

AUGUST 2019

OREGON WHEAT

An Official Publication of the Oregon Wheat Industry

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What the Heck is Blockchain?



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An Official Publication of the Oregon Wheat Industry



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Oregon Wheat Growers League
541-276-7330 schrist@owgl.org

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Your Dues at Work

It is June 26th and a thunderstorm is rumbling off to the east. Our wheat is still very green and probably a little behind normal, but it looks like a decent crop on the way.

On June 17th Clint Carlson and I traveled to Salem where we met Blake Rowe, Amanda Dalton and Senator Bill Hansell in the Governor's office to participate in a signing ceremony with Governor Brown to sign into law Senator Hansell's Volunteer Fire Fighter Good Samaritan Bill. Clint and I had testified earlier this year alongside Senator Hansell in support of his bill and this was his way of saying thank you to OWGL for our support. I would like to personally thank Senator Hansell for his work on this bill along with his co-sponsors Senator Johnson and Representatives Barreto, Bonham, Findley and Stark. Please make sure to thank these Senators and Representatives if you get the chance. This law says a person that voluntarily undertakes the fighting of a wildfire is not civilly liable for any injury to person or property resulting from the good faith performance of firefighting efforts. It does not take effect until January 2020 and only applies to volunteers who are not a member of a fire department or district, firefighting on PRIVATE agricultural lands and does not include travel to or from the fire or during operation of a motor vehicle. You are still responsible for your employees so be sure to provide safety training that includes fire safety and be sure to document the training.

Over the last several years we have had a steady decline in membership in the OWGL. Some of this is in part due to the fact that farms are consolidating and getting bigger, some members are retiring, and some are growing other crops. But then there are some members just not paying their dues. I know some members have told me that they think the 5 cent per bushel assessment is enough, but I must point out that money goes to the Oregon Wheat Commission. The Commission sends some of that money to us to help run the League office and provide services to our growers, but the rest stays with the Wheat Commission and is used to conduct important research and help promote our product to buyers of soft white wheat. The basis of Pacific Northwest soft white wheat, which is the Portland SSW price compared to Chicago

futures, is an indicator that maybe those dollars are paying off.

Due to state law, the dollars that the League receives from the Commission have some strings attached and can't be used for lobbying purposes. That is where the money received from your dues is vital. Without these moneys we cannot pay for our lobbyist or some of our lobbying activities. While it may seem that we have not been very successful in Salem with all of the new regulations and taxes, I will say it would be much worse if we could not afford to have a continuous voice in Salem. Sometimes, we end up being the only agricultural voice invited to the negotiating table; that's due to our relationships built by our OWGL team.

Oregon is also a member state of the National Association of Wheat Growers (NAWG) who does a very good job representing us in DC. Your OWGL officers travel several times throughout the year to represent you on the National level. In the latest farm bill wheat gained some ground that was lost in the previous farm bills and that was because of NAWG's presence in DC. If you compare your dues to union membership dues across our state, they are relatively inexpensive and every wheat grower (and farmer in general) benefits from the work OWGL does. So, if you have not renewed your membership, please do so and don't forget to remind your landlords to do so as well; every dollar counts! Don't forget to check out our website and Facebook for more information on our activities.

While we have enjoyed working with legislators from both sides of the aisle and have had success in getting some of our concerns taken care of, recent activity on the HB 2020, the Cap and Trade bill, compelled us to support the 11 Republican Senators who left the state to stop the passage of this bill. We have continually opposed this bill, but to no avail. It is our belief that this would be extremely hard on our industry as well as the rest of the industries in our state. If allowed to pass with the emergency clause attached it would be virtually impossible to get it to the vote of the people. Hopefully by the time you are read this the bill will be dead.

I hope you all have a safe and smoke free harvest season.



Lessons from NAWG and North Dakota

Blake Rowe, CEO, Oregon Wheat



After some 18 months of organizational drama, the end of June will likely see the departure of the North Dakota Grain Growers Association (NDGGA) from the ranks of wheat producing states that are members of the National Association of Wheat

Growers (NAWG). This is a very unfortunate outcome as our national voice and national funding resources will be diminished by the loss of the collective wisdom and resources of the North Dakota growers. As I look back on the process that led to North Dakota's decision to resign their membership, I think there are valuable reminders for us about how to keep our national organizations running smoothly. It is always easier to look at success, but sometimes you learn (or relearn) better lessons when things go sideways.

Problems are like infections, if you don't address them, they get worse. There is a fine line between letting an issue go because it just isn't worth fighting over and letting an issue go unaddressed while it eats away at the working relationships and goodwill in an organization. There is no perfect answer for when you have to act, and it is usually only obvious in hindsight. That said, when an issue becomes a major distraction from the mission of the organization, when it occupies hours of hallway conversations and countless phone calls, it is probably time to force the issue. It may still cost an organization a member, but it might actually be the best path forward.

If you can't explain the problem, it can't be solved. When you approach an organization with a request (or demand) for change you have to be able to articulate both the specific issue and how your proposed solution addresses the problem. If you can't explain the problem in terms others can understand, explain how your proposed solution addresses the problem, and explain why/how your proposed change will be beneficial to other members besides yourself, your request will appear arbitrary and will likely be poorly received and unsuccessful. Statements like "you know what the problem is" while refusing to

engage in open discussion, will not win any support and blocks the organization from exploring alternatives and compromise which might get consensus support.

In associations, coalitions are more important than size. Large and small are open to interpretation. A large wheat production state like North Dakota has a Congressional delegation of three, two senators and one representative. A smaller wheat producing state like California has a delegation of 55 and Texas, somewhere in the middle by production, has a delegation of 38. Which is the large state, which is more important? It depends. Similar contrasts show up whether you talk acres, average farm size, number of farmers, etc. Large is in the eye of the beholder. The bottom line is that to be effective you need as many as possible working the issues where there is consensus, which usually means everyone has to flex a little.

In associations, financial reserves are critical. Typical associations spend a large part of their budget on staff and office space. Loss of a dues paying member or a crop issue that forces cuts to dues can become an instant crisis if there aren't sufficient reserves to bridge the gap in funding. A reserve equal to a year's operating expense is a common rule of thumb. It may not solve the problem of a lost member, but it gives the organization the breathing room to make thoughtful adjustments to their programs rather than emergency cuts.

Congressional clout is fleeting. Clout in Congress flows from the seniority, committee assignments, and leadership of a state's delegation. The problem is that elections and retirements can turn strength into weakness overnight or vice versa. One of the benefits of acting as part of an association like NAWG is that at any given time, you will gain from the legislative clout held by other members. The catch is that you only get it if you stay in the association; go off on your own and you get a lot of polite "thanks for stopping by" after your five minute visit with the office intern (nice folks, but not much influence).

Let go of history. I have lost track of how many times I have heard people reject and condemn an association, group, university, etc., because of an offense that happened years ago under different managers, officers, board members, and often very different political or economic circumstances. The

- Continued on page 6

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- Continued from page 4

current board members likely don't know what happened, have no way to fix it, and don't feel a responsibility to address it. The offended party may never forget it, but they may need to accept that its "water under the bridge" if the organization is going to be able to move forward and be effective.

Here's to hoping that all involved in the NAWG-NDGGA saga will gain from the experience and that we will find a way to get past the history, mend the fences and get back together. The wheat industry certainly needs one voice at the national level to be most effective for our growers.



Proposed National Checkoff Program to Promote Breadbasket Products

Shanna Hamilton, Director of Communications

The Grain Foods Foundation (GFF), made up of flour milling, baking, and food manufacturing companies, is leading an effort to create a new checkoff program to promote bread and other products made from wheat. The proposed Grain Checkoff Program is in response to the steady decline of commercial bread unit sales per capita, which have decreased approximately 1.5% steadily since 2011, and forecasted drops in wheat flour over the next 5 years.

The wheat flour industry expects to reverse this trend and increase domestic demand by raising money through the checkoff paid by U.S. millers and bakers. "Checkoffs empower the industry to establish its own goals and decide for itself how to best develop new markets and strengthen current markets' specific commodities. They benefit the industry through increased sales, consumer awareness, and higher overall demand." (who said this?)

The Grain Foods Foundation, led by Executive Director Christine Cochran, conducted a stakeholder assessment in the spring of 2017 which included a steering committee of companies representing millers and bakers. The assessment conducted was aimed at producing an economic analysis of potential benefits from a checkoff program and a consumer survey.

The proposed checkoff would be a 16-cent assessment per hundredweight (100 pounds of flour, often abbreviated as "cwt") of wheat flour used to produce "breadbasket products," including fresh and frozen bread, rolls, buns, bagels, naan, pitas, other flatbreads, English muffins and biscuits. The checkoff would not include cereals, bars, crackers, pies, cookies, cakes, tortillas and products that a customer would purchase frozen.

The Vision

- In 3-5 years, increase unit sales to reverse current sales decline
- Change the perception of bread
- Produce research to strengthen our understanding of the goodness of bread
- Rally a focused group of bakers and millers to fund a promotional effort focused on the breadbasket that will have a lasting impact on the industry
- Invest collectively on a business challenge that would, otherwise, go unaddressed

Bakers would pay 85% of the checkoff, or 13.5 cents per hundredweight, while millers would pay 15%, or 2.5 cents. According to GFF, bakers would be responsible for collecting the assessments from millers and remitting them to the board along with their assessments. The checkoff could raise approximately \$15 million each year to invest in marketing and research. The checkoff program and funds would be managed by an industry appointed Board of Directors. The USDA's Agricultural Marketing Service would provide oversight to the program and the Board would be required by to do a return on investment analysis and hold a referendum of assessment payers within 3 years.

4 Key Program Elements

01

Consumer Media

Objective: Change the Perception of Bread Among Consumers and Influencers

02

Retail Channel Development

Increase unit sales at the retail level through an integrated campaign including multi-category perimeter displays, Retail RD activation; and utilize retailer platforms in and out of store to carry campaign message

03

Food Service Channel Development

Objective: Increase unit sales by food service by engaging in menu and product development as well as pre-competitive innovation to deliver new and better products for food service and institutional feeding.

04

Science/Nutrition Research

Conduct strategic research to fill key gaps in the scientific literature to bolster our understanding of the goodness of bread and activate a national conversation among food and nutrition opinion leaders

Historically, well-run checkoff programs can result in a \$5 to \$15 return on investment for every dollar invested, so GFF members have reason to be optimistic about the effort being successful.

So how does Oregon wheat fit into the checkoff program? Our wheat will only have a minor role in the checkoff, primarily because roughly 90% of our production is exported as whole grain (not milled), so it wouldn't be subject to the checkoff. In addition, much of what we grow that goes to the domestic market is soft white wheat, which is used mostly for non-bread products like cakes, pastries and cookies, again not subject to the checkoff. However, to the extent that the marketing and research work funded by the checkoff help increase overall wheat consumption, the general wheat market should see a long-term lift.

What is next?

The more formal process will include the industry submitting a proposal to USDA which would follow with USDA opening a public comment period. After the deadline for public comment commences it is up to USDA to authorize, or not, the checkoff program. If the program is authorized the industry leaders would then nominate Board of Directors who would oversee the program trial launch. The Industry has up to three years to hold a referendum to vote the program in or out officially.

Grains Food Foundation:

<https://checkoff.grainfoodsfoundation.org/>



Why a Checkoff?

- Mandatory industry marketing programs make sense when there are shared problems at a scale that defy individual company solutions.
- Enhance industry reputation among consumers and value chain stakeholders.
- Give consumers confidence to consume the breadbasket of products they know and love.
- Change retailer and food service perceptions of the role of breadbasket products.
- Drive growth, market share, revenue and profits.

Program Structure

- Total Annual Budget: \$15million
 - o Allocation: 85% Bakers; 15% Millers
- Assessment: \$0.16 per CWT of wheat flour used to produce breadbasket products
 - o Bakers: \$0.136 per CWT of flour
 - o Millers: \$0.024 per CWT of flour
- Collection: Bakers are responsible for collecting the assessments from millers and remitting them to the Board along with their own assessment on a quarterly basis.

Oregon Farmer Gives U.S. Wheat Customers Lasting Memories of their Visit

Amanda J. Spoo, USW Director of Communications

“How’s the weather up there?” That was Ric Pinca’s first question to Darren Padget when they met. At a height of six feet, eight inches (203 cm), Darren towers over Pinca’s five-foot, six-inch (168 cm) frame and most people that he meets. Pinca, the executive director of the Philippine Association of Flour Millers, recalls, “I couldn’t help but ask. But what has impressed me the most since then about this gentle giant is his passion for farming, commitment to his customers and a willingness to go the extra mile to resolve issues that affect the buyers of the grains he and fellow U.S. wheat farmers grow.”

Pinca is just one of several U.S. wheat overseas customers that have visited Padget’s farm in Oregon’s Sherman County. Every year, U.S. Wheat Associates (USW) sponsors several trade delegations of overseas buyers, millers, bakers and government officials to visit the United States to learn about the U.S. grain marketing system and see how the wheat moves from the farm to the ports. Conveniently located two hours east of Portland, where many of the delegations visit because of its proximity to many stops along the supply chain, Padget’s farm has become a common destination. Over the past decade, he and his wife Brenda have hosted an estimated 25 groups, mostly from Asia and Latin America, including a large group from the 2016 Latin American and Caribbean Buyers Conference.

“Customers enjoy making a direct connection with the farmer because they really want to know where their food comes from and value learning about the personal commitment to high quality, safety and sustainability that U.S. farmers work toward,” said Steve Wirsching, USW Vice President and West Coast Office Director. “The support and involvement of our state wheat commissions with these delegations is a vital part of creating an eye-opening experience for them.”

A Day on the Farm

On the way out to the farm, trade delegations often visit an export facility in Portland before heading up the Columbia River to a barge loading terminal in The Dalles, Ore. During harvest, the delegations can see how soft white wheat from local farms is unloaded, separated by protein class and other quality characteristics, and loaded on barges for shipment to Portland. Next, they stop at the local cooperative seed



plant where they are shown how the certified seed system works and how it helps maintain the high wheat quality that customers expect. Once they reach Padget Ranches, where their son Logan is the fifth generation, Darren shows them the equipment, the shop and repair facilities and eventually the wheat fields. He makes it a point to emphasize the role farm practices play in producing quality wheat.

“When we first started hosting groups, I didn’t know what they wanted to see, so it’s been a learning curve for us to see what makes the biggest impact during their visit,” said Padget. “One way we have made a connection is through our GPS technology. Everyone has a smartphone, so even if you live in downtown Tokyo you understand that technology. So, we invite them up into the combine, turn on the autosteer and show them how we use that same technology for precision agriculture.”

Padget explains that some of the biggest “aha” moments are found in things that he takes for granted such as drinking water out of the yard hose, which comes from a well on the edge of the wheat field or taking in a view without buildings in the skyline.

“I was so surprised and impressed when I visited his farm,” said SW Yong, a purchasing manager with Daehan Flour Mills in Korea. “First by the farm size and second by his work. He tries hard to get better results for both yield and quality. We had an unforgettable experience when he let us operate his



tractor and showed us how farm machinery has developed in the United States.”

Joe Sowers, USW’s Regional Vice President for the Philippines and Korea, was one of the first USW staff members that Padget met with nearly 15 years ago to learn more about USW’s mission and the importance of developing relationships with overseas customers.

“Darren consistently goes well above and beyond the call of duty with trade delegations, generously offering his time and resources to host overseas guests at his farm on the Columbia Plateau above the John Day river,” said Sowers. “They get an up-close view of the spectacular Pacific Northwest terrain where the wheat they purchase is grown. Darren’s investment builds trust and respect with buyers while at the same time travellers are enjoying a once in a lifetime, magical experience in the beautiful surroundings of U.S. soft white wheat country.”

Bridging the Gap

Padget started his involvement in wheat leadership with the Oregon Wheat Grower’s League and the National Association of Wheat Growers, before eventually joining the Oregon Wheat Commission. Currently, he serves on the USW Board of Directors as Secretary-Treasurer and is slated to serve as Chairman in 2020/21.

When he hosts trade delegations on his farm, Padget invites friends and neighboring farmers over for a barbecue, to bridge the gap between the farmer and the end-user. Padget says the involvement of his neighbors – who are always quick to lend a helping hand in preparing the meal – really makes the day unique.

“My goal is to show as many of my neighbors as I can what USW does for the farmer to build support for its activities,” said Padget. “They have really embraced the experience and do an excellent job of interacting with our guests. People take time away from busy days on the farm to be here.”

“My visit was an afternoon of fun and new friendships made as some of Darren’s neighbors joined in and brought more food than my tummy could hold,” said Pinca. “In Darren’s world, a neighbor is a fellow farmer who lives about 10 miles or more down the road. It was really nice of them to take time off from their farm chores just to meet us.”

Last summer, Padget and his neighbors started taking some of the visiting groups out on their boats on the Columbia River — a fun past time for their own families.

- Continued on page 10

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- Continued from page 9

“When you are out on the water, we find that the conversations are different, even compared to when we are standing in the field,” said Padgett. “When a barge goes by and you also have a railway on both sides of the river, the wheat is moving right past them and odds are some of that grain is destined for them. One guest from Singapore told us that she never imagined herself dangling her feet in the water off the side of a boat. That was an eye-opening comment for us on the value of our natural resources. These boat rides have created an intimate setting where you learn a lot more from each other.”

For Padgett, it has been interesting to watch his guests and neighbors grasp the experience with both hands and start to put faces and names together and understand the value of USW.

“When these buyers get a shipment of wheat they might say, ‘hey, maybe this came from Ryan Thompson’s place, I remember being there,’ because it really is about forming relationships. I mean you have to have a good quality product and economics always dictates things in the end, but people wanting to feel good about what they are buying and doing is a big part of doing business, whether its buying a latte from your local barista or buying a cargo of wheat out of Portland,” said Padgett. “USW is a worldwide organization that focuses on very localized grass roots efforts, so it is sometimes hard to put those together in words. But USW is there for technical and trade service and really helps facilitate those relationships. Sharing what the USW staff does for U.S. wheat farmers and the places they go on our behalf is really rewarding to me.”

Making Memories

When Padgett travels overseas and reconnects with the people he has hosted on his farm — often by sharing another meal where products made from U.S. wheat are served — it makes what he does come full circle.

“When someone says, ‘I was on your farm, it was the best part of my trip, thank you,’ that is so rewarding,” said Padgett. “That is why I do it. When you are half a world away and someone remembers standing on your dirt, that is pretty neat. Those experiences are what they are still talking about. So, you know it is not time wasted, but time well spent.”

“I have met a lot of U.S. wheat farmers in my three decades in the flour milling industry,” said Pinca. “They share the same ardor, industry and a common desire to reach out to their customers and processors of the grains they produce. That is what makes partnerships last.”

“We’ve had visitors from a lot of different countries, and I hope that we continue to host people from other parts of the world,” said Padgett. “Without the support of family, friends and neighbors, it would be just another visit; but because the service USW provides sets the U.S. wheat industry above our competitors, you want to help them make unforgettable memories while they are here. Making memories makes it worth it.”



Oregon Wheat Foundation Scholarships Awarded

The Oregon Wheat Foundation provides scholarships for high school seniors whose families are either grower members, students who work part-time for grower members or students whose family members are employed by growers' members of the Oregon Wheat Growers League.

OWF is pleased to announce a total of seven \$1,000 scholarships to high school seniors this year, representing six counties or regions. Students were evaluated on their community involvement, academic achievement and an essay on a wheat industry topic. Congratulations to each of the recipients!



Alexis Navarrete, graduating from **Ontario High School** plans to attend College of Idaho, studying biology with hopes to enter the dental profession. Alexis is the daughter of David Navarrete of Navarrete Farms. She participated in basketball, and softball, serving as team captain. She has participated in

FFA and Future Business Leaders of America (FBLA), is active in her community and works on her family's farm during harvest.

Payton Miller graduates from **Ione High School** with plans to attend Eastern Oregon University to study psychology with the eventual goal of becoming an occupational therapist. Payton is the daughter of Justin Miller and Stacie Ekstrom. She was active in FFA, Grange Youth and was a class leader all four years, class president as a senior. She excelled in tennis and volleyball and coached a youth volleyball team last year. She worked harvest two summers for local farms.



Luke Martin graduates from **Sherman County School in Moro** with plans to attend Oregon State University or Pacific University, to study engineering or economics. Luke is the son of Bill and Jill Martin of Martin Farms. He participated in basketball, football



and track, as well as National Honor Society, ASB, and FFA. Luke has been active in his community and has worked on the family farm and several neighboring farms.

Cole Kortge, son of Jeff and Cynthia Kortge of The Dalles, graduates this year from **Dufur High**



School. He has set his sights on studying agricultural science at Oregon State University. Throughout high school, Cole has been active in ASB, National Honor Society, 4H and FFA; he has served on various community service projects and works on his family's farm. He played on the school football and basketball teams and excelled in track.



Gavin Newton graduates from **Griswold High School in Helix** with plans to attend the University of Idaho Agriculture Systems Management Program, then returning to the family farm after graduation. Gavin is the son of Jeff and Sharilyn Newton. He was a member of the National Honor Society, and excelled

in several sports including cross country, basketball, and track. He was also the National History Day state qualifier where he placed first and earned a trip to Washington, DC. Gavin was also active in many community activities, including the Helix Heart of the Country Rodeo, and Outdoor School as a counselor.

Hannah Christman plans to study medicine in college, focusing on neuroscience, with hopes to pursuing a career in the treatment of diseases of the brain and nervous system. She is graduating from **Griswold High School in Helix** as ASB vice president. Hannah is active in Key Club, and FBLA, and competed in cross country, basketball, and track & field. Hannah worked all four summers for Newton Farms.



Blake Frost of Summerville is a graduate of **Imbler Charter School** and plans to attend either the University of Idaho or Oregon Institute of Technology to become a mechanical engineer. Blake has attained a GPA of 4.0 throughout high school, and 24 college credits from EOU, TVCC and WWCC.



He has also been a 4-year scholar athlete, competing in football and basketball. Blake has been active in his community, including 7 years of 4H competitions, building and maintaining motorcycle trails at Mt. Emily Rec Area, planting trees for La Grande Parks & Recreation, and was a counselor at the inaugural Imbler Outdoor School program. Blake worked grass seed and wheat harvest two summers for area farmers.



Columbia Basin Agriculture Research Center:



Here and Now...

Shanna Hamilton, Director of Communications

“Not a day goes by when we don’t use some aspect of research or a publication from OSU’s Columbia Basin Ag Research Center (CBARC or Pendleton Station) researchers and extension staff. They are our “go-to” source when we have a problem. It is our localized help for localized farming issues,” says Nathan Rea, Chair of the Pendleton Station Liaison Committee.

In a world of full of uncertainty, there is one thing members of the Pendleton Station Liaison Committee are certain of – they want to ensure that researchers from Oregon State University working on finding solutions to the critical agronomic and environmental challenges facing them. It is critically important that scientists, producers, and industry personnel work together to answer the tough questions facing local agriculture. CBARC staff have worked side by side with growers to find solutions to soil erosion, weed problems, disease outbreaks, and many other problems.

Rea points out, “We are in a competitive world and knowing the latest information on diseases and varieties for our production area is key to our sustainability as growers.” To assist in building an even stronger and more dynamic partnership between the cereal industry and CBARC, the Liaison Committee is working to build the Pendleton Station Endowment Fund. The fund exists to support the Station’s work through investing earnings from the Endowment into needed capital improvements, and equipment.

A fresh round of fund raising started last November and will continue strong in the coming months and into the future. Rea concludes, “Let’s build on the 90 plus years of the Pendleton Station being the “go-to” source for critical research for wheat farmers across the region.”



OWGL Secretary/Treasurer Ben Maney, presents OSU Pendleton Station Endowment Chair, Nathan Rea a check for \$25,000 on behalf of the Oregon Wheat Commission.

At CBARC’s Field Day in mid-June, the Oregon Wheat Commission contributed \$25,000 to the Endowment, fulfilling a pledge that was made more than 10 years ago to make the donation when the Endowment reached the \$100,000 mark. The Liaison Committee reported that the fund hit that level on June 11, 2019 and the Commission responded by presenting the check at the Field Day!

Let’s keep the numbers headed north by pledging to donate annually, directly to the Pendleton Station Endowment. To learn more how you can help research thrive at CBARC visit, <http://bit.ly/CBARC-Endowment> where you’ll find some great options for giving. Remember, designate your gift specifically for the Pendleton Station Endowment Fund.

And Down the Road.

Wally Powell, Chair, Oregon Wheat Commission



I have been wandering around CBARC for a long time. I believe that I first attended a field day with Roy Warner, Jim Terjeson, and others from PGG in 1973 or 1974. I have seen the station during the good times, as well as the not so good. Funding comes and goes in

the research world. Spirits and attitudes wander up and down, staff comes and goes.

A constant of course during a Field Day is the return of scientists now retired; it was great to see Dan Ball and others on the station. Another chance to visit with Kim Campbell from ARS-Pullman discussing her club wheat breeding program was a joy. You could always count on the club varieties to have a great disease package; no guessing.

Another constant during Field Days is the return of the more mature farmers to the station. You might have noticed Chris Williams helping an aging Mr. Johns out of the bus during each stop. And today? I am extremely positive moving forward. It is likely that, beginning three or four years ago, we entered another good or even great period for the station.

The scientists are relatively young, with great energy, and they care. Collaboration between scientists is much higher than during other periods. I also notice that when staff sees an issue on the station, they pull together to address the issue. There is no way the goat grass will remain at present levels on the station. The staff realizes the importance of addressing this issue as well as others.

Staff levels are still somewhat deficient, but funding is on the way to remedy some of those concerns. One of points I harp on is the need to translate research into the impact in dollars on the producer. The addition of an Ag. Economist as part of the ARS staff will help.

Staff have prioritized getting out onto farms, with the producers, for both conversation and research.

Younger growers are returning to the station and speaking to the scientists about their needs. This must continue. Scientists listening to the producers, leads to research needed by the producers. Producers listening to scientists explain research results, leads to

progress and dollars in the back pockets of the producers.

Stable staffing and stable funding are with us for the present. Let's not let this opportunity go to waste. Support the CBARC staff and support your Liaison Committee as they search for excellence. Better yet, join the Liaison Committee of the station closest to you and become part of the team.



Walking through trials at CBARC field Day June 11.



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Why is Oregon State University Breeding Club Wheat?

Bob Zemetra, Professor – Plant Breeding and Genetics, Warren E. Kronstad Endowed Chair of Wheat Research



At a recent field day while Mark Larson, the assistant breeder in the Oregon State University Wheat Breeding Program, was giving a presentation on his winter club wheat breeding project I was asked the following question by a private wheat breeding company representative. Why did the OSU Wheat Breeding Program have a club wheat breeding project

since club wheat is only 0.5% of the market share of wheat produced in the region? My response was that the presence of the club wheat breeding project demonstrates the key difference between a private and public breeding program, one is by necessity profit driven while the other is grower driven.

The OSU Wheat Breeding Program now has four primary breeding projects with several sub-projects to address the needs and/or desires of Oregon wheat producers. The four breeding projects are based on market class; soft white winter wheat, hard white winter wheat, hard red winter wheat and winter club wheat.

Soft White Winter Wheat (SWW): The SWW wheat breeding project is the main project of the breeding program. Recent releases include Norwest Duet and Norwest Tandem that were co-developed with Limagrain Cereal Seeds. A new release from the breeding program is 'Nixon', the result of a Tubbs x Skiles cross that has the best traits of each parent. Nixon has good stripe rust resistance, strawbreaker foot rot resistance, good yield potential in intermediate to high rainfall growing areas, good test weight, and excellent end-use quality. In addition to breeding SWW varieties with broad adaptability, some regions in Oregon need specific traits included in their wheat varieties. The program addresses these needs through sub-projects within the SWW breeding project. These sub-projects include breeding for herbicide resistance, resistance to unique diseases, and abiotic stress tolerance such as for drought or heat stress.



Figure 1. The advanced club wheat breeding line OR5170022 at Hermiston and Lexington May 2019

Herbicide Resistant Wheat: To address control of grassy weeds such as downy brome (cheatgrass) and jointed goatgrass the breeding program has been developing wheat varieties resistant to the herbicide Beyond and more recently to the herbicide Agressor. The breeding program is targeting release of two two-gene Clearfield SWW cultivars this year, 'OR2X2 CL+' and 'Appleby CL+'. OR2X2 CL+ carries two genes for Beyond resistance and two genes (Pch1 and Pch2) for strawbreaker foot rot resistance. The disease resistance package for this variety is unique among two-gene Clearfield varieties. OR2X2 CL+ has excellent stripe rust resistance as well and is targeted at the higher rainfall regions of the state where strawbreaker foot rot could be an issue. Appleby CL+ is a two-gene Clearfield variety that has an earlier flowering date and is targeted at the lower rainfall regions of the state where late season heat stress may cause reduced test weight and yield in late flowering varieties. Release of both varieties is pending final approval but both are expected to be released by this fall.

A second type of two-gene herbicide resistance is being incorporated into all four market classes of wheat at the request of Oregon wheat growers. Resistance to the Agressor herbicide would give Oregon growers another management tool for controlling grassy weeds. Introgression of the resistance gene is occurring rapidly with the first field tests for single rows of HRW planned in fall, 2019 and SWW in fall, 2020.

Soil-Borne Wheat Mosaic Virus Resistant Wheat (sbWMV): In irrigated and higher rainfall regions



Figure 2. Sourdough test bakes of 'Irv' (OR2110679) and 'Millie' (OR2130118H).

of Oregon there is a new disease slowly expanding in acreage, sbWMV. Spread by a water mold in the soil, once the disease is in the field it can't be chemically controlled, so the only control is resistant varieties. The OSU Wheat Breeding Program has released one sbWMV resistant variety 'Ladd' and is currently testing six lines for potential release in the SWW elite line nurseries and/or the statewide extension nurseries.

Low Rainfall Adapted Wheat: A request was made to the OSU Wheat Breeding Program by wheat growers in 2015/2016 to develop varieties with traits better suited to low rainfall areas. These traits would include earlier flowering/maturing for drought and heat avoidance and taller varieties to allow for adequate height in years when low moisture stunts growth. The program now has several generations of breeding lines being evaluated in the Moro, Ione and Lexington areas, that are earlier flowering and differ in height, to identify lines that meet the needs of the growers in that region.

Hard White Winter Wheat (HWW): The OSU Wheat Breeding Program has had a HWW breeding project for over twenty years. The challenge over those years was developing varieties with the stripe rust resistance, agronomic performance and good end-use quality. The breeding program has recently identified two HWW lines for release, 'Irv' and 'Millie'. Both have good stripe rust resistance, good to excellent yield potential and good end-use quality (Fig. 2).

Hard Red Winter Wheat: Some Oregon wheat growers have looked to diversify their wheat production by growing hard red winter wheat. One challenge for these producers, especially ones trying to grow HRW under high rainfall or irrigated conditions, is finding HRW varieties with the straw strength and height that can be produced without lodging. A good example of such a variety is Norwest 553. In 2013 the wheat breeding program started a HRW project to develop varieties that work better for Oregon growers. Hard red breeding lines are now in advanced testing and in the hard winter wheat statewide extension nurseries with the disease resistance, plant architecture and yield potential to address the issues of growing hard red winter wheat in Oregon.

Winter Club Wheat: For at least the past 15 years growers in the lower rainfall regions of eastern Oregon have been asking for club wheat varieties more adapted to Oregon growing conditions. In response the OSU Wheat Breeding program initiated a winter club wheat breeding project in 2016. Desired traits included; earlier flowering, reduced height and awns. In addition, any club wheat developed would have to have the seed characteristics and end-use quality expected from a club wheat. Using molecular markers to identify the unique glutenin protein profile found in club wheat, the program has been able to make rapid progress as can be seen with the advanced breeding line OR5170022 (Figure 1).

So why does the OSU Wheat Breeding Program have a club breeding project? For the same reason the breeding program has an Agressor herbicide resistant wheat project, a low rainfall region adapted wheat project and a hard red winter wheat breeding project, Oregon wheat growers asked for it. Responding to grower requests / needs regardless of potential market share is what sets public breeding programs apart from private breeding programs.



Project: Developing improved winter wheat cultivars for Oregon

Funding: 2018-2019: \$178,343

2018-2019 Grant Funding Level: \$35,000

Summary: Essential to the economic survival of Oregon wheat producers is the development of new winter wheat cultivars with improved yield potential, improved biotic and abiotic stress resistance/tolerance, and superior end-use quality. Market classes include soft white winter, hard white winter, hard red winter and winter club wheat. To achieve this goal the OSU wheat breeding program utilizes a combination of classical and molecular breeding techniques to develop cultivars with the desired traits as efficiently as possible. Recent releases include Norwest Duet and Norwest Tandem, soft white winter wheat varieties developed in collaboration with Limagrain Cereal Seeds. Varieties released or in the process of being released this year include the soft white winter wheat 'Nixon', two soft white winter wheat Clearfield varieties 'OR2X2 CL+' and 'Appleby CL+', and two hard white winter wheat varieties 'Irv' and 'Millie'.

OWGL End of Session Review – 2019 Legislative Session

Amanda Dalton, OWGL Lobbyist



Oregon's 6-month Session proved to be an exercise in survival and resiliency. Once again, Oregon's growers, farmers and ranchers faced significant threats at the beginning of the Session – attacks on farm methods, tools and an array of new costly mandates on all of Oregon. Nevertheless, OWGL remained a key

ally and messenger pushing back on many of the most dangerous pieces of Legislation, and together with our coalition partners, did overall see success. Below is a brief summary of major Legislation of interest.

Pesticide Related Bills

Attacks on the pesticide toolbox seem to be something we are faced with every year, and this year was no different – though proponents got closer than ever before. In 2019 we were successful at stopping over 12 attempts by Legislators to ban or restrict certain products on farm and forest land. The below marks significant wins for farmers and growers across Oregon.

What didn't advance:

- HB 3058 - Prohibits sale, purchase or use of pesticide chlorpyrifos. Requires State Department of Agriculture to place pesticide products containing neonicotinoid on list of restricted-use pesticides.
- HB 2619 - Prohibits sale, offering for sale, purchase or use of pesticide products containing neonicotinoid.
- HB 2980 - Sunset Extension for PURS (Pesticide Use Reporting System)
- HB 2493 - Prohibits aerial application of pesticide to land within watershed of McKenzie River or its tributaries or of Santiam River or its tributaries.
- HB 2656 - Prohibits certain forest operation activities on forestland that supplies drinking water for one or more public water systems.
- HB 3042 - Authorizes city, town, county or political subdivision to prohibit or regulate application of chemicals by aircraft.

- HB 3221 - Prohibits aerial application of pesticides on state forestlands
- HB 3044 - Requires business or individual carrying out application of soil treatment or pesticide by aircraft to record information regarding application conditions.
- SB 853 - Prohibits sale, purchase or use of pesticide chlorpyrifos. Requires State Department of Agriculture to place pesticide products containing neonicotinoid on list of restricted-use pesticides.
- SB 931 - Creates new notification regulatory program at Oregon Department of Forestry.
- SB 926 - Prohibits aerial application of pesticide on certain lands owned by state.

There were also attempts to attach triple damages to patent holders or licensed manufacturers of GE/GMO crops that did not advance.

Labor Bills

Labor bills were once again front and center in the 2019 Legislative Session. Proactively, we advanced SB 123, a bill providing some needed technical fixes to the Pay Equity law. This bill also came with legislative intent urging BOLI to reopen rulemaking to make needed changes to the way farm labor housing is treated.

As part of the broader employer community, we were able to defeat restrictions on employers ability to prohibit off-duty marijuana use, serious threats to the way we classify independent contractors and a broad sweeping liability bill that would have allowed unions or 3rd parties to sue on behalf of one, or a class, of employees. We also stopped an attempt to add personal individual liability into an adopted workplace harassment bill. This potentially devastating provision would have exposed all growers to personal individual liability to harassment they "should have known" about.

After extensive negotiations with key Republicans and the broader business community at the table, a compromise was reached on a statewide Paid Family Leave bill. HB 2005 provides all employees with 12 weeks of paid leave for leave related to the birth, adoption or fostering of a child, leave for serious health conditions of the employee or a family member, and leave needed for a victim of domestic violence. An additional two weeks of paid leave is available for individual with medical complications due to pregnancy. If an employee is currently eligible for leave under the Oregon Family Leave Act (OFLA) that applies to

employers with 25 or more employees, or the Family & Medical Leave Act (FMLA) that applies to employers with 50 or more employees, then the employee can access up to an additional 4-weeks of unpaid leave.

The cost of this insurance-pool program would be shared 60 percent by employees and 40 percent by employers, with a maximum payroll tax of 1%. Employers with fewer than 25 employees are not be required to pay the employer premium.

This negotiated bill, HB 2005, addresses employer concerns far more effectively than the other options that were on the table this year.

Key provisions of the final bill for small business owners include:

- Hard cap of 12 weeks paid leave + 4 weeks unpaid (if OFLA eligible) with 2 additional weeks for complicated medical pregnancy NOT 22 or 32 weeks as proposed by original bills.
- Must be employed for 90-days before job protections kick in – previous versions had no wait time. This is especially important for our seasonal and ag employers.
- Unlike any other proposals, small businesses under 25 don't pay the 40% premium.
- Employers with less than 25 employees don't pay the "employer premium" (40% of 1% of payroll)
- 4 Employer representatives on advisory council, including one that specifically represents a small employer
- Modified Job Protection language for small businesses that allows for employer discretion if job no longer available by inserting "as determined by employer's business needs"
- Private options for existing marketplace products
- Business assistance and grants for small businesses up to \$3,000 for worker-replacement costs that small businesses can access up to 10 times in one year
- Statewide preemption on all paid family and medical leave related issues.

Tax Bills

The Oregon Legislature adopted HB 3427 this Session. The bill places a commercial activity tax on all sales in Oregon over \$1M at the rate of .57% (.0057) which raises \$2B dedicated to education spending in Oregon's classrooms. The final bill includes an ability for businesses to deduct up to 35% of the greater of their labor costs or cost inputs and exempts groceries, fuel, alcohol, tobacco and marijuana taxes. The bill also includes a reduction in the personal income tax rates and applies to tax years beginning January 1, 2020.



"Good Samaritan" Law Signed by Governor. (Left to Right) Oregon Wheat CEO Blake Rowe, Senator Bill Hansell, Governor Brown, OWGL President Alan von Borstel and OWGL Vice President Clint Carlson

Towards the end of Session, a "fix" bill was also advanced. HB 2164 made an important clarification for ag co-ops, specifically clarifying that all "farmers sales" to an agricultural cooperative are exempt from the commercial activity tax calculation, not just "business done with or for members of an agricultural cooperative." Efforts will continue into the 2020 Session to further expand the definition of "groceries," which are also

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- Continued from page 17

exempt, to include all raw and unprocessed crops for eventual human consumption.

“Good Samaritan” Law Signed by Governor

OWGL partnered with Sen. Bill Hansell-R and Sen. Betsy Johnson-D to pass meaningful legislation that will give farmers and ranchers immunity from liability while fighting dangerous wildfires, such as the ones we saw devastate acres of wheat fields last summer. This bill was a priority for OWGL and saw OWGL CEO Blake Rowe and Board President and Officers Alan VonBorstel and Clint Carlson testify in Salem in support of the Legislation.

Cap & Trade

Oregon agriculture and manufactures saw a major victory in the final weeks of the 2019 Legislative Session with the defeat of HB 2020, the proposed Cap & Trade proposal. After passing out of the House with all Republicans and two Democrats voting ‘no’, the bill stalled in the Oregon Senate. HB 2020 would have required companies in the utility, transportation and industrial sectors to buy emission allowances in a state-run auction or on a secondary market to cover each metric ton of carbon equivalents their operations emit. Senate Republicans instigated a walk out in the final weeks, denying quorum and essentially locking up the bill. Senate President Peter Courtney also announced there were not the Democrat votes needed to advance the bill and upon return of the Senate Republicans the first order of business was to move HB 2020 back to Committee, killing it for 2019.

However, it will be back. Upon adjournment, Governor Brown announced she plans to use her Executive Authority to direct state agencies to implement some of the provisions contained in the bill and pursue legislation in the February 2020 Session. Conversations are expected to continue on this policy proposal throughout the 2019 interim leading up to the February 2020 Session.

Look for the complete OWGL 2019 Session Legislative Report online at www.owgl.org

Nixon and Appleby CL+ Soft White Winter Wheat – The Rest of the Story

R.S. Zemetra and C.A. Mallory-Smith

One of the privileges of a wheat breeder is naming the wheat varieties when they are released. Many times this is an opportunity to acknowledge people or families that have made major contributions to Oregon State University, the Oregon wheat industry, Oregon agriculture, and in many instances all three. Such is the case for two of the new soft white winter variety releases from the OSU Wheat Breeding and Genetics program: OR2121086 soft white winter wheat that will be named 'Nixon' and OR12161250 CL+ two-gene Clearfield soft white winter wheat that will be named 'Appleby CL+'.

Nixon soft white winter wheat has been submitted to the Oregon Agricultural Research Station for release this year. It is a variety with one gene for strawbreaker foot rot resistance (Pch1), good stripe rust resistance, good straw strength, good yield potential, and good to excellent end-use quality. The variety Nixon is named after Bob and Jean Nixon. The Nixons farmed in the Willamette Valley and grew wheat on their farm since the 1940s. They had an intense love for the land and agriculture in the Pacific Northwest. Bob and Jean were partners in both marriage and business. They were active in the Oregon Wheat Growers League and the Oregon Wheat Commission with Bob Nixon serving as chair of the Oregon Wheat Commission from 1976 to 1977 and Jean Nixon serving as chair of the Oregon Wheat Commission from 1992 to 1993. This may make them the only couple who both served as chairs of the Oregon Wheat Commission. They were also active in the grass seed and mint industry organizations plus a long list of community activities. Wheat production was always in their crop plan. They had a great deal of love and respect for the wheat industry, the growers they met over the years, and their association and respect for Oregon State University and the dedicated folks that work in the field of Agricultural Sciences.

Appleby CL+ soft white winter wheat is a two-gene Clearfield variety that will be submitted for release by the Oregon Agricultural Research Station summer of 2019. Appleby CL+ carries two genes for resistance to the herbicide Beyond and is an earlier heading variety making it more adapted to Eastern Oregon growing conditions. It is named after Dr. Arnold Appleby, a long-time professor of Weed Science at Oregon State University. He began his career at Oregon State University in the Farm Crop Department in 1959 as a research assistant. He spent 1962 and 1963 in Pendleton



Figure 1. OSU Wheat Breeder Bob Zemetra with Betty and Jerry Marguth at the seminar on the new soft white winter wheat variety Nixon. Betty Marguth is the daughter of Bob and Jean Nixon for whom the variety was named for their service to the wheat and agricultural industry in Oregon.

working at the Columbia Basin Ag Research Station and during this time, he completed his Ph.D. He returned to Corvallis in 1963 as the Associate Weed Science Project Leader and became Project Leader in 1969. He retired in 1992 but continued to contribute his time to the Crop and Soil Science Department until his death December 6, 2018.

Dr. Appleby strove to find solutions to real problems for Oregon farmers. He addressed weed management in many systems across the state. He was instrumental in conducting research to obtain registrations for many of the herbicides used in Oregon. He worked closely with the Wheat Breeding Program led by Dr. Warren Kronstad to address weed management problems in wheat. Growers knew him and respected him and he respected them. His influence is still felt today in many agricultural industries across the state both because of his impactful research and the people he helped educate. He was proud to be a teacher and taught both undergraduate and graduate weed science classes at OSU. Many of those students are still active in Oregon agriculture. Arnold also taught and mentored many international students who returned to their home countries and extended the

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knowledge that they learned during their time at OSU. Many of his former graduate students became well-known weed scientists in either academia or industry. His legacy goes on as those students trained future generations of weed scientists. Dr. Appleby was a nationally and internationally recognized weed scientist who influenced the discipline of weed science globally. Dr. Appleby received many awards over the years but was most proud of the teaching honors that he received. In 2009, he was named a Diamond Pioneer by the OSU College of Agricultural Sciences, and in 2010, he was inducted into the OSU College of Agricultural Sciences Hall of Fame, one of only two on-campus faculty to be inducted in the Hall of Fame since its inception in 1980. It seemed only fitting after all the contributions Dr. Arnold Appleby made to the science of weed control that a herbicide resistant wheat developed as a tool in controlling grass weeds in wheat be named in his honor.



Figure 2. Dr. Arnold Appleby standing outside the Crop Science Building on the Oregon State University campus.

What the Heck is Blockchain?

Shawn Campbell

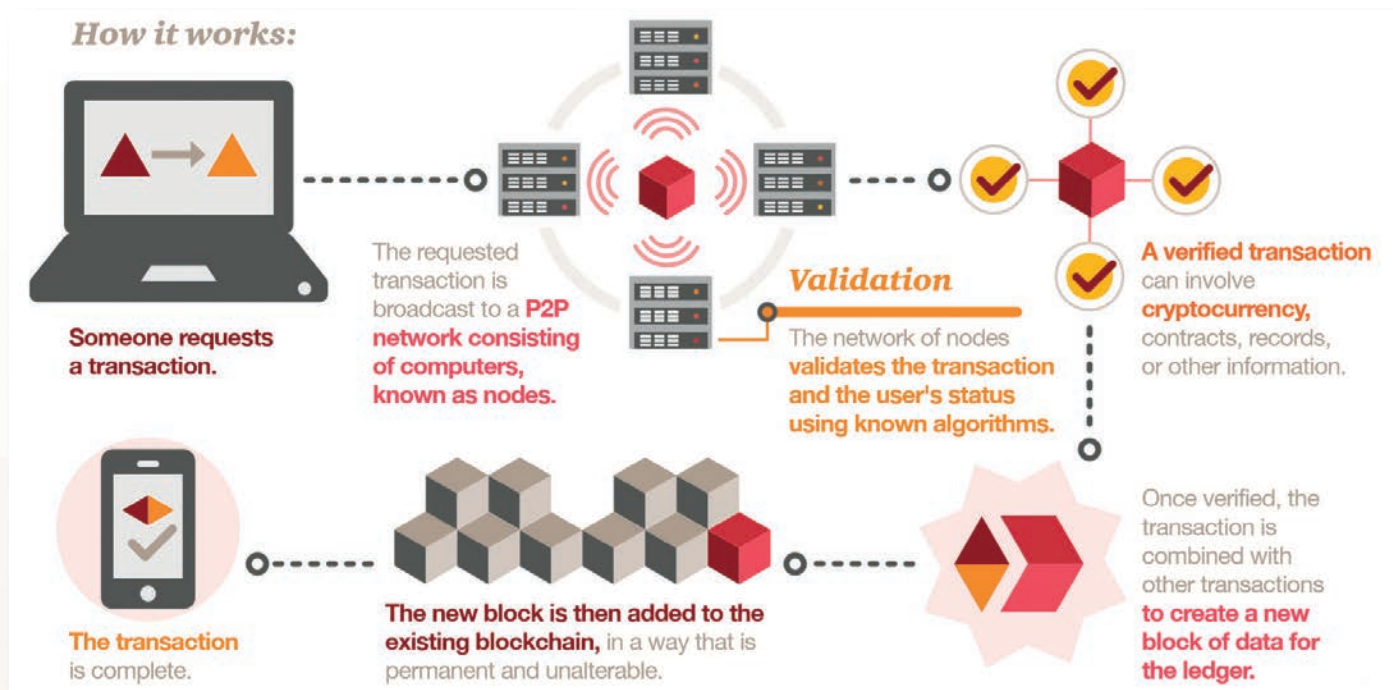
In January of 2018, commodity trader Louis Dreyfus made history by being the first firm to make a largescale agricultural trade using a technology called blockchain, selling 60,000 metric tonnes of U.S. soybeans to a firm in China. A normal commodity trade will involve numerous people (buyers, sellers, middlemen, bankers, government officials, etc.) exchanging dozens of documents (contracts, letters of credit, inspection certificates, etc.) via the sending of countless email attachments, faxes, and certified mailings. By using blockchain to create a single real-time digital repository for all of this information, Louis Dreyfus managed to reduce its document processing time to a fifth of what it considers normal, diminish the chance of human error or fraud to negligible levels, and cut its transaction time in half. In the low margin world of international grain trading, the results were nothing short of astounding, bringing up the question, what the heck is blockchain?

If you've heard the term blockchain before, its likely been in relation to Bitcoin and other such cryptocurrencies. Blockchain in essence is the underlying technology that makes Bitcoin possible, but its potential uses go far beyond the of world of speculating in unbacked digital money. Blockchain in layman terms is a decentralized online record keeping system, or ledger, stored and replicated on numerous computers and secured using complex mathematical algorithms. The resulting extremely secure database is easy to amend, as long as the user has the

proper password and credentials, but nearly impossible to alter after the fact. Since the data is replicated across the computers of all users, and no one computer on its own has the complete algorithm used to secure the data, no changes to the ledger can take place without the knowledge of all the users. This makes blockchain a self-verifying real time records system, allowing for faster and more transparent information sharing.

In the case of Bitcoin, a non-physical currency not backed by a public or private financial institution, blockchain solves the problem of how to verify when Bitcoin transactions take place. If used, blockchain notes every transaction, thus creating an unalterable legal record without the involvement of any third parties. In the case of the Louis Dreyfus sale, a blockchain was used to simultaneously provide all of the parties involved relevant documents, as soon as they were complete, and ensured that everyone had the same exact set of paperwork. However, the Louis Dreyfus sale is only scratching the surface of the possibilities for blockchain to be utilized in the trading of grain.

Numerous startup companies in Australia are currently experimenting with using blockchain in a similar fashion as the Louis Dreyfus deal, only at the farmer level. Utilizing blockchain in this way would not only make it easier for farmers to track their contracts and transactions



but is also expected to improve the ability of farmers to sell their crops to a wider array of buyers. Currently farmers tend to sell their grain to local groups with whom they have built up a level of trust over time. While other deals at times do take place, these tend to be through third parties who charge a fee for their involvement. This makes sense given possible risks like delays in payment after delivery. Even if a check is written at the time of delivery, a risk still remains until the check is cashed. By utilizing blockchain technology, payment can happen instantaneously, thus removing any such risk and the need of middlemen to help alleviate it.

These same Australian firms are also working to develop cloud-based commodity management systems, which when combined with blockchain, would allow for the tracking of commodities throughout the supply chain by farmers, brokers, logistic companies, and buyers. One of these startups, a firm called Blockgrain, estimates that 30 percent of the value in bulk commodities is lost due to inefficient supply chains and the need and cost for intermediaries to track and verify transactions.

The idea of blockchain is creating a buzz across the agricultural sector. One area heavily focused on by advocates of the technology is the prospect of using it to track food from farm to table, creating unprecedented traceability which can be used by farmers to better differentiate their products and by food companies and government regulators to better ensure food safety. Combining blockchain with farmer records and sensors on farm machinery could give more farmers easier access to specialty markets; such as organic and local; by reducing

the cost and need for third party auditors. Farmers of produce and similar crops will undoubtedly have an easier time taking advantage of these opportunities because their products tend to be discretely identified and can be more readily traced through the supply chain. A box of apples from a single farm is easier to track than an elevator of wheat which may have come from many different farms.

The opportunity blockchain will likely provide in the creation of new platforms to track and better utilize

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farm records and data may be of greater importance to many farmers. Most operations today use a mix of software, apps, spreadsheets, written notes, and memory to keep track of their data. Blockchain based platforms might consolidate this data to a single source, allowing farmers to not only take better advantage of the data they have, but also allow them to more easily share it with farm service providers and buyers, perhaps improving the services that they receive and the prices they are offered. In this increasing world of big data, it would also help farmers protect their data. The eventual goal of such platforms would be to fully digitize and automate agricultural record keeping and quality control, improving the farmer's bottom line and long-term sustainability.

In the end, most of us will likely enjoy the benefits of blockchain technology without ever realizing it. Blockchain is not a product, but a technological foundation upon which the future of digital agriculture will be built. As we move deeper into the world of 21st century farming, blockchain technology will undoubtedly play a part across the agricultural sector, perhaps in ways we don't yet understand.



Whole Wheat

ORANGE CINNAMON ROLLS

Ingredients

1 1/4 cups warm water (110° - 115°F)
2 packages active dry yeast
1/2 cup nonfat dry milk powder
6 tablespoons butter, melted
6 tablespoons honey
1 egg, beaten
1 teaspoon salt
3 tablespoons wheat gluten
4 to 4 1/2 cups whole wheat flour

Filling

1/4 cup butter, softened
1/3 cup honey
1/2 tablespoon orange peel, grated
2 teaspoons ground cinnamon
2 teaspoons flour

Directions

Preheat oven to 350°F.
In large mixing bowl, combine yeast and warm water until dissolved. Blend in dry milk, butter, honey, egg and salt. Add 2 cups whole wheat flour plus wheat gluten to mixture. Beat with mixer on low speed until smooth. Gradually add enough of the remaining flour to make sticky dough. Knead 10 to 12 minutes with dough hook or by hand until smooth and elastic. (Avoid adding too much extra flour, the dough should be slightly sticky for a moist roll.)
Place in a warm greased bowl, turning to coat top. Cover loosely with plastic wrap and towel; let rise in a warm (80°F) place until double in size. Punch down dough; cover and let rest for 10 minutes.

Filling: Beat butter, honey, orange peel, cinnamon and flour until creamy. Roll dough into 18 x 15-inch rectangle. Spread the butter mixture to within 1/2 -inch of edges. Starting at the 18-inch side, roll dough tightly, jelly-roll fashion. Seal edge by pinching with fingertips. Slice into 1 1/2 -inch pieces to make 15 rolls. Place in greased 13 x 9 -inch pan.

Cover and let rise until double in size.

Bake in oven for 20 to 25 minutes or until done; cool 10 minutes. If desired, mix together 1/2 cup confectioner's sugar and 2 to 3 teaspoons orange juice; drizzle over rolls and serve.



OREGON WHEAT
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Calories/Serving: 260 calories/serving
Servings: Provides 15 rolls/servings

Nutrition: One roll provides approximately: 260 calories, 7 g protein, 42 g carbohydrates, 5 g fiber, 9 g fat (5 g saturated), 35 mg cholesterol, 42 mcg folate, 2 mg iron and 255 mg sodium.
Source: Wheat Foods Council

OREGON WHEAT

2019 PHOTO CONTEST

Enter to win a pair of Oregon Wheat Mud Flaps!

Submit your favorite harvest photos to info@owgl.org by September 1, 2019. Please only submit 1 photo per email.

- Include your name, farm name, location of photo and your phone number inside the email text.
- Photo must be in OR/ID/WA • High Resolution will be requested

Photos will be posted to Oregon Wheat Facebook page (with water marks) and the photo with the most "LIKES" on the Facebook page by October 1, 2019 will WIN a pair of Oregon Wheat mud flaps! The top 10 photos with the most "LIKES" will be entered into the 2019 Tri-State Convention photo contest in November.



**IT IS RAINING.
IT IS WET, AND IT IS MUDDY.
SLUGS ARE IN THE FIELD.
GAME ON.**

Introducing your first defense for slug control: Ferroxx AQ slug and snail bait.

When the conditions are sloppy, charge in with our new waterproof formulation. It is rain, mold and water resistant and packed into pellets that are highly palatable to slugs, eliminating bait shyness. Unlimited number of applications per year allowed with no retreatment interval. Zero PHI, 4 hour REI. Residue (MRL) exempt.

Ferroxx AQ
Because you can't sit on the sidelines.

FERROXX
SLUG AND SNAIL BAIT
AQ



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Gluten

We love wheat. It's what we do all day, every day.

Overall Winner, National Wheat Yield Contest 2018 & 2017
Quality Check Variety, Wheat Quality Council 2019

SUPERIOR GENETICS. PREMIUM VARIETIES. PROVEN RESULTS.

BRED FOR THE PACIFIC NW

UI Magic CL+ | best-selling CL+ in the PNW
LCS Shark | high performance + resists SBMV
Norwest Tandem | great yield & test weight
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