevation Sprinkler Application is a modified way of mounting and spacing sprinkler heads on center pivots or linear-move machines that minimizes evaporation and wind drift losses by placing sprinkler heads closer to the soil surface. Because most irrigation systems designed for the Intermountain Northwest require uniform soil coverage for germination, and must apply nearly all the water required for crop production, our design objectives were to 1) apply water in-canopy near the soil surface to minimize evaporation and wind drift, 2) apply water uniformly for germination and uniform quality crop production, 3) apply water in a manner that will minimize soil surface crusting and maintain infiltration rates throughout the entire irrigation season, and 4) minimize costs for new or retro-fitted systems. Therefore, the LESA system we developed and have tested and modified over time has the following characteristics shown in Figure 1:

- Applies to moderate or high intake soils where runoff is not an issue, although current research suggests that it may be suitable on many silt loam soils as well.
- For older pivots with spacing between outlets of 9-10 feet, we replaced the single outlet gooseneck fitting with a double gooseneck to give a drop spacing of 4-5 feet. (See Figure 1).
- Two additional fittings will allow three drops per original outlet, giving a spacing of around 3 feet.
- Drop nozzles suspended from the pivot lateral by flexible drop hose, passing over the pivot truss rods and held in place by snap-on clamps on the truss rods spread the application pattern for better water infiltration.
- 6 psi pressure regulators for water from groundwater sources and 10 psi regulators for water from surface or canal water sources
- Sprinkler head height of about 12-18 inches above the soil surface keep the sprinkler heads "in canopy" for much of the season.
- Spray nozzles with grooved plates that apply water in about a 15-foot wetted diameter. A reversible plate configuration will allow a quick change from LESA to "bubbler" mode.
- All equipment is currently available "off the shelf" from most irrigation equipment dealers
- Retrofit cost is approximately $25-$30/LESA drop.

Why May LESA be Right for Me?

LESA can reduce water and energy use.

Evaluation studies of LESA relative to conventional pivot sprinkler mounting have been conducted in five states over the last four years. LESA has been shown to be effective in reducing required water application for full production in alfalfa, field corn, spring barley and wheat, grass seed and potatoes. The amount of water saved varies with the crop but is generally greater for full season crops like alfalfa or corn than for shorter season crops like spring barley or wheat. For example, measured seasonal water application on adjacent pivots of alfalfa on two different farms in Northern Nevada was 20 and 24 % less for LESA pivots than for the adjacent pivots with conventional sprinkler mounting. In both comparisons, difference in measured full year production for LESA vs. conventional pivot was less than 4%. From Idaho studies, typical seasonal water savings are 15-25% for alfalfa,

10-15% for small grains and about 10-20% for limited data on potatoes (2 sites). When the quantity of water pumped is reduced by some percentage, pumping plant power consumption is reduced by a similar amount.

When water is applied to a crop by overhead sprinklers, loss can occur in two ways: 1) evaporation along the droplet path from the pivot to the crop surface, and 2) subsequent evaporation of accumulated water from the crop leaf surface. In windy conditions, water accumulates on a larger down-wind area of crop leaves, resulting in more evaporative loss and less water reaching the soil surface. By extending drop hose length to place sprinkler heads about 12-18 inches above the soil surface (foreground in Figure 2), local wind velocity is reduced and evaporative / wind drift losses are reduced. For example, unpublished data from WSU (Troy Peters) from multiple days of testing showed an average of 15% more water delivered to a bare soil surface when sprinkler height was 12 inches instead of approximately 60 inches. Once crop height is greater than 12-18 inches, water is applied within the canopy, and the canopy surface remains nearly dry, reducing this component of water loss.

Data from soil moisture sensors placed at 6, 12, 18 and 24 inches below the soil surface under both the LESA and adjacent conventional span in the spring wheat field shown in Figure 2, show the differences that can occur between the two application methods. The LESA span nozzles were selected to apply the same precipitation rate as the remainder of the pivot, with flow originally applied by one sprinkler now applied by two at half the spacing. Over the course of the season, soil moisture sensors under LESA showed that irrigation filled the soil to field capacity at 6 and 12 inches, and some small level of filling and water use at 18 and 24 inches. Under the conventional system, soil moisture at 6 and 12 inches was re-filled to about 50% available water, with no water refill at 18 or 24 inches for most of the season.

Data from one two-week period in July indicate the maximum differences that can occur. Two irrigations occurred during this period, re-filling soil under the LESA span to field capacity, with some water movement to 18 and 24 inches. In contrast, water applied to the conventional span area was sufficient to keep soil moisture constant, at a moderate level of water stress (no level of refill), with some extraction of water at 18 inches. Unfortunately, no yield data are available due to a total crop loss to hail about a week before harvest.

Reduced lodging and potential head disease reduction. This sprinkler height applies water below head height, which can lower disease pressure and reduce lodging in barley and wheat. This is particularly important on shallow or low water holding soils that tend to need more irrigation after soft dough. Results from three years of UI field studies on scheduling the last irrigation on both malting barley and wheat showed that in every case irrigation after soft dough did not increase yield under sprinkler irrigation, and in several cases yield decreased. However, in most plots irrigated by surface drip irrigation (keeping heads and upper canopy dry like LESA), yield increased for one additional irrigation past soft dough.

Several growers have also observed less lodging of alfalfa under LESA relative to conventional sprinklers.

Figure 2. LESA span (left) and conventional span (right) 2014 Mark Telford spring wheat, Arco. Photo by Howard Neibling, University of Idaho.

What factors should I consider in evaluating a change to LESA?

Soils: Because this approach applies water over a smaller wetted area, it is most applicable on nearly flat sites or on moderate to high intake soils. Therefore, it is currently not recommended on soils with high silt or clay content, such as silt or clay loams or on slopes steeper than 3-5% since runoff can be a problem. However, several grower experiences in Eastern Idaho have shown little or no runoff under soil texture or slope steepness conditions that should have caused runoff problems but did not. It seems that the very low elevation water application does not seal the soil surface like traditional sprinklers, which does tend to minimize runoff problems. Also, water application in-canopy tends to break the droplets into smaller sizes and also contribute to more flow down stems to the soil. However, if surface runoff on a particular site has been a problem, growers should proceed carefully, perhaps testing one span rather than converting an entire pivot or linear. As we learn more about situations where runoff is and is not an issue, we can provide more specific guidance on questionable sites.

Crop rotation: Ideally, all crops grown in the rotation for a specific field should respond well to justify pivot conversion to LESA. At this point, we have sufficient experience with alfalfa and small grains to design a system that will work well. We have only limited experience with potatoes and none with sugar beets. Based on observation, LESA should work well with beets and actually improve germination and emergence on problem soils. However, grower on-farm testing with one LESA span would be advised to assure good performance, or good performance with equipment modification under those specific conditions. We will be studying at least threes field sites on potatoes and probably some field sites on beets in 2017.

2016 grower experience with potatoes was mixed: light-textured soils had problems with erosion of hills, exposing developing potatoes, while no problems were observed on heavier-textured soils. It is likely that adjusting drop height, and perhaps sprinkler shape could reduce problems on light-textured soils, but this is another situation where limited scale grower testing is warranted.

Drop spacing: On all crops and situations tested until this last year, drop spacing of 4-5 feet was sufficient. Water distribution uniformity and yield reduction were not problems. Measurements under a similar nozzle arrangement in Northern Nevada with irrigated alfalfa indicated no application uniformity advantage by reducing nozzle spacing from 4-5 feet to about 30 inches. However, in several cases in 2016, 4-5 foot drop spacing resulted in drier strips of soil about one foot wide in high stem density malting barley or wheat conditions. Two growers that observed this situation indicated that although the crop was shorter in the drier strips, yield did not appear reduced. In other cases it appeared that yield may have been reduced, so caution is advised for LESA use on 4-5 foot spacing under these conditions. Based on field soil moisture measurements, replacing one conventional sprinkler with 3 LESA drops (a simple plumbing adjustment), or raising the heads to at least 18 inches, for more full-coverage irrigations should minimize or eliminate these problems. These changes will be tested in summer 2017.

Sprinkler configuration: All of our experience to this point has been with serrated spray plates, giving about a 12-15 foot wetted diameter and a droplet trajectory that keeps most drops in the canopy to maximize benefits already discussed. However, some growers have tried a "bubbler" arrangement where the spray plate can be turned over and the nozzle discharge directed upward to hit a shroud mounted below the pressure regulator. This aerates and re-directs the water back downward in a low-velocity narrow circular pattern. Initial limited experience in Idaho and more experience in western Nevada suggest that this might be an alternative configuration that seems to spread the water farther laterally, and may be a preferred application method when sprinkler heads drag over humps in the field.

Summary and 2016 lessons:

The LESA concept was tested by UI on three malting barley fields and one potato / grain linear move system in 2016. Full pivots of LESA were installed on a number of other pivots on grain and alfalfa.

- Results continue to be good on alfalfa with no visible problems with 4-5 foot drop spacing.
- Drop hose spacing on LESA spans on malting barley may need to be narrowed from 4-5 feet to about 3 feet to more uniformly water heavy stands of malting barley or wheat. In several fields with 5 foot spacing, about a 1-foot wide strip was left dry after irrigation once the heads were in canopy. In some cases this produced visible differences in crop height. Resulting crop yield / quality results were mixed, with yield drop reported in some cases and not others.
- Lodging was reduced at several locations.
- Drop hose spacing on LESA spans on a potato / grain linear move system may need to be narrowed from 4-5 feet to about 3 feet to more uniformly water heavy stands of malting barley or potatoes. In this field, with drop spacing of 5 feet, again about a 1-foot wide strip midway between adjacent drop sprinklers was left dry after irrigation. In this case, neither yield nor quality was significantly affected on either spring wheat or potatoes.
- Runoff did not appear to be an issue on any of the sites tested, although slopes of 3%+ were present on two or three sites.
- Using the bubbler mode after crop establishment appeared to enhance lateral wetting without runoff problems on several sloping sites.

For more information, contact Howard Neibling at (208) 308-5192 or hneiblin@uidaho.edu

Acknowledgements: In 2013 to 2015 the Bonneville Power Administration funded a joint University of Idaho / Washington State study to develop a LESA design suitable for center pivots in the Pacific Northwest and determine conditions where its adoption was appropriate. Anheuser Busch InBev provided additional funding in 2016 for LESA applications with malting barley.

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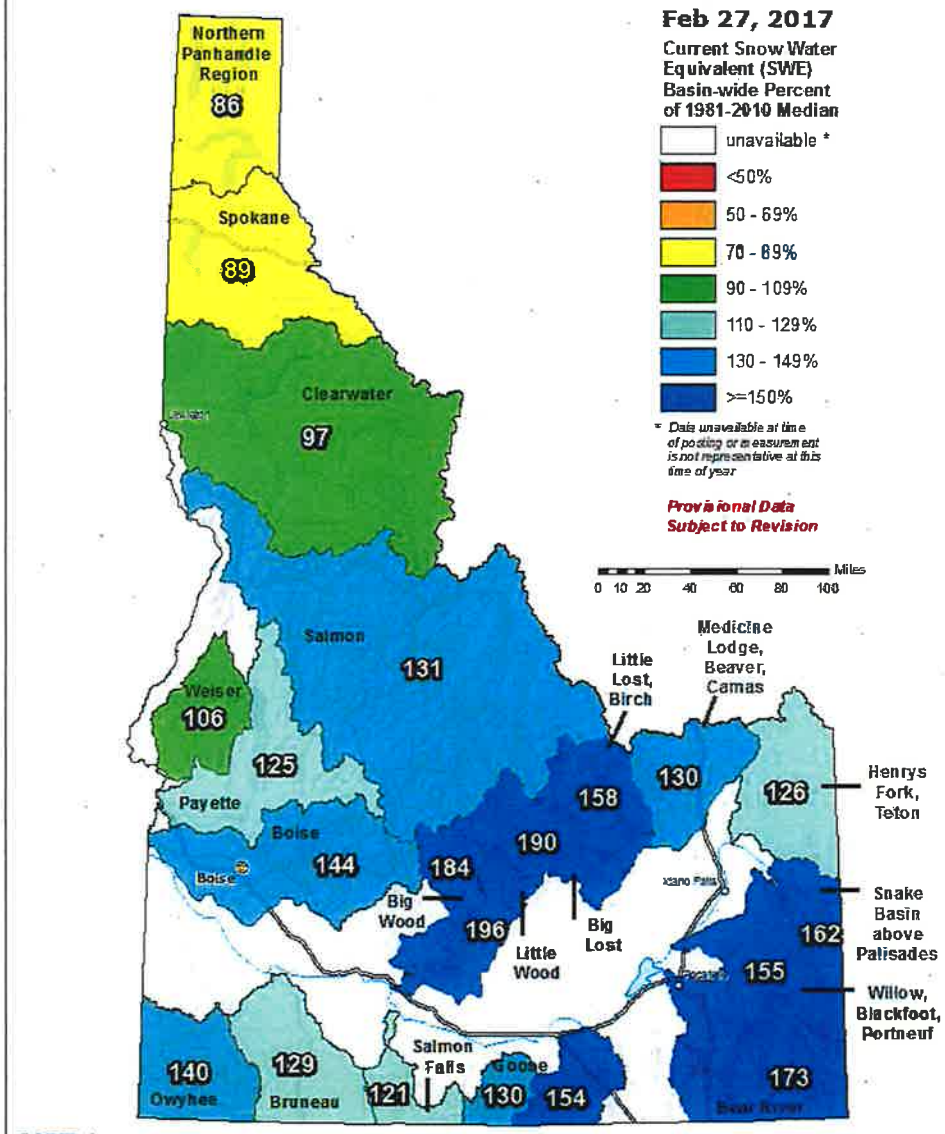
IDAHO BARLEY COMMISSION

Idaho SNOTEL Current Snow Water Equivalent (SWE) % of Normal



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

Idaho Barley Commission 2016 in Review

New North Idaho barley commissioner Wes Hubbard raises food barleys in Bonners Ferry for the Asian market.

Wes Hubbard appointed North Idaho Commissioner – Wes Hubbard, a second generation barley producer from Boundary County, has been appointed by Governor Otter to serve a three-year term on the IBC. Wes' family moved to Bonners Ferry from Grace, Idaho, in 1966. He farms 1000 acres of barley, including new food barley varieties being grown under contract for Asian customers, winter wheat and canola on the family farm and manages another 500 acres of farmland for his brother. Wes has served on the Farm Service Agency County Committee for nine years and on the Idaho Oilseed Commission for the past four years. Wes and his wife Jolene have two sons Ethan and Dalin. He replaces Tim Dillin, who served on the Idaho Barley Commission from 2010 to 2016.

RESEARCH:

Research is our single largest investment, topping more than 54% in FY 2016 and 51% in FY 2017. Projects include:

- One Million Dollar University of Idaho Barley Research Agronomist Endowment is being funded at $200,000 for five years
- ARS malting and food barley variety development at Aberdeen - $47,000
- Oregon State University malting barley variety development and Double Haploid Laboratory - $5,000 (FY 2016)
- Extension variety yield trials in 13 winter and spring locations - $14,672
- Evaluation of elite barley breeding lines in North Idaho – $3,965
- Optimizing agronomic performance through fertilization and water efficiency - $55,513
- Wireworm control - $15,444
- Long-term impacts of manure applications - $16,000

Optimizing Agronomic Performance through Fertilizer and Irrigation Efficiencies

– Dr. Christopher W. Rogers, soil fertility scientist, was hired by the University of Idaho to manage the UI's endowed Barley Agronomy Research Program and is based at the UI Aberdeen R&E Center. After only two years Chris has established strong research collaborations and has received competitive funding and support from the University of Idaho, Idaho Barley Commission, Anheuser Busch, MillerCoors and the Brewers Association. Dr. Rogers recognizes one of our biggest challenges as well as opportunities for Idaho barley is to improve management of our fertilizer and water inputs – the two biggest costs on the farm – to achieve both agronomic, economic, and environmental sustainability. His research is designed to help growers optimize these significant crop inputs and maximize barley's economic returns.

- **Evaluate soil test methods for determining N fertilizer recommendations tailored to specific malting barley varieties**

UI Barley Research Agronomist Chris Rogers demonstrates fertility research project at UI Aberdeen Field Day on July 13.

Phase 1: Investigating alternative soil test methods for measuring and predicting soil-N available for the barley crop. An effective test for soil-N mineralization needs to be rapid, efficient and correlate well with barley yield and grain response. Phase 2: Correlate soil-N methods to yields and protein of specific varieties to optimize overall economic performance.

- **Determine N partitioning and fertilizer N use efficiency using enriched isotope tracers** – there are currently no available data on N uptake efficiency in high input / high yield Western US irrigated malt barley production systems. This study will determine accumulation and partitioning of fertilizer N and soil-N during the growing season and should help us improve the University of Idaho's fertility recommendations while promoting sustainable production practices for Idaho barley.

- **Evaluate barley response to inorganic phosphorous fertilizers** – fields across southern Idaho are often high pH calcareous soils which may adversely affect the performance of phosphorous fertilizers. This study is designed to use newer malting barley varieties to evaluate whether P fertilizer recommendations are effectively predicting and meeting the plant fertility needs. Idaho barley fertilizer recommendations were developed in the 1980s and may not accurately reflect how well our newer varieties are going to perform in soils found across southern Idaho where more than 92 percent of the crop is grown.
- **Evaluate variety and N management strategies to enhance spring and winter barley malting barley performance (supported by the Brewers Association)** – this project is a robust and long-term evaluation of variety by nitrogen responses to optimize yields and proteins suitable for the craft brewing industry. The study has a large focus on winter malting barley varieties which may become more widely adapted to meet regional craft brewer needs.
- **Optimize N fertility recommendations and final irrigation scheduling (supported by MillerCoors)** – current research is designed to evaluate both N fertilizer recommendations and final water cut-off timings in high yielding spring barley in southern Idaho in terms of yield and quality. The study is designed to determine optimal fertilizer N rates and final irrigation timings where the 1st year of data indicated total applied and soil-N fertility of 160 units N maximized yield. Additionally, substantial water savings, with no yield or quality reductions, were measured when the final irrigation was scheduled at soft dough as compared to continuing later into the season.

MARKET DIVERSIFICATION:

- Maintain close working relationship with major brewing and malting customers who have contracted Idaho barley since the late 1960s.
- Expand business opportunities with the fast growing craft brewing segment which now represents more than 12% of the U.S. beer market, but buys more than 25% of the malt. In partnership with Great Western Malting Co. we sponsored a two day Idaho Barley Field Course for craft brewers from five states and Mexico in June.

Anheuser Busch and InteGrow Malt host Idaho barley growers for an appreciation barbecue on July 14 in Idaho Falls.


IBC and Great Western Malting Co. host barley field tour and short course for craft brewers from several states and Mexico.

- Build new markets for Idaho malting barley and malt in Mexico and other growth markets throughout Latin America.
- Build new markets for high fiber food barley in both domestic and Asian markets. A 14-member multi-country Asian trade team will visit northern Idaho in September to investigate ways to expand purchases of food barley from the Pacific Northwest region.

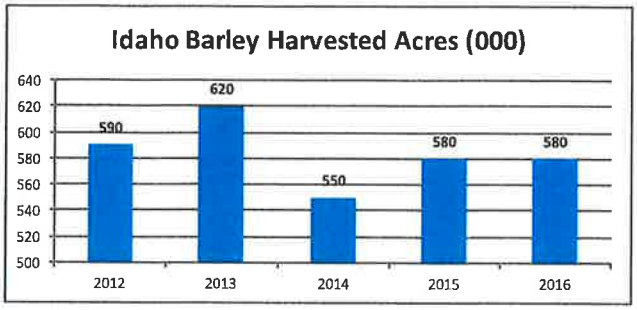
GROWER SERVICES:

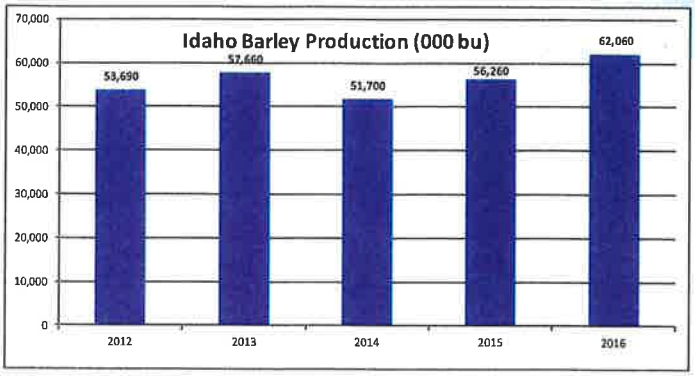
- We worked with Watts and Associates and the UDSA Risk Management Agency to fine-tune and improve the new Malting Barley Revenue Insurance policy which was launched in the 2016 crop year. This policy provides significantly improved pricing and optional unit coverage for malting barley production compared to the old policies.
- We continue to provide grain marketing and risk management educational programs for grain producers across Idaho. In 2015-16 we conducted six crop insurance and crop management workshops across southern Idaho, conducted three webinars on 2016 grain marketing strategies, El Nino winter weather outlook and the new Malting Barley Revenue Endorsement insurance and gave five grain market outlook presentations.

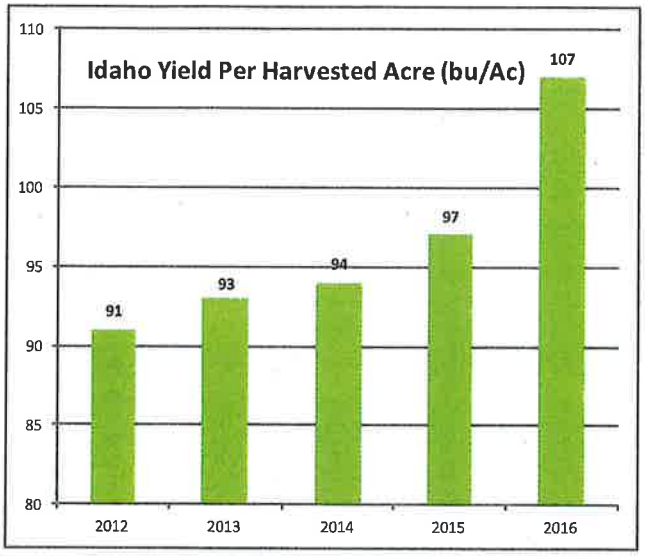
We have received a total of $189,860 in competitive grant funding from the Western Center for Risk Management at WSU to deliver producer education during the past 13 years. By collaborating with our valued county extension educators, we have sponsored more than 124 educational events reaching more than 6,100 participants across the state.

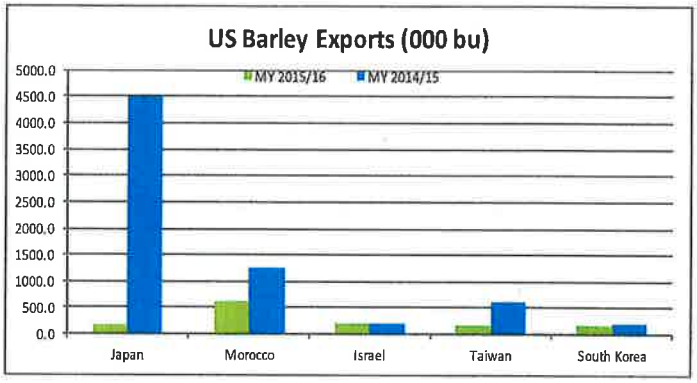
We have been awarded a $33,000 competitive grant in 2016/17 to support grain marketing and producer risk management education across Idaho this coming year.

US Barley Stats









2016 Idaho Barley Service Award presented to Dr. Juliet Marshall

IBC Chairman Pat Purdy presented the 2016 Idaho Barley Service Award to Dr. Juliet Marshall at the PNW Grain Convention on November 10, 2016.

The Idaho Barley Commission was very pleased to present its 2016 Idaho Barley Service Award to Dr. Juliet Marshall, University of Idaho CALS Associate Professor of Cereal Pathology & Agronomy in recognition of the extraordinary scientific talents, dedication and hard work. Juliet is based in Idaho Falls and Aberdeen but serves produces across the entire southeastern Idaho. Juliet has been working in cereal pathology in Idaho since 1992 and has been on the University of Idaho faculty since 2004.

Despite the relatively disease free growing climate we enjoy across the high plateau desert of southern Idaho, we are beginning to experience more disease pressures, particularly Stripe Rust and Fusarium Head Blight. Both of these diseases can cause millions of dollars in cereal crop losses, but fortunately for us Juliet has been on the job working with growers to scout for disease and develop optimum treatment strategies.

Juliet has been particularly proactive in warning about the significant threat posed by Fusarium Head Blight or scab, which has taken root in Idaho's because of expanding corn acres. In January 2014 Juliet worked closely with the Idaho Barley Commission to convene the first of its kind Barley Head Blight Forum to be held in the Western US – at least a year and a half ahead of the first confirmed detection of scab in our commercial malting barley crop. Under Juliet's leadership, we brought together cereal pathologists, growers and the malting industry to examine all of the threats posed by this disease and to formulate strategies to protect our high quality malting barley production.

In addition to her increasing work in cereal disease research and prevention, Juliet annually manages a **total of 17 cereal extension nurseries across southeastern Idaho**, including 2 winter barley, 6 winter wheat, 4 spring barley and 5 spring wheat nurseries stretching from Kimberly to Ashton.