

DECEMBER 2022

# OREGON WHEAT

*An Official Publication of the Oregon Wheat Industry*

## IN THIS ISSUE

- 6 Extending Baked Goods Shelf Life
- 13 Zinc Nutrition in Wheat
- 16 Breeding for Wheat Disease Resistance



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## IN THIS ISSUE

- 3** My Two Cents Worth
- 4** Crop Quality Round Up: A Stellar Year for Oregon Wheat
- 6** Efforts to Extend Shelf Life of Baked Goods an Example of USW's Commitment
- 8** Farm Bill Future? NAWG Fly-In Highlights Priorities
- 9** 5th Generation Wheat Farmer Captures Photo Contest Honors
- 10** Oregon Wheat Producers Take Top Honors in National Wheat Yield Contest
- 10** NAWG Testifies Before the Conservation and Forestry Subcommittee of the House Agriculture Committee
- 11** Planting Season Marks A New Year for Growers
- 12** OWC Chair Column
- 13** Zinc Nutrition in Wheat
- 15** The New Year Brings New Laws and Regulations
- 16** Public-Private Collaboration in Breeding for Wheat Disease Resistance
- 18** 2023 Predictions: Cloudy with a Side of Meatballs?
- 19** Investing to the Next Generation: Applications Open for Oregon Wheat Scholarship
- 20** Hudson Nationally Recognized for Conservation Efforts
- 21** USDA Names Appointees to Oregon Farm Service Agency State Committee
- 22** Recipe: Buttermilk Cake with Huckleberry Sauce

**ON THE COVER:** Photo by EmmaLee Demianew

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**Ben Maney**

President

# MY TWO CENTS WORTH



Has it been a year already? What a year we have had here in wheat country. As this will be my last article as President of the Oregon Wheat Growers League, I can't help but reflect on the impact a single year has had for us as farmers and as an industry. Yes, we all have had some setbacks, but we have had some unexpected surprises throughout the year, and I think we are setup for another strong year in 2023.

As we notch another crop year under our belts (and our previous generations can agree), keeping track of our yearly challenges and accomplishments is important. However, this unique profession is a marathon, and we should look at our accomplishments and challenges in 3 to 5 year averages. For example, if we take our 2021 year, which was arguably the driest year on record, and then take this year which has been one of the wettest; what is the plan now? Hopefully next year will help us make some great decisions on where we want our farms operationally to be headed.

Next year looks to be a busy year with many questions and hopefully many answers. For the most part, our fall has given many farmers strong wheat stands going into winter. Deep furrow farms started seeding two days after harvest, while many no-till operations started fall seeding during the middle to end of September. Surprisingly, much of the seed that was seeded into dry dirt found the moisture and was germinating even before our big rains at the end of October. Inputs look to increase into the new year, and I have no idea where our markets will be. However, having a \$9.28 price guarantee for crop insurance should give our growers a little reassurance if our price begins to fall next year.

I believe farms as a whole are in a good spot going into 2023 from an operational and efficiency standpoint. However we will have plenty of business to attend to in regard to Farm Bill renewal and any bills being introduced at the State level. I believe this Farm Bill will have many new features and incentives to help us transition to more friendly climate smart practices. Climate smart farming practices are front and center

in today's news and many questions are being asked on how USDA is planning for the additional funding that is directed towards climate smart practices. Will new practices promoted within the Farm Bill be tied to how you farm? Will early adopters be recognized? How will the markets respond and what is the future for diesel? We will need all hands on deck to help advocate for our right to use products necessary for our farm operations now and in the future. Dalton Advocacy provides contracted lobbyist support for Oregon Wheat Growers League at the state level and has been doing a great job keeping our membership informed of when our voice needs to be heard.

I would like to be the first to introduce the 2023 slate of officers for the Oregon Wheat Growers League, which includes Collin Crocker for President. Collin lives in Benton County on the west end of the state. He will do a job great as President and is ready for the upcoming challenge. Wade Bingaman from Union County is on the slate to move up to our Vice President position. I would like to also congratulate Erin Heideman from Morrow County as the proposed addition to the Executive Board for the Secretary/Treasurer position. Thank you to our county presidents for your consistent dedication to our members. There are not too many slow days on the farm these days and to ask our county presidents to take a few days off for meetings every few months is much appreciated.

Thank you to our CEO Amanda Hoey. She is on the go every day traveling the Northwest staying ahead of the issues that are important to Oregon Wheat. Also, thank you to Cassandra Franklin, our Membership Coordinator/Administrative Assistant. If you have not met Cassandra, please stop in at our Pendleton office and say hi. She keeps the office running at top notch and is always working on new Oregon Wheat hats. I would like to welcome Jason Flowers who will fill the Program Director position for the League in Pendleton. Jason brings direct farming experience to the position and is going to be a valuable asset in helping farmers navigate new climate smart practices within NRCS for our Oregon wheat producers.

Finally, I want to say thank you to our members for letting me serve as your President for the 2022 year.

**CORRECTION:** On page 16 of the October 2022 issue, a photo attributed to Andy Silcox should have been attributed to Kari Pinkerton Silcox. We regret the error.

**CONTINUED ON PAGE 4**



## CONTINUED FROM PAGE 3

I have had a wonderful year meeting many new faces and learning much more than I anticipated though the League side which has helped me make better decisions for the future of my farm. Thank you to my family and my wife Julie; this has been a good but crazy year for our family. Julie does an amazing job keeping the farm rolling while I am away. Without my whole family support, I wouldn't make it out the front door.

From my family to yours: I hope you all have a wonderful holiday season with family and friends with time to reflect on

a successful year. We as farmers have the best career on the planet and taking time to tell our story and reflect will make us much stronger for the future. Thank you again and please don't forget to do your rain dance.....and maybe a snow dance for good measure.

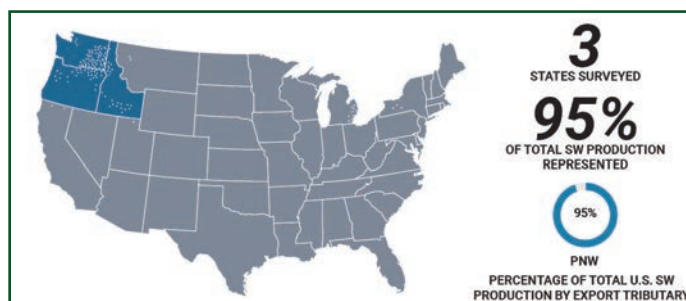
Merry Christmas!



# Crop Quality Round Up: A Stellar Year for Oregon Wheat

The return to more normal growing conditions for the 2022/23 Pacific Northwest U.S. soft white (SW) wheat crop provided not only an increase in exportable supplies, but a higher quality grain product. The data is reflected in the annual PNW Soft White Wheat Quality report produced by the Wheat Marketing Center. The report development and the crop quality sampling activities are all supported in part through Oregon Wheat Commission funding. It is used extensively in working with our trading partners and markets.

In summary, the soft white this year has very weak to medium gluten strength and good finished product characteristics. The composite results come from analysis and testing of samples from elevators in Washington, Oregon




and Idaho by the Wheat Marketing Center. The Federal Grain Inspection Service graded and tested wheat protein content.

## 2022 Crop Highlights

Estimated 2022 SW production is 6.9 million metric tons (MMT), a 46% increase from last year's 4.8 MMT drought-stressed crop, and similar to the 5-year average of 6.5 MMT. The sampling testing and composite reflects:

- The overall average grade of the SW and Club crop is U.S. No. 1
- Test weight SW average of 61.0 lb/bu; Club averages 60.6 lb/bu
- Protein (12% mb) average of 9.5%. Club averages 10.1%.
- Moisture average for SW of 8.9%. Club averages 7.8%.
- Falling number average is 340 seconds or higher for all SW composites and 356 seconds for Club.

The full report is available through the Wheat Marketing Center website and includes Flour and Dough data, along with Bake Test data for sponge cakes, cookies, pan breads and Chinese southern-type steamed bread. 



**Soft White Testing.** The Wheat Marketing Center (WMC) supports the annual effort to evaluate new crop quality. Samples are collected and sent to WMC for testing. In 2022, the WMC tested 404 soft white samples and 53 Club samples. Photo by the Wheat Marketing Center.



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USW Baking Consultant Roy Chung leading a bread baking course at the UFM Baking and Cooking School in Bangkok, Thailand. (Photo courtesy of UFM)

## Efforts to Extend Shelf Life of Baked Goods an Example of USW's Commitment

Expanding the window of time breads and cakes remain fresh would help retailers, food distributors and bakers around the world broaden their customer bases and grow their businesses. It would also benefit the U.S. wheat industry, which provides a key ingredient for baked goods in international markets. But can the window really be expanded? U.S. Wheat Associates (USW) believes it can.

In an example of USW's commitment to service, the organization's technical staff and consultants have combined knowledge with experience to extend the shelf life of bakery products. USW has "explored all possibilities" to develop processes and procedures that result in products remaining fresh for days – even weeks – longer than current standards.

### Eager to Share the Knowledge

USW, which plans to conduct educational courses late next year or early in 2024 to share what it has learned on the topic, is confident its classrooms will be full.

Most of USW's work on extending shelf life has been

conducted in Southeast Asia, but the lessons learned apply to every bakery across the globe.

"In Southeast Asia, a typical shelf life of bread is seven days, and the maximum shelf life is about 10 days," explained USW Baking Consultant Roy Chung, who is based in Singapore. "For large bakeries and food distributors, extending it beyond that 10 days would mean they could sell baked goods in towns and villages farther away from their manufacturing base. Retail markets would benefit. Consumers would benefit. Everyone up and down the supply chain would benefit, too."

USW is planning to conduct educational courses to share what it has learned about extending the shelf life of bread and other baked goods. Lessons taught in the courses will apply to bakeries in every region of the world.

### The 'Squeeze Test'

Shelf life is defined as "the time during which a freshly-manufactured product remains acceptable to the



consumer.” Of course, consumers in each region have different tastes and preferences, but the main goal of extending shelf life is universal: The product must pass the “squeeze test.”

The test plays out every day, in every grocery or supermarket. A shopper eases up to a bakery shelf, positions a hand over an unsuspecting loaf of bread and gently squeezes in order to judge the freshness of a prospective purchase.

USW’s work aims to help more loaves and baked goods pass the squeeze test long after leaving a baker’s oven. The result would be more consumers in more places having the ability to purchase the products. That in turn creates more demand for U.S. wheat.

### Enemies of Shelf Life

According to Chung, the two major factors that lead to failure in extending shelf life are mold and staling.

“These are separate issues that must be tackled separately, and those are the things we have been working on,” he said. “The mold problem involves things like sanitation, moisture, temperature, relative humidity, water activity and the use of preservatives. The staling problem involves formulation and ingredients selection.”

Tools and formulas in the effort are many, including natural gums and enzymes, sugars and fats, and chemical additives and alternatives to chemical additives. Packaging innovations are being addressed, too, such as packing bread and other baked goods in airtight plastic under a modified atmosphere.

The tools and formulas used are designed to match consumer preferences.

**CONTINUED ON PAGE 8**



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**CONTINUED FROM PAGE 7**


For example, the European market is less accepting of additives. The typical shelf life of a loaf of bread was traditionally one day, but now is 2 to 3 days.

“This is achieved either by using very high-quality wheat such as hard red winter (HRW) or hard red spring (HRS), which have a slower rate of natural staling than some lower-cost wheats,” Peter Lloyd, USW Regional Technical Manager based in Morocco, said. “Our efforts in the European Union and Middle East regions also promotes the use of HRS wheat in bread as a way of getting to cleaner labeling (less additives), a growing issue in that part of the world.”

**Longer Shelf Life, Cleaner Labels**

The various requirements and preferences in different countries and regions makes the USW effort to extend shelf life of breads and baked goods an ideal subject for baker education.

And a perfect topic for USW’s planned training course and technical support for its overseas customers.

“There are many details involved in achieving the ultimate goal of reaching more consumers with quality bakery products made with U.S. wheat,” said Chung. “We are planning to offer a course that addresses all those details, and from the conversations we have had, there is tremendous interest everywhere.” 


## Farm Bill Future? NAWG Fly-In Highlights Priorities

In September the National Association of Wheat Growers welcomed multiple state members to Washington, D.C. to meet with Congressional members on the wheat industry’s 2023 Farm Bill priorities. Included in the representatives for the fly-in was NAWG Vice President and Oregon Wheat grower Brent Cheyne. State member representatives play a large role through the fly-ins to discuss the issues most pressing to the wheat industry.

The mid-term elections will determine the next steps in developing the new bill. “Right now, most commodity prices are pretty good, so the government’s not making any payments,” said Chandler Goule, CEO of the National Association of Wheat Growers. “Which means we have less money to write the next farm bill with.” Farm Bill negotiations are already six to eight months behind, Goule said. He thinks it will be “very difficult” to get a new bill authorized by September 30, 2023.

In the meantime, Congress continues its review of the 2018 Farm Bill. “With the 2018 Farm Bill set to expire in just over one year, wheat growers are meeting with lawmakers to discuss our 2023 Farm Bill priorities and to highlight the important role the Farm Bill plays in supporting rural communities and American Agriculture,” said Nicole Berg.




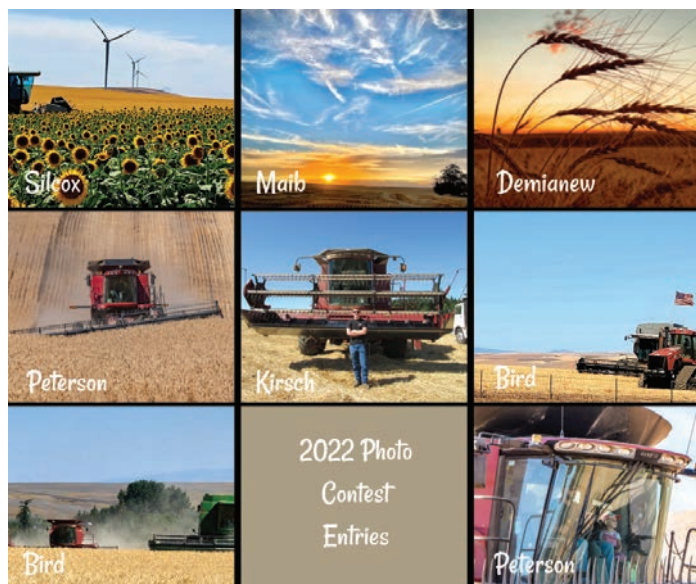
During the fly-in, NAWG held a panel with staff from the four corners of the ag committee and hosted a roundtable discussion with representatives from the U.S. Department of Agriculture. 



# 5th Generation Wheat Farmer Captures Photo Contest Honors

Congratulations to EmmaLee Demianew for her winning submission to the 2022 Oregon Wheat Photo Contest! EmmaLee is the fifth generation to grow wheat on her family's sesquicentennial farm. We would like to thank everyone who took part in the contest: Paul Bird, EmmaLee Demianew, Karen

Kirsch, Gerald Maib, Theresa Peterson, and Kari Pinkerton Silcox. Voting was extremely competitive, given the incredible shots captured. Take a look through an amazing wheat year with the photo contributions to the 2022 contest. 



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make a difference.

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# Oregon Wheat Producers Take Top Honors in National Wheat Yield Contest


The National Wheat Foundation announced winners of its 2022 Yield Contest, naming Bruce and Helle Ruddenklau of Amity, Oregon as the 'Bin Buster' national winner in the Spring Wheat Dryland category. In addition, Oregon growers took top honors in the Winter Wheat Dryland category with Derek Berger of Carlton, Oregon in first place and Wes VanDyke of Cornelius, Oregon placing second in the Spring Wheat Irrigated category.

Oregon producers recognized through the competition planted a mix of public and private varieties. The winning entries were concentrated in the Willamette Valley. Western Oregon provides a unique environment for the dryland category. "To say this is dryland is a little misleading," Bruce Ruddenklau noted. "Yes, we are dryland production, but with irrigation supplied by Mother Nature." Ruddenklau's entry in the 2022 wheat contest was a hard red spring variety bred with a disease resistance package. They are growing for a specialty market for soy sauce production which requires extra management but does offer a premium in return.

The Foundation's National Wheat Yield Contest offers growers the opportunity to compete with farmers from across the United States and improve their production practices through new and innovative techniques. The contest recognizes winners in two primary competition categories: winter wheat and spring wheat, and two subcategories: dryland and irrigated. The top yield winner in each of the four categories is dubbed the "bin buster" winner.




Helle and Bruce Ruddenklau. Photo Credit: Lynn Howlett.

Contestants must prove their wheat meets Grade 1 or Grade 2 standards to be ranked in the contest. Samples of the winning grain undergo further quality testing to see if the winning wheat can hit a list of quality targets. In 2022, a baking test was added to the contest's quality testing. Those results will be announced in December. For more details on the National Wheat Yield Contest or to consider an entry for the 2023 competition, visit [yieldcontest.wheatfoundation.org](https://yieldcontest.wheatfoundation.org) 

## NAWG Testifies Before the Conservation and Forestry Subcommittee of the House Agriculture Committee

On September 20th, NAWG President Nicole Berg, testified in front of the Conservation and Forestry Subcommittee of the House Agriculture Committee, during their hearing entitled: "A 2022 Review of the Farm Bill: Stakeholder Perspectives on Title II Conservation Programs". President Berg highlighted how the Farm Bill voluntary conservation programs are

significant in terms of environmental benefits and assistance to farmers. Technical assistance, planning and engineering, and financial assistance in the form of cost share or incentives, provide farmers with the knowledge and economic incentive to be able to make a change in their operation or maintain a conservation practice. 



# Planting Season Marks A New Year for Growers

Dylan Frederick, Wayfinder Communications

Every year, fall planting marks a new beginning for wheat producers throughout the state. The previous year's crop has been harvested and a new hope and eager anticipation begins to build toward next year's crop. In October, I visited several farms to get a first-hand look at the winter wheat planting process and hear the perspective of some of our growers.



Photo by Lance Peterson.

Overall, planting for winter wheat was on track in terms of timing, despite dry conditions in September and early October. Early on the dry conditions made planting challenging, but producers were pleased with precipitation received in late October and the anticipation of another La Niña weather pattern this year. Wade Bingaman, Baker/Union County League President, had finished planting just prior to my visit. He noted “We usually get a rain if not in September, in early October so that we can get everything planted and everything will germinate. It was late enough into the season that we wanted to get it planted to get it into the ground.”

The October rain that followed directly after my visit improved conditions, particularly in the dryland areas. For Umatilla County League President, Emery Gentry, he had just finished all of his planting for the season and was finally getting the rain he had been waiting for. He was excited for what would come in next year's crop with the much-needed rain supporting good seed germination.

Selection of the seed varieties was a topic at all of my farm visits. Morrow County League President, Erin Heideman, reinforced how valuable the extension services and research partners are during planting season and the value of the investments of the producer assessment funds through the Commission to supporting variety analysis. Erin stated that “We pay really close attention to the extension service and what the wheat breeders do. We go to all the trials and get the information we need to make a decision based on the market trends, and what's going to do the best for our soil type and moisture.”


Growers had a positive outlook for their winter wheat plantings. We are excited to share a few photos of the ‘new year’ for the winter wheat crop from our members. 



Photo by Erin Heideman.



Photo of Padget Farms.



Photo by Kari Pinkerton Silcox.



Photo by Thad Eakin.



## On a High Note

**Dana Tuckness**

OWC Chair

## OREGON WHEAT COMMISSION

While standing in line at the local farm store I noticed neighbor Steve standing behind me. We exchanged greetings and then he said, “I read your article in the wheat magazine. Why don’t you write an article on when I should sell my wheat?” Now this farmer is one of the best operators in the area, so I was a bit surprised at his question, mostly because I realized I was not the only farmer in Oregon who had missed the top of the market and was sitting on a pile of wheat yet to be sold (misery may love company but it doesn’t put any money in your pocket). After over forty years of selling crop after crop of wheat you would think it would get easier, such is not the case.

I remember one time my wife Kathy came out to the shop (this was in the 80’s, we hadn’t been married very long and she wasn’t raised on a farm) to tell me Dentingers had called, and the price of wheat was up considerably. “Do you want to sell?” she asked. I told her to decide and call them back. Her response was “I don’t know anything about selling wheat!” To which I replied “neither do I.” Well, she sold the wheat that day, and that happened to be near the market high that year. Problem is, she won’t take on that responsibility anymore. She refers to it as “leaving on a high note.”

Speaking of marketing wheat, a good place for information is the Tri-State Grain Convention which is coming up soon (November 29 thru December 1) in Coeur d’Alene Idaho. If you have never been, you should really consider going. There is a wealth of information from all kinds of industry representatives, educational breakouts, and an exhibit hall. Some of the breakout sessions this year cover the wheat market outlook both in the Pacific Northwest and globally, crop insurance updates, fertilizer management and supply chain issues. It is also a time for members of your Oregon Wheat Commission to meet with their counterparts from Idaho and Washington to discuss issues of concern in the Pacific Northwest. There is also the Oregon Wheat Growers League’s annual meeting and awards banquet. The final evening will be the scholarship auction, (with lots of great items from all three states) which is where a good portion of the money comes from that goes annually to 12 Oregon seniors that are from wheat growing families or employees of wheat growing families to help further their education.

“

I attended one of these workshops several years ago and I must admit, I was truly amazed at the work being done at the WMC.

Another upcoming event which is sponsored by the Oregon Wheat Commission is the grower workshop which takes February 28 thru March 1, 2023. This is a must for anyone that grows wheat in the state of Oregon. If you have never been, a highlight includes a visit to the Wheat Marketing Center (WMC) in Portland. This is your chance to see the work being done and actually have a chance for a hands-on experience in the lab may include working with noodles, tortillas, cakes, crackers or cookies. The work being done here is to find the right type or blend of flours to find for use in the products our overseas customers want. I attended one of these workshops several years ago and I must admit, I was truly amazed at the work being done at the WMC. Crop quality testing is another service provided by the WMC, it was the first time I was actually able to watch a falling numbers test. The majority of the funding for the WMC comes from eight wheat state Commissions; it is nice to have it housed here in our home state. Other activities when I attended the workshop were visiting a large bakery, a trip to the Federal Grain Inspection Service (FGIS), a visit to the port to watch an overseas ship being loaded with wheat, and a tugboat ride with Shaver Transportation down the Willamette River to retrieve a barge that was in need of repair. It was an extremely interesting two days and well worth the time. If you are interested in attending, contact the Commission office at 503-467-2161.

Well neighbor Steve, I haven’t suggested when you should sell your wheat, but hopefully pointed you in the direction for information from people who know more about it than I do. Maybe by the time the next issue rolls around I will have hit the top of the market so I can “leave on a high note.”

**“The only way to know how much is enough, is to do too much and then back up a little” (Jerry Jeff Walker)** 



# Zinc Nutrition in Wheat

Larry K. Lutchter, Extension Agronomist, Ph.D.

This article deals mostly with effects of a zinc-oxide seed treatment on wheat production in moisture-limited environments of eastern Oregon. Results are an outcome of work conducted in Morrow County and/or Sherman County, Oregon.

## Field Work, Data Collection, and Statistical Analyses

Research was conducted in fields representative of many of those on the east side of the Cascade Mountain Range (Table 1). Collection and interpretation of data was accomplished using standardized research methods.

### “Bottom-Line” Summary

The zinc-oxide seed treatment, hereafter referred to as ZST, increased Morrow County wheat yields during a year when yield potential was 40 to 45 bu/acre (Table 2). The ZST had no effect in the 2019-2020 trial conducted at the Sherman Station. There was no response to the ZST during the 2020-2021 drought. The 2019-2020 response to the ZST, in Morrow County, may be a consequence of a reduced supply of zinc (< 0.5 ppm) in soil and/or the presence of soil pathogens. Previous work, conducted only in laboratories, shows an improved supply of zinc may lessen detrimental effects of Fusarium crown rot.

CONTINUED ON PAGE 14

**Table 1. Chemical properties of soil at trial locations in dryland winter wheat fields of eastern Oregon.**

Trial Location (Soil Type)	Soil pH	Soil Organic Matter Content	-----Concentration in Soil-----			
			Nitrogen	Phosphorus	Sulfur	Zinc
<u>2019-2020</u>		(%)	(lb N/ac)	(ppm)	(ppm)	(ppm)
Morrow County (Ritzville)	6.7- 7.0	1.0-1.4	70-100	8-12	4-7	0.3-0.5
Sherman Station (Walla Walla)	5.4-5.7	1.3-1.7	120-150	15-18	12-15	0.6-0.9

*Nitrogen concentration in soil determined from the top three-feet of the profile. All other test results determined from composited surface-foot samples.*

**Table 2. Effects of the zinc-oxide seed treatment (ZST) on the yield, test weight, and protein content of harvested soft-white grain in 2020.**

Treatment (by Location)	Grain Yield	Grain Test Weight	Grain Protein Content
<u>Morrow County</u>	bu/acre	lb/bu	%
Control	41.3 a	62.2 a	10.8 a
4 oz ZST/cwt	43.7 b	62.2 a	10.3 b
<u>Sherman Station</u>			
Control	81.1 a	62.9 a	10.2 a
4 oz ZST/cwt	80.6 a	62.5 a	10.3 a

*The reduced protein content associated with the ZST (Morrow County) is probably an outcome of improved yield. Data followed by the same letter, within columns, are statistically similar.*



Fusarium crown rot symptoms on above-ground internodes (left) and crowns and roots (right) of plant samples collected during the 2019-2020 crop year. Photos by Larry Lutchter.



CONTINUED FROM PAGE 13

### Another Perspective

The 2020 Morrow County grain yield response (to the ZST) is “real,” but let’s add some perspective to the situation. Improved yield was also an outcome from the application of ammonium phosphate-sulfate (16-20-0-12) fertilizer. This is true for ammonium phosphate-sulfate that was OR was not coated with zinc (Table 3).

### What About Zinc Accumulation in Below-Ground Tissue or Grain?


Preliminary testing, conducted only at a Morrow County site in 2021, showed a substantial increase in the zinc concentration of below-ground tissue (crowns and roots) removed from plots treated with the ZST (Table 4). Additional testing, conducted on samples from the Sherman Station in 2022, showed that a more traditional kind of fertilizer (zinc sulfate; dry), applied at 5 lb Zn/ac, might improve the concentration of zinc in grain.

### Final Thoughts

The supply of zinc in most fields is probably adequate. Soil test values less than 0.3 to 0.5 ppm (DTPA-extractable) zinc should be evaluated, on an experimental basis, for crop response to the addition of fertilizer. Seed treatments supply small quantities of zinc to the growing plant and are not (usually) an efficient means of improving zinc nutrition in wheat. They may have an effect on emergence and they may reduce the pathogenicity (or population) of fungi that cause Fusarium crown rot. I wonder about the effect of zinc seed treatments on fungi responsible for Rhizoctonia bare patch? What about beneficial fungi that are a part of the soil biome? Maybe we’ll learn more as time goes on.

### Much Appreciated!

Work described in this article could not have been accomplished without cooperation provided by Eric Orem (E & B Orem Farms), Brent Martin (Nelmar Farming Co.), Miller Wheat Inc., Corey Miller Farming, and Kyle Bender who manages the Sherman Station for the Columbia Basin Agricultural Research Center.

I appreciate on-going support from Christina Hagerty and her crew. I offer a special note of thanks to the Oregon Wheat Commission, and all of Oregon’s wheat producers, for critically-needed funding. 

**Table 3. Treatment effects on grain yield, tissue zinc concentration, and zinc uptake of soft white winter wheat grown in Morrow County, Oregon during the 2019-2020 crop-year.**

Treatment	Grain Yield	Tissue Zinc Concentration	Zinc Uptake
	(bu/ac)	(ppm)	mg Zn m <sup>-1</sup> row
Control	41.3 a	19.4 a	1.25 a
ZST	43.7 b	18.3 a	1.30 a
APS	43.6 b	18.3 a	1.92 b
APS + Zn	43.6 b	19.0 a	2.08 b

ZST = Zinc-oxide seed treatment

APS = Ammonium phosphate-sulfate (16-20-0-12)

APS + Zn = Ammonium phosphate-sulfate (16-20-0-12) coated with zinc (≈ 0.2 lb Zn/ac)

Zinc uptake calculated using tissue zinc concentration and early-season plant biomass data.

Data followed by the same letter, within columns, are statistically similar.

**Table 4. Treatment effects on the zinc concentration of above-ground and below-ground plant (wheat) tissue and harvested grain in 2021.**

Treatment	Zinc Concentration (ppm)		
	Above-Ground Tissue (Leaves and Stems)	Below Ground Tissue (Crowns and Roots)	Harvested Grain
Control	13.3 a	21 a	17 a
4 oz ZST/cwt	11.0 a	35 b	17 a
Zinc Sulfate (5 lb Zn/ac)	-----	-----	21 b

Data followed by the same letter, within columns, are statistically similar.

Preliminary (single-site) information only.

Zinc sulfate applied with the seed while planting.



Getting ready to plant at the 2019-2020 Morrow County site. The customized plot drill uses low-disturbance openers. Dry fertilizer is placed into a band below and in-between paired rows. Seed (or fertilizer) can be “run through” stainless steel hoppers or an extremely accurate metering device controlled by the operator. Photograph by Larry Lutchter.



# The New Year Brings New Laws and Regulations

Nicole Mann, OWGL Lobbyist, Dalton Advocacy Inc.

As we look forward to the new year ahead, it's important to prepare for the January 1st effective date of legislation passed during the 2022 session. Additionally, the new year also marks the beginning of employer and employee mandatory contributions for Oregon's new Paid Family Medical Leave Program. Below are some important changes to be prepared for:

## A Quick Look at Paid Leave Oregon

During the 2019 session, the Legislature established the nation's most generous paid family and medical leave program. Now, Paid Leave Oregon is ready to take effect as of January 1, 2023.

The program will allow employees who made at least \$1,000 the year before applying for benefits to take up to 12 weeks paid time off from work within a year for family, medical, and/or safe leave. The employee is only required to be employed for 90 days before taking the protected leave (and immediately for non-protected leave) and the time off can be taken a week, a month or a shift at a time.

Mandatory contributions into the program are shared by employers and employees via a new payroll tax that will be included in payroll forms beginning January 1. The set contribution rate by the Oregon Employment Department for 2023 is 1% of total wages, with employees paying 60% and employers paying 40%.

What does this mean for you?

If you're an employer with 25 or more employees, you will be required to start making contributions into the program. If you have fewer than 25 employees, you do not need to make contributions, but you will still need to collect and submit your employees' share. Employers also have an option to choose to pay the employee portion as a benefit for their employees. If you have not already, we recommend you register in advance for Frances Online, the Employment Department's new employer portal for reporting employer taxes, unemployment insurance taxes, and Paid Leave Oregon contributions.

If you're an employee, you will see a new deduction from your 2023 paychecks to account for the employee contribution of 60% of the 1% of your total wages. It's important to note that although contributions begin in January, employees will not be able to apply for benefits until September 3, 2023.

## Agricultural Overtime Phase In Begins

Oregon's new law mandating agricultural overtime phases in on January 1. For calendar years 2023 and 2024, any

hours worked above 55 hours in one workweek must be paid by the employer at an overtime rate of 1.5x the employee's regular hourly rate.

A workweek can begin on any day of the week and at any hours of the day, but it needs to be a complete 7-day, 168-hour period. An employer may change an employee's workweek if the change is permanent and is not designed to evade overtime pay.

## Wildfire Risk Mapping

When the Legislature passed their large wildfire relief package (Senate Bill 762) in the 2021 session, it resulted in significant financial investments to state wildfire response and new prevention strategies, including a wildfire risk map.

Some Oregon Wheat Growers League members received a letter in the mail this past spring notifying them of their property being located inside a newly designated "high

CONTINUED ON PAGE 16



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CONTINUED FROM PAGE 15


or extreme” risk area according to the newly constructed map, making the property subject to new building code requirements and regulations. These letters were cause for extreme concern, but thankfully the Department of Forestry responded to the public outcry and has withdrawn the map to allow for the risk designations to be reexamined.

Property owners can expect to see an updated map in the fall of 2023, after the Department makes revisions. This is one you can remove from your list of new things coming in January.

And while effective before the January 1, 2023 a reminder that the **Temporary Exemption to Oregon’s Pay Equity**

**Law for Hiring/Retention Bonuses** expired on September 28, 2022 (SB 1514 (2022)). Efforts will be underway for the 2023 Session to make this exemption permanent.

### 2023 Legislative Session

As we look forward to the 2023 session, Oregon will have a new Governor, a new Commissioner for the Bureau of Labor and Industries, and a new Legislator in more than 30 districts. These changes bring new opportunities and challenges for the League as we develop relationships with incoming elected officials and educate them on the critical role wheat producers play in our state. The Dalton Advocacy team looks forward to our first session back in person since the pandemic. It is an honor to represent you in the Capitol. 

## Public-Private Collaboration in Breeding for Wheat Disease Resistance

Chris Mundt, Professor

Contributions of private plant breeding companies to Pacific Northwest wheat production have increased significantly in recent years. In late 2017, the Oregon Wheat Commission approached me about the possibility of conducting disease screening for materials from the private sector to improve the level of resistance to major winter wheat diseases in varieties released by private companies. The project has been funded beginning in the 2018-2019 season, and all known private wheat breeding programs were contacted for potential collaboration. Agripro and Limagrain agreed to collaborate, and these two companies account for the vast majority of private sector wheat acreage in Oregon.

For Agripro, we evaluate differences in disease response among their advanced lines, which should aid in releasing varieties with improved resistance. A combination of locations, production practices, and inoculation techniques are used to provide high levels of disease pressure in trials of stripe rust, *Cephalosporium* stripe, *Fusarium* crown rot, eyespot (also known as strawbreaker foot rot) and *Septoria tritici* blotch. These are deemed to be the five most important wheat diseases in the Pacific Northwest. Barley yellow dwarf is recorded in any nurseries where it occurs naturally.

Depending on the disease, we utilize either natural or artificial inoculation, with the goal of attaining both uniform and high levels of disease; this allows for the best separation



among wheat entries being tested. Estimates of disease severity are made in May-June. Methods of evaluation vary among diseases and are usually percent diseased leaf area for stripe rust and *Septoria*, percent whiteheads for *Cephalosporium* stripe and *Fusarium* crown rot, and percent lodging for eyespot. The number of lines tested per year has varied from 20 to 53. These studies have proven to be highly useful in identifying differences in disease resistance among Agripro lines for multiple diseases. The cost of evaluating Agripro wheat lines is shared by the Oregon Wheat Commission and Agripro.

Limagrain indicated that they were instead interested in having us evaluate a large number of lines to help develop molecular markers for resistance to *Fusarium* crown rot using a procedure called genome-wide association mapping (GWAS). This approach involves collecting disease data from a large number of wheat lines in the field and associating these disease data with genetic variation among the wheat lines. Genetic variation among wheat lines is obtained by sequencing of



Figure 1 legend: Whitehead symptoms on wheat tillers resulting from inoculation with the *Cephalosporium* stripe pathogen. Photo by Martin Quincke, former graduate student.



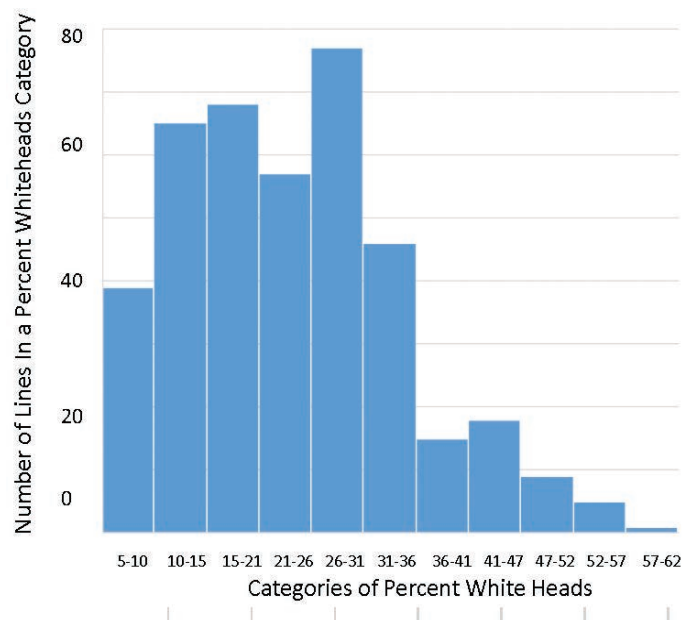


Figure 2 legend: Variation in Cephalosporium stripe severity for 400 Limagrain lines in each of 11 disease severity categories in 2021. Disease severity categories, measured by percent of tillers showing whitehead symptoms, are on the horizontal axis. The number of wheat lines falling into each of these 11 categories is shown on the vertical axis.

multiple DNA fragments distributed over the wheat genome. Such evaluations can help to identify genetic areas associated with variation in disease levels among wheat lines and to develop markers that can be used in breeding programs.

To contribute to the GWAS approach, we planted 300 Limagrain lines, four replicate plots each, at the Sherman Station in fall 2019 and inoculated them with six strains of Fusarium. We found that variability among plots was too great to obtain the desired information. We subsequently changed the target disease to Cephalosporium stripe because of its importance to wheat growers in eastern Oregon and because we have been more successful in working with that disease. Further, we now have substantial evidence from both the field and from molecular mapping studies for an association between resistance to Cephalosporium stripe and resistance to several other wheat diseases, especially Fusarium crown rot. Fusarium crown rot is of importance over a wide swath of low rainfall wheat production zones in Oregon. Cephalosporium stripe provides more precise data than does Fusarium crown rot, however, so it may be a better target to address resistance to both diseases.

We are now in our third season of evaluating 400 Limagrain lines for Cephalosporium stripe resistance. Lines are planted early (September 9th-11th) to encourage severity of Cephalosporium stripe. Inoculum of the pathogen is distributed over the field in late fall to simulate pathogen spread from infested crop debris of the previous season. Percent whiteheads, a good indicator of yield loss to disease, is rated for each plot at a time when there is sufficient expression

#### Researcher's Name and Title:

Chris Mundt, Professor

#### 2022 Grant Titles and Funding Levels:


Screening for Resistance to Major Wheat Diseases in Lines From Private Breeding Programs, \$11,040

#### Grant summary:

This project involves studies to improve the level of resistance to major winter wheat diseases in varieties released by private companies. Agripro advanced lines are evaluated for resistance to stripe rust, Cephalosporium stripe, Fusarium crown rot, strawbreaker foot rot, and Septoria tritici blotch using the same procedures as for testing of lines in the Oregon State University statewide variety trials and Oregon State University wheat breeding nurseries. Data will be available to growers so as to evaluate the resistance of any lines that are eventually released as varieties. Limagrain has preferred to take a marker discovery approach. Cephalosporium stripe resistance is being evaluated for a third season in Pendleton on 400 lines from Limagrain Cereal Seeds. Limagrain will use these disease data, combined with the extensive set of genomic data they currently possess on the wheat lines, to conduct a genome-wide association study. Identity of the publicly available genetic markers that are most closely associated with quantitative trait loci for Cephalosporium resistance will be shared with the OSU Wheat Breeding Program. Associations between resistance to Cephalosporium stripe and Fusarium crown rot are expected to provide genetic information relevant to both diseases and be useful in developing improved resistance to these two important constraints to wheat productivity. The work will result in increased profitability for Oregon wheat growers, and ability to more effectively adopt conservation tillage practices.

on later maturing lines, but before earlier lines are completely ripe (usually mid/late June). These data have shown that there is substantial variation for Cephalosporium stripe resistance among the Limagrain lines (for example, Figure 1).

Limagrain will use these disease data, combined with the extensive set of genomic data they currently possess on the wheat lines, to conduct a genome-wide association study. Identity of the publicly available genetic markers that are most closely associated with genetic variation for Cephalosporium stripe resistance will be shared with the OSU Wheat Breeding Program. Thus, the project may increase the ability of both breeding programs to increase levels of resistance to these two important diseases.

The work described above should result in increased levels of disease resistance in Oregon wheat fields. This will result in increased profitability for Oregon wheat growers, and ability to more effectively adopt conservation tillage practices. 

# 2023 Predictions: Cloudy with a Side of Meatballs?

Amanda Hoey, Oregon Wheat CEO



At the end of every year we have an opportunity to look back, assessing what worked well in our lives and business operations and what can be improved in the coming year. We also have an opportunity to look forward: making plans based on our predictions for the year ahead. Many activities I planned for my first few years with Oregon Wheat turned out differently than anticipated, due in

large part to a global pandemic. As well, where I thought the wheat industry would be also took a turn: the root of those abrupt changes and resulting volatility largely based on global conflict.

Despite major changes in the past two years, though, we can still make predictions for the course of agriculture as pandemics and crisis tend to accelerate existing trends. Certainly, to shift them, but primarily to further elevate a few issues already present and rush those forward. (If you have seen a video of the Gloucester Cheese Rolling Race, think that kind of acceleration... chaotic, fast, some injuries along the way).

Thus, for our last magazine issue of the year, I will join the crowded field of futurists to add my own predictions about our future pathways and upcoming trends.

## **‘Rurbanization’ and Consolidation**

*Rurbanization: The process by which rural spaces become increasingly driven by urban policies, priorities and residents.*

This is not a new trend. Even while the population in some rural counties grows, the percentage of that growth in comparison to urban spaces does not keep pace. There are fewer individuals in ag production than ever before and even a single generation away from the farm reduces direct understanding of farm operations. Combine rurbanization with a prediction for additional farm consolidation. Already thin profit margins, compounded by an increase in interest rates for operating loans and substantial ballooning of input prices force changes in some business models.

From a policy side, it means we must continue to invest in educational materials aimed at those not out in the field. There is opportunity in this trend, as those in urban spaces seek connection to food and farms. At times, though, those connections can create conflict, especially in relation to crop

protection tools and crop management tools, requiring more defense on the right to farm.

## **Next Generation Farmer and Tech**

With consolidation and increased regulations, the dynamics of individual farms will move towards those with ever more managerial complexities. We have a whole new generation of producers who will increasingly seek out tech-centered solutions, with intensified data focus. Our wheat producers already utilize extremely complex equipment systems, but the data collection will play an increasingly larger role in farm management. It leads to another set of opportunities in ag careers and places further focus on succession planning.

## **Next Generation of Consumers**

The next generation applies to consumers, as well, who have already shown a focus of their decisions being driven by health and environmental concerns. We see it in everything from labeling efforts to sustainability initiatives. The opportunity? We have a great sustainability story for U.S. and Oregon wheat. From the durable residue in crops that also helps reduce erosion, to the living root system produced by the winter wheat plant, to the precision ag which minimizes product uses for the best yield.

## **Essential Wheat**

Finally, there will be no slowing of the need for wheat in the upcoming year. One of the big drivers for wheat demand- population- continues to rise, with expectations for the world population to reach 9.8 billion people in 2050. Food production has to rise to compensate for the increased consumption need. With an inconsequential change in land acres- or a reduction of acres if some of those are eaten up in conversions to non-ag uses and for non-food ag uses- meeting the need requires increases in yield per acre. Achieving that yield increase requires emphasis on ag as an essential business and prioritizing the movement of product. It also requires advancements in wheat breeding and nutrient management. The demand potentially leads to a change in perspectives regarding technologies used in wheat.

## **End of the day?**

If nothing else, the wheat industry has proven itself to be adaptive and innovative time again. So I will give it “Cloudy, with a chance of meatballs” as my final prediction: similar to the film described as ‘a fast paced adventure with important lessons along the way.’

I wish all our producers a successful start to the new year. 



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## Investing to the Next Generation: Applications Open for Oregon Wheat Scholarship

The Oregon Wheat Foundation announces the opening of its scholarship program supporting Oregon high school seniors. Up to twelve \$1,500 scholarships are awarded each year to graduating seniors who are enrolling in a University, Community College or an accredited vocational or technical program. Eligible individuals include graduating high school seniors who are the child of a grower member of the Oregon Wheat Growers League, or whose parents are employed by a grower member of the Oregon Wheat Growers League. The scholarship is also open to students who have worked seasonally for grower members.

The Foundation scholarship fund is supported through generous grower contributions and through annual fundraising efforts at the tri-state grain convention auction. Foundation Chair Tom Winn highlighted the importance of the program for the industry. He stated “The Foundation and growers have a long history supporting the scholarship program as it is our investment to the next generation of individuals who will be leaders: on our farms and in our industry. I am pleased that we can once again open the scholarship program for

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applicants to further invest in their continuing education.” He noted that it was thanks to the generosity of industry sponsors and individual wheat producers contributing funds directly and through the annual auction at convention that the Foundation can award scholarships to help grow our future agriculture leaders.

Scholarship recipients are selected based on school and community involvement, scholastic performance, and an essay on the wheat industry. **Deadline to apply for the 2023 Oregon Wheat Foundation Scholarships is February 1, 2023.** Full details and the application are available online at <https://www.owgl.org/scholarship>. 

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# Hudson Nationally Recognized for Conservation Efforts

Paula Wallis, Tiicham Conservation District

Second generation eastern Oregon farmer and manager of the Tribal Farm Enterprise, Kevin Hudson, recently received recognition as one of twelve national farmer spotlights through the National Association of Conservation Districts (NACD). The Tiicham Conservation District of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) committee nominated Kevin for the Farmer Spotlight Series profile, which highlights farmers who are champions of conservation throughout the United States. In addition to be chosen for this recognition, each Spotlight Honoree and Award winner is recognized through the year through Field to Market's communications channels and press coverage. Paula Wallis, Secretary of the Tiicham Conservation District and the CTUIR Tribal Farm Enterprise (TFE) led the effort to nominate their CTUIR TFE Manager, Kevin Hudson. She was pleased to share the story of his commitment to the conservation and regeneration of the CTUIR tribal farmlands.

The CTUIR TFE has become one of the largest tribally owned, self-managed and self-farmed enterprises within the Northwest. Kevin has managed the Tribal Farm Enterprise since 1997. He started with 150 acres and now farms over 12,000 acres. He raises dry peas, canola and a number of wheat varieties all throughout the base of the Blue Mountains.

The Tribe has been farming for centuries, with many of the tribal people working and caring for the land growing hay and fruits then moving into grains and vegetables and eventually farming their own land with teams of horses and one or two pieces of farming equipment that they would share. Many chose to lease their property out and have it farmed by local farmers who farmed around or near them. The tribes developed an Economic and Community Development Department that would then create the Tribal Farm Enterprises with the intent that the program would begin to farm their own tribal land and assist other tribal members in developing and improving their lease and crop options directed to them through the Bureau of Indian Affairs and make changes that would improve the sustainability of the land and water the CTUIR throughout the reservation.

Hudson manages the operation with a strong conservation mindset aimed at improving and sustaining the Tribe's lands. Today, with Hudson at the helm, TFE features regenerative farming practices that have resulted in an improved production of crops and has improved the water quality, animal habitat and environment on the CTUIR lands.

"I am in a unique position," Hudson says. "I've been able to run the TFE how I think it should be running and we work to make improvements each season." Over five years ago, TFE moved to no-till farming, which Hudson notes "has reduced our costs-including tractor hours, labor and fuel," he says. "By adopting the no-till and regenerative farming practices, we've basically eliminated our soil loss from wind and rain events." Another benefit has been better water use efficiency, allowing them to better utilize the 12-16 inches of rainfall a year. "We may not get a huge amount of rainfall a year, but when we do, you want to take advantage of it and have that rain get into the ground," he highlights. Wildlife benefits have also been astounding. "The change in his farming practices and working with Natural Resource Conservation Service (NRCS) programs helped to increase our fish and animal habitat in and around our streams/rivers flowing through and around and below the tribal farming lands," remarks Wallis.

Through Hudson's leadership, TFE has been regularly active within NRCS programs, with about 4,000 acres of land with Conservation Reserve Program (CRP) contracts, including some within the Conservation Reserve Enhancement Program (CREP). With NRCS' help, Hudson has been able to trial cover crops on multiple acres and is looking forward to sharing the lessons he is learning when the project is completed in 2-3 years. "NRCS has been great to work with, as it has allowed us to try some things outside of our comfort zone. They have some great programs that have allowed us financial opportunities to mitigate our risk which has allowed us to learn a lot," recalls Hudson.

Hudson is proud of all that has been accomplished and looks forward to many more years of working on the conservation enhancement of the CTUIR TFE's lands. He hopes to continue to share his story, helping other local tribal landowners and farmers. "Farmers need to be proud of what we do," Hudson emphasized. "We need to let people know that we are taking care of the land, and that the land takes care of all when we do." 🌾





# USDA Names Appointees to Oregon Farm Service Agency State Committee


The USDA Farm Service Agency (FSA) announced appointees to serve on the Oregon USDA FSA state committee. Each FSA state committee is appointed by Secretary of Agriculture Tom Vilsack and the committee is comprised of three to five members, including a designated chairperson. Individuals appointed to serve on the Oregon State USDA FSA Committee are:

- Katherine Minthorn - Confederated Tribes of the Umatilla Indian Reservation of Oregon, Committee Chair
- Vern Frederickson - Irrigon
- Bryan Harper – Junction City
- Denver Pugh - Shedd
- Anna Sullivan - Hereford

Wheat is well represented within the committee with three of the five individuals connected to the Oregon Wheat Growers League membership: Minthorn, Pugh and Frederickson. Committee Chair Katherine Minthorn is a member of the CTUIR Tribal Farm Committee within the Tribal Farming

Enterprise. Denver Pugh is a sixth generation farmer and owner of Pugh Seed Farm. Vern Frederickson has an ongoing connection to Oregon Wheat through his farm operations and League membership and has previously served as the Morrow County League President. “We are lucky to have individuals serving on this committee with an understanding across a range of wheat operations and a clear connection to our industry” stated Oregon Wheat CEO Amanda Hoey.

Members of the FSA state committee are responsible for the oversight of farm programs and county committee operations, resolving program delivery appeals from the agriculture community, maintaining cooperative relations with industry stakeholders, keeping producers informed about FSA programs and operating in a manner consistent with USDA equal opportunity and civil rights policies.

“The FSA state committee members play an integral role in the continuity of operations, equitable and inclusive program administration and ensure the overall integrity of services to the nation’s agricultural producers,” said Marcus Graham, FSA Deputy Administrator for Field Operations. 



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# RECIPE

## Buttermilk Cake with Huckleberry Sauce

*Huckleberries can be hard to find but are worth the extra effort. They are the perfect combination of sweet and tart, making a delicious topping for this buttermilk cake. Given the short season, when we are lucky enough to find and pick them, we will freeze some of the berries to save them for a Thanksgiving or holiday dessert treat. This recipe is a holiday favorite, and the cake is versatile. Substitute another berry sauce for the topping, or exchange for a pecan/brown sugar topping.*



### INGREDIENTS

#### For the cake:

4 tablespoons butter	1 cup buttermilk
1 cup brown sugar, lightly packed	1 teaspoon vanilla extract
1 large egg	1 teaspoon baking soda
	1/2 teaspoon salt
	1 1/2 cups flour

#### For the sauce:

1 cup huckleberries
1/4 cup granulated sugar
1 1/2 teaspoon water
1 Tablespoon lemon juice
1 Tablespoon cornstarch

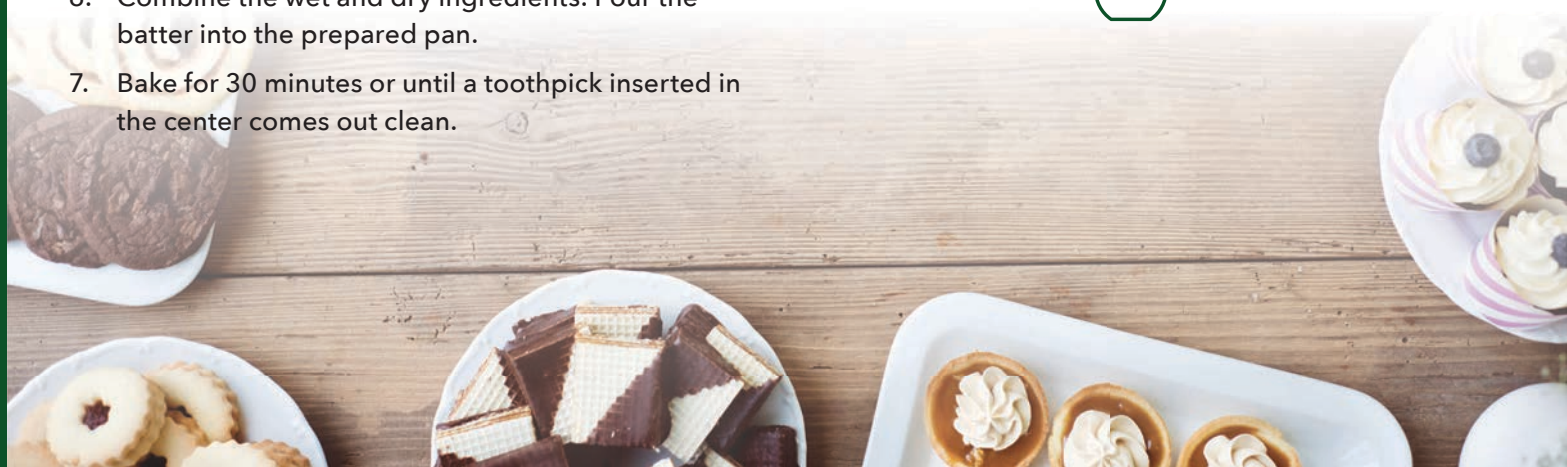
### INSTRUCTIONS

#### For the cake:

1. Preheat oven to 350°F and lightly grease a square 8" x 8" pan.
2. Beat the butter and brown sugar together until smooth.
3. Add the eggs, beating until smooth.
4. Stir in the buttermilk and vanilla extract.
5. Mix together the dry ingredients: baking soda, salt and flour.
6. Combine the wet and dry ingredients. Pour the batter into the prepared pan.
7. Bake for 30 minutes or until a toothpick inserted in the center comes out clean.

#### For the sauce:

1. Bring huckleberries, sugar and water to a boil and simmer for 5 to 8 minutes.
2. In a small bowl, combine lemon juice and cornstarch. Add to the huckleberry mixture and cook for an additional minute.
3. Cool and serve.





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