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The official publication of the Washington Association of Wheat Growers

APRIL | 2019

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WHEAT LIFE

Volume 62 • Number 04
www.wheatlife.org

The official publication of



**WASHINGTON
ASSOCIATION OF
WHEAT GROWERS**

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Wheat Life (ISSN 0043-4701) is published by the Washington Association of Wheat Growers (WAWG): 109 E. First Avenue • Ritzville, WA 99169-2394

Eleven issues per year with a combined August/September issue. Standard (A) postage paid at Ritzville, Wash., and additional entry offices.

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President's Perspective



Death by nickel and dime

By Jeffrey Shawver

It's been an "interesting" few months for agriculture in Olympia. We went into the 2019 Legislative Session expecting to see carbon legislation (which we've got, several times over, possibly). We were ready to defend our ability to use pesticides without onerous reporting requirements and an unworkable advance notification period. Fortunately, that fight didn't materialize, and instead, we got a bill that funds a safety committee and more applicator training—a win for the industry. The one thing we weren't ready for was to be accused of slavery and human trafficking. I think that one caught us all by surprise.

The bill, **SSB 5693**, would have required some retail sellers and manufacturers of ag products to make annual disclosures on their websites' homepages about their efforts with respect to their product supply chains to eradicate slavery and human trafficking and to ensure compliance with employment laws. Needless to say, the uproar over this bill from farm groups was loud and passionate; fortunately, the bill wasn't brought up for a vote on the Senate floor, so it's dead this session.

Something else that caught me by surprise was a statement by Sen. John McCoy (D-Tulalip) during a Senate floor debate on pending H-2A legislation. He said Washington ag producers don't pay any taxes. Sen. Mark Schoesler was quick to rebut that, but the idea that a member of our legislature thinks we don't pay any taxes is astonishing.

I pay taxes on new equipment. While I get a small tax break on the diesel I use in the field, I pay taxes on all the rest of the fuel I buy. I pay taxes on the electricity I use both at home and in my shop. I also pay fees that most nonfarmers don't. There's a fee to obtain a pesticide applicator's license. There's a fee to have my grain inspected, tested and graded at the elevator. There are fees I pay that allow me to plant certified seed. Not only that, but the ag industry is also dealing with trade issues that are putting vital markets in jeopardy.

Now, to be clear, farmers do get a tax break on some of the things we have to buy, such as our seed and fertilizer. But the price of wheat hasn't moved much in the past few years. It's barely above what it costs to grow the grain—even with those tax exemptions taken into account—and I worry that any new taxes and fees are going to nickel and dime family-owned farms out of business. Every new tax or fee increase shaves our profit margins thinner because we can't pass that cost on to consumers. It's extremely discouraging, then, when I hear legislators making statements that are so obviously misinformed.

This June, the Washington ag industry is going to hold a tour for legislators and their staff to show them what's happening on our farms. We'll be visiting several different types of operations around the Columbia Basin to showcase what farmers are doing to protect the environment, how they use the latest technologies to precisely apply pesticides and some of the restrictions and labor issues the industry is facing. Besides visiting Olympia to talk face to face, this is the best way I know how to educate legislators on the current realities of farming, especially those from urban districts.

Farming isn't an easy job, but for me, the benefits still outweigh the costs. I hope that's true 10 years down the road, but if we continue to have legislators who insist on imposing a carbon tax that voters have repeatedly shot down or who think I don't pay my fair share of taxes...well, I worry. ■

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WAWG's current top priorities are:

- ✓ Preserving the Snake River dams.
- ✓ Maintaining a safe and sound transportation system that includes rail, river and roads.
- ✓ Establishing favorable trade agreements.
- ✓ Fighting mandatory carbon emission regulations.
- ✓ Fighting unreasonable notification and reporting requirements for pesticide applications.

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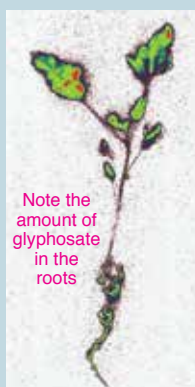
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Growers brave snow to hear updates at March meeting

The March state board meeting of the Washington Association of Wheat Growers (WAWG) was brief as growers battled what is hopefully the last major storm of the winter to attend. All counties reported fields still covered with snow, and there is some concern of winterkill on areas left exposed by the January and February winds.

National and state legislative news included updates on 2018 Farm Bill implementation, the Trump Administration's proposed budget plan that cuts crop insurance price supports and anti-agriculture bills that are making their way through the state legislature.

Diana Carlen, WAWG lobbyist, called in to discuss what's been happening in Olympia. Several bills that WAWG is opposed to have been making their way through committee hearings, including a bill that essentially accuses the agricultural industry of slavery and human trafficking; a carbon fee included in Sen. Steve Hobbs' (D-Lake Stevens) transportation package; and a bill that would require Washington state's utilities to obtain 100 percent of their electricity from carbon-free sources by 2045 that is championed by the governor.

The state House and Senate will be unveiling their budgets in the coming weeks. Carlen said Democrats are looking for more revenue sources, and she's hearing that they are considering a B&O tax increase, an increase in some of the state's real estate excise taxes and closing some state tax exemptions.

There is some good news for agriculture in Olympia, however. The bill establishing a pesticide safety committee that WAWG supported has passed both the House and Senate. A bill (**SSB 5883**) sponsored by Sen. Curtis King (R-Yakima) that would allow vehicles carrying farm products from the field to exceed public road weight limits by up to 5 percent passed out of the Senate. See page 14 for more updates on the 2019 Legislative Session from Carlen.

Members of the Washington Grain Commission updated the board on the current trade situation. Commissioner Mike Miller told the group that ratification of the U.S.-Mexico-Canada-Agreement is a top priority, and other countries involved in trade negotiations with the U.S. are watching to see what happens with it. He added that the situation with China remains very complicated.

Wheat College reminder

Growers are reminded to save the date for the annual Wheat College on June 6 in Dayton, Wash. The event, sponsored by the Agricultural Marketing and Management Organization, is a mix of indoor and outdoor presentations that will focus on the latest agronomic research. Localized presentations will be offered by WestBred and Washington State University Extension. Pesticide credits will be offered. Admittance to Wheat College is free, although registration is required. More information will be posted at wawg.org/ammo-workshops/ as it becomes available. ■

Sandi Swannack, a Lincoln County grower who serves on the board of the National Barley Growers Association, was also on hand to give a report. She said that nationally, barley acres are down, and some of the larger brewing companies aren't approving contracts because of an excess of stored grain. The barley industry is worried about exports to Mexico, and there are rumors that Mexico is ramping up efforts to improve their own barley industry.

The WAWG board will not meet in April due to growers being busy with spring seeding (hopefully). The next board meeting is scheduled for May 14. ■

March county meetings

Franklin County

Last month's meeting of the Franklin County wheat growers took place in Kahlotus and featured a special guest, Peter McEnderfer, the Franklin County assessor. McEnderfer talked about how his office assesses land and sends out property tax notices. County President Leonard Van Buren said the growers were relieved to hear that when nearby land is sold at higher-than-normal prices, such as when an investor buys farmland, that that doesn't automatically bump up neighboring property taxes.

The growers also heard a report on the recent Washington Grain Commission Research Review, where the Commission, with growers' help, decides what research projects they will fund in the coming year.

The group also talked about two Farm Service Agency (FSA) programs that might be significant to growers after this winter. The Livestock Indemnity Program, or LIP,

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reimburses growers for livestock they lost due to cold weather. This winter, Franklin County had bad enough weather—a blizzard Van Buren said—to qualify for the program. If growers meet the criteria, they could be reimbursed up to 75 percent of the assessed value of the animals lost. Unfortunately, the application deadline had already passed at the time of printing.

The other program Van Buren said growers need to be aware of is the Emergency Assistance for Livestock, Honeybees and Farm-raised Fish Program (ELAP) that provides monetary relief for farmers who have had to feed animals longer than normal. Van Buren said that to qualify, growers need to have at least two years of records showing how many animals they had and how much they were fed. Growers who qualify can receive up to 60 percent of the cost of extra feed.

The other main topic that was discussed during the meeting was the influx of mule deer that are feeding on winter wheat. Van Buren said that the deer scrape off the snow to get at the young plants and eat the plants down to about 2 inches. Then geese find the bare spots and “mow the wheat off to the ground. It’s getting real hard to raise winter wheat on the Snake River Breaks when you have all these deer come in.” Although the Washington State Department of Fish and Wildlife does provide depredation permits, Van Buren said the deer aren’t easily scared off.

“I’m telling everyone that if they are having an issue to document everything so when harvest time comes around, if you have a claim, at least you have ammunition to approach Fish and Wildlife with,” he said.

The next meeting of the Franklin County wheat growers will be on April 7 at 7:30 p.m. at Star School.

Whitman County

Mike Pumphrey, the Washington State University spring wheat breeder, joined Whitman County wheat growers at their March meeting to talk about his program and some new and soon-to-be-released varieties. Ryan, a new soft white spring wheat, is a possible contender for the top variety this year in the higher rainfall areas of the state. Pumphrey said it was good for noodles as well as cakes and cookies. There’s also a new hard red spring Clearfield variety “on the fast track to be released.” He said he’s working on a spring club variety, as well as looking at resistance to Hessian fly in club wheat.

Michelle Hennings, executive director of the Washington Association of Wheat Growers (WAWG), also attended the meeting and updated growers on the latest legislative news from Olympia and Washington, D.C. In Olympia, carbon is still very much a hot topic as legislators consider bills mandating the state be 100 percent carbon

free by 2045, a transportation package that includes a flat \$15 per metric ton carbon fee and a low-carbon fuel standard bill. WAWG is also monitoring a bill that sets minimum crew sizes for freight and passenger trains and a bill that would allow vehicles carrying farm products from the field to exceed road weight limits by up to 5 percent on public roads.

At the federal level, WAWG is monitoring trade issues and closely tracking progress on farm bill implementation. Hennings told the group that WAWG and the wheat industry was successful in getting several priorities addressed in the legislation, including a change in the data the Farm Service Agency (FSA) uses to set program payments and the opportunity for farmers to change their choice of farm bill program multiple times throughout the life of the farm bill.

“I feel like we had a seat at the farm bill table this time, and much of the credit for that goes to our national organization,” she said, referring to the National Association of Wheat Growers.

Fred Hendrickson, a program technician from the county FSA office, and Gary Bailey, chairman of the Washington Grain Commission, also gave updates. ■

Sprague grower to represent Lincoln County on board

One of the Washington Association of Wheat Growers’ (WAWG) newest board members is **Terry Harding** who represents Lincoln County.

Harding is the fifth generation on his family’s farm in Sprague (established in 1872), where they grow dryland wheat, irrigated and dryland hay and manage a small cow herd. Harding returned to the farm in 2003 after a stint working as a mechanic at the Washington State Department of Transportation (WSDOT).

He said even though he was working full time at WSDOT, he spent the weekends helping his father.

“I knew I would be back at the farm at some point. We got the opportunity to pick up some more ground, and my dad needed a little more help, so I came back,” he said.

Harding has also been involved in the National Barley Growers Association and said since the family’s main crop is wheat, he felt like he needed to be involved in WAWG. ►



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"I think WAWG is a great organization. It advocates for farmers really well I believe. I'm excited for the opportunity to help that continue," he said. "I think quite a few farmers younger than me are just coming back to the farm in the last few years, and they don't know what WAWG does. I'd like to help get them involved."

Harding and his wife, Shinna, are expecting their first child this year. ■

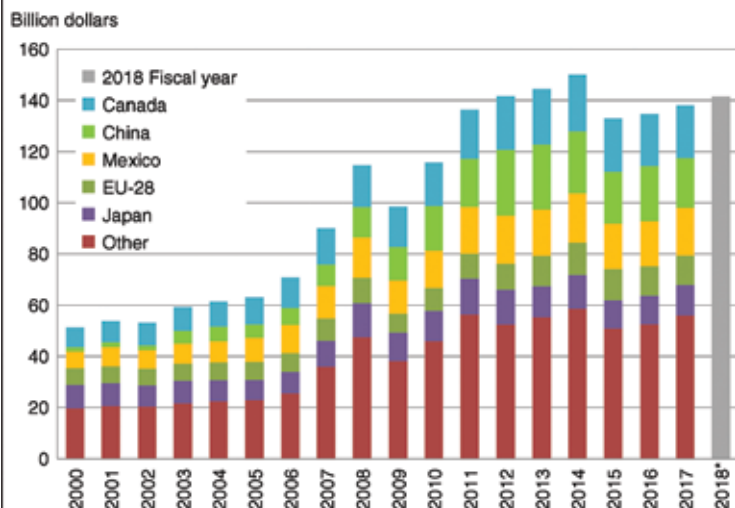
Farm operation changes? Don't forget to let FSA know

Remember, if you have bought or sold land, or if you have picked up or dropped rented land from your operation, make sure you report the changes to your local Farm Service Agency (FSA) office as soon as possible. Growers need to provide a copy of their deed or recorded land contract for purchased property. Failure to maintain accurate records with FSA on all land you have an interest in can lead to possible program ineligibility and penalties. Making the record changes now will save growers time in the spring. Update signature authorization when changes in the operation occur. Producers are reminded to contact their local county office if there is a change in operations on a farm so that records can be kept current and accurate. It is growers' responsibility to report changes in their farming operation to the Natural Resources Conservation Service (NRCS), in writing, if you participate in NRCS programs. ■



EXECUTIVE MEET UP. Washington Association of Wheat Growers (WAWG) past president, Marci Green (left), and WAWG executive director, Michelle Hennings, had the opportunity to chat briefly with Ag Secretary Sonny Perdue during the 2019 Commodity Classic in Orlando, Fla., Feb. 28-March 2.

Top five markets for U.S. agricultural exports, 2000-18



Note: 2000-2017 data is presented by calendar year by country. Because 2018 calendar year data is not final, 2018 data is displayed by fiscal year (October 2017 - September 2018) and not categorized by country.
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Foreign Trade Database.

The U.S. exported \$138 billion worth of agricultural goods in 2017. Since 2015, annual export value has increased each year, but is still down from a record of \$150 billion in 2014. Although the U.S. exports agricultural goods to most countries worldwide, for the last three decades, close to 60 percent of the value of U.S. agricultural exports has gone to five major trading partners: Canada, China, Mexico, the European Union (EU-28) and Japan. The dominance of key U.S. markets occurs for a number of reasons. In the cases of Canada and Mexico, proximity to the U.S. plays a large role in their trade relationships, and regional trade agreements have further increased trade. In the cases of China, Japan and the EU-28, the size of the economies involved is the key factor determining trade shares: after the U.S., the EU-28, China and Japan have the highest gross domestic products, and each of these countries accounts for a significant share of global imports of agricultural goods.



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The 2019/20 National Association of Wheat Growers board members are (from left) Jimmie Musick (Oklahoma), past president; Dave Milligan (Michigan), vice president; Ben Scholz (Texas), president; Nicole Berg (Washington), treasurer; and Brent Cheyne (Oregon), secretary.

NAWG elects new officers for 2019/20

The National Association of Wheat Growers (NAWG) wrapped up the 2019 Commodity Classic with a new slate of officers.

NAWG president and southwest Oklahoma farmer, Jimmie Musick, passed the gavel down to Vice President Ben Scholz, a farmer from Texas. Michigan wheat farmer Dave Milligan moved up the ranks of leadership becoming NAWG's new vice president. Nicole Berg, a wheat farmer from Paterson, Wash., becomes NAWG's new treasurer. Oregon wheat farmer, Brent Cheyne, will serve as NAWG's new secretary. Musick will continue to serve on the executive committee in the role of past president.

"Jimmie's time as president will have a lasting impact on the organization, and we appreciate all of the hard work that he did to lead NAWG during the passing of the 2018 Farm Bill," said NAWG CEO Chandler Goule. "We are excited for Texas wheat farmer Ben Scholz to take over as NAWG's next president and welcome Brent Cheyne to the officer team for the 2019/20 NAWG fiscal year." ■

NRCS seeks comments on practices

The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) announced last month that it is seeking public input on its existing national conservation practice standards as part of implementing the 2018 Farm Bill. NRCS offers 150-plus conservation practices to America's farmers, ranchers and forest landowners to help them meet their business and natural resource needs on their working lands.

"With the help of NRCS, agricultural producers across the country are taking

voluntary steps to improve their operations while benefiting natural resources," NRCS Chief Matthew Lohr said. "As part of our process of implementing the 2018 Farm Bill, we are asking agricultural producers, conservation partners and others to provide feedback on our practice standards in an effort to refine and enhance them."

NRCS is requesting public comments on how to improve conservation practice standards that support programs such as the Environmental Quality Incentives Program and the Conservation Stewardship Program, which help producers cover part of the costs for implementing these practices. The comment period ends April 25, 2019.

These standards provide guidelines for planning, designing, installing, operating and maintaining conservation practices.

As part of implementing the 2018 Farm Bill, NRCS is reviewing conservation practices by:

- Evaluating opportunities to increase flexibility while ensuring natural resource benefits.
- Seeking avenues for the optimal balance between meeting site-specific conservation needs and minimizing risks of design failure and associated construction and installation costs.
- Ensuring, to the maximum extent practicable, the completeness and relevance of the standards to local agricultural, forestry and natural resource needs, including specialty crops, native and managed pollinators, bioenergy crop production, forestry and others.

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POLICY MATTERS

Budgets up next on state legislature's 2019 to-do list

By Diana Carlen

WAWG Lobbyist

March 19 marked the 64th day of the 2019 Legislative Session. On March 13, the Legislature reached a milestone—the deadline to pass bills out of the house of origin. Bills that did not meet that deadline are ineligible to move forward this year unless considered necessary to implement the budget. It is important to note, bills are never truly “dead” because their content can be amended into other legislation or rare procedural moves can occur to keep them “alive.”

The legislature has begun hearing bills from the opposite chamber. Bills are again assigned to committees and have the same type of work sessions, public hearings and debate as in the original chamber. The next legislative deadline is April 3 in which all bills must pass out of their policy committee to remain alive.

Upcoming revenue forecast

Four times a year, the Washington State Economic and Revenue Forecast Council adopts a bipartisan revenue forecast that is then used to build the state operating budget. An updated revenue forecast was released on Wednesday, March 20. This is the last number the budget writers wait for in order to finalize their budgets. The House was expected to release its proposed budget within a week after the revenue forecast was released, with the Senate to follow shortly thereafter.

Low carbon fuel standard legislation passed

The House passed legislation on March 12 addressing the state's biggest source of greenhouse gas emissions. The bill requires the Washington State Department of Ecology to establish a Clean Fuels Program that limits greenhouse gas emissions per unit of transportation fuel energy similar to programs underway in British Columbia, California and Oregon. The program sets future limits for transportation fuel emissions at 10 percent below 2017 levels by 2028, and 20 percent below 2017 levels by 2035. This legislation was included in the Governor's clean energy agenda.

This bill also overrides a controversial provision in the 2015 transportation revenue bill that would have redirected funding to the Connecting Washington Account if the state implemented a clean fuel standard policy before 2023.



E2SHB 1110 passed largely on a 53-43 party-line vote, with Democrats generally voting in favor (3 voted against) and every Republican house member voting against the bill. More than 20 floor amendments were introduced, nine of which were adopted during a lengthy debate.

The bill was scheduled for a hearing in the Senate Environment, Energy and Technology Committee on March 19.

Senate committee passes transportation revenue package with carbon fee

The “Forward Washington” transportation package (**SB 5970, SB 5971, SB 5972**), sponsored by Senate Transportation Chair Sen. Steve Hobbs (D-Lake Stevens), was amended and passed out of the Senate Transportation Committee on March 6. **SB 5970** is a bond bill that authorizes \$5 billion in bonds for Forward Washington projects. **SSB 5972** is the appropriations bill.

SSB 5971 is the legislation raising revenue for the package. It contains controversial fees, including a carbon fee and development impact fees, among other revenue sources. The bill was amended in committee to reduce the carbon fee for electric utilities to \$10 per metric ton of CO₂ (down from \$15) in recognition of the 100 percent clean bill (**E2SSB 5116**) moving through the process. This change is expected to reduce the total funding of the transportation package by \$1.7 billion. The substitute also includes designations of certain industries as energy-intensive and trade-exposed (EITE), and therefore exempt from the carbon fee, instead of making them apply for EITE status. The bill is currently in the Senate Rules Committee.

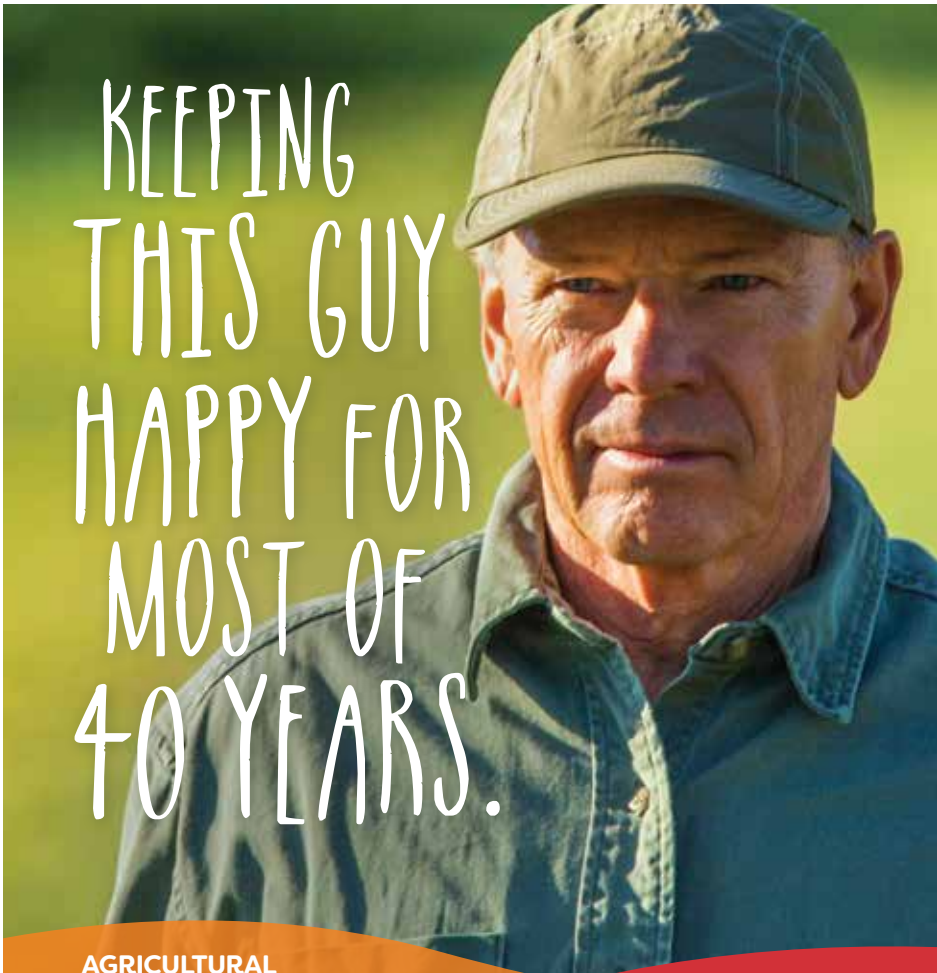
Other news

Legislation establishing a cap and trade program in Washington state was also recently introduced. **SB 5981** is sponsored by Sen. Reuven Carlyle (D-Seattle). The bill was scheduled for a public hearing in the Senate Environment, Energy and Technology Committee on March 21. Notably, it is not subject to the legislative deadlines because it could be deemed as necessary to implement the budget.

List of bills that have passed their house of origin:

HB 1841, dealing with minimum crew size requirements, sponsored by Rep. Marcus Riccelli (D-Spokane). The legislation would establish minimum crew size requirements for railroad carriers operating hazardous material trains and hazardous material trains consisting of 50 or more cars. The bill passed out of the House by a vote of 72-24.

E2SSB 5438, deals with the H-2A worker program and is sponsored by Sen. John McCoy (D-Tulalip). The bill would require those who use H-2A temporary workers to pay an additional state fee (farmers who utilize these workers currently



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pay a fee to the federal government) to hire H-2A temporary workers. This bill is opposed by the agriculture industry, including the Washington Association of Wheat Growers (WAWG), because the cost of this bill will make the use of the workers in an already tight labor market cost prohibitive. An amendment from Sen. Jim Honeyford (R-Sunnyside) was adopted on the Senate floor that limits the use of state H-2A fees to administering the H-2A program, and the amended bill was passed out of the Senate on a largely partisan 26-21-2 vote. It has been referred to the House Labor and Workplace Standards Committee.

SSB 5550, implementing recommendations of the pesticide safety workgroup, is sponsored by Sen. Rebecca Saldaña (D-Seattle). The bill establishes the pesticide application safety committee to explore how state agencies collect and track data and consider the feasibility and requirements of developing a shared database, including how the Washington State Department of Health could use existing tools to better display multi-agency data regarding pesticides. The bill passed the Senate unopposed. A hearing was held in the House Labor and Workplace Standards Committee. Rep. Tom Dent (R-Moses Lake) is the prime sponsor of the companion bill in the House, 2SHB 1725. That bill passed out of the House unanimously. WAWG supports this legislation.

SSB 5883, sponsored by Sen. Curtis King (R-Yakima), allows vehicles carrying farm products from the field to exceed road weight limits by up to 5 percent on public roads. It also requires that a farm receive at least four written warnings for excess weights before traffic penalties can be imposed. This bill passed out of the Senate on a 47-0-2 vote and has now been referred to the House Transportation Committee and was set for a hearing on March 20. WAWG supports the bill.

2SSB 5947, sponsored by Sen. John McCoy (D-Tulalip), establishes a sustainable farms and fields grant program at the Washington State Department of Agriculture. The bill would make certain projects eligible for program grants, including for on-farm fossil fuel reduction or energy efficiency measures, agroforestry and carbon-friendly farming practices. There is concern in the agriculture community that the bill would pull money away from other conservation priorities and concerns over how the program would be implemented. The bill passed out of the Senate on a 32-15-2 vote and is now in the House Rural Development, Agriculture and Natural Resources Committee.

Notable bills that did not pass their house of origin (i.e., never brought up for a vote):

SSB 5693, creating transparency in agricultural supply chains, was sponsored by Sen. Rebecca Saldaña

(D-Seattle). The bill insinuated that there was a problem in the agriculture industry of engaging in human trafficking and slavery. It requires certain Washington retail sellers and manufacturers of agricultural products to make annual disclosures on their websites' homepages about their efforts with respect to their product supply chains to eradicate slavery and human trafficking and to ensure compliance with employment laws. It would provide for statutory damages between \$500 and \$7,000 for violations, punitive damages for willful violations and other relief. The bill was amended in the Senate Labor and Commerce Committee to change the definition of "agricultural product" to now only apply to cocoa, dairy, coffee, sugar and fruit products. Wheat, potato, onions, asparagus or other vegetable products were no longer defined as agricultural products under the amended bill. The bill passed out of the Senate Labor and Commerce Committee on a party-line vote, but was never brought up for a vote of the full Senate. WAWG opposed this bill. ■

Negotiations continue on Columbia River Treaty

From the U.S. Department of State

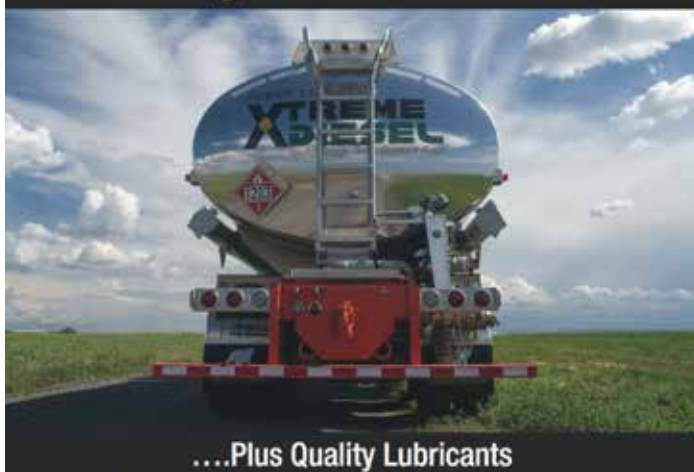
The U.S. and Canada held the fifth round of negotiations to modernize the Columbia River Treaty regime Feb. 27-28 in Washington, D.C. Building on information shared during previous rounds, the U.S. and Canadian negotiators discussed U.S. priorities, including continued careful flood risk management, maintaining a reliable and economical power supply and ecosystem benefit improvement. U.S. negotiators continued to take into account the views of the people who live and work in the Columbia River Basin.

The U.S. negotiating team is led by the Department of State and is comprised of representatives from the Bonneville Power Administration, the U.S. Army Corps of Engineers Northwestern Division, the Department of the Interior and the National Oceanic and Atmospheric Administration. The next round of negotiations will take place April 10-11 in Victoria, British Columbia. ■

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CATCHING UP WITH WASHINGTON WHEAT AMBASSADOR LACEY MILLER

So far, my year as a Washington Wheat Ambassador has held nothing but opportunity and excitement. It all started at the Tri-State Grain Growers Convention, which was held in Portland last November. While there, I was officially inducted as one of the 2019 Washington Wheat Ambassadors. I have been attending the convention for about three years now, and I love every bit of it. Going this year as an ambassador allowed me to experience the convention through a different light. I was also able to meet many people in the wheat industry, including Derek Sandison, director of the Washington State Department of Agriculture. After speaking in front of everyone, I was honored to officially receive my award/scholarship. Headed into 2019, I prepared for the Olympia Days advocacy trip. On our trip, I had the amazing opportunity to meet with some of our state's most insightful and powerful people, while being able to share wheat facts and present industry issues to legislative leaders. I was able to see a different side of how our government works and the impact it can have on the agriculture industry.

As a young adult, our generation is the future of agriculture—being able to see what we need to do in order to help our industry move forward is an opportunity that I am so blessed and thankful to have gotten. I can't wait for what the rest of the year brings.



NWF NAMES NEW OFFICERS AT THE 2019 COMMODITY CLASSIC

The National Wheat Foundation (NWF) wrapped up the 2019 Commodity Classic by welcoming a new board of director to replace Past President Phil McLain. Bernard Peterson, a farmer from Loretto, Ky., is the new grower representative. His official title is General Partner, Integrator and Director of Finance for Peterson-Farms. Further, NWF Chairman Wayne Hurst will continue to serve on the board as chairman, while Texas wheat farmer David Cleavinger will remain in his role of vice chairman. Lastly, Joe Kejr remains on as the Foundation's secretary/treasurer.

"NWF also appreciates Idaho wheat farmer Wayne Hurst's time as board chairman and is thankful to be able to keep him on for another year," said NWF Executive Director Chandler Goule. "We welcome Bernard Peterson to the NWF board and know that he will be a great attribute to the foundation."

For more information, visit the National Association of Wheat Growers at wheatworld.org and the National Wheat Foundation at wheatfoundation.org.

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In 1972, wheat producers across the country joined together to create the Wheat Foods Council as a national, nonprofit organization to promote the category of wheat-based foods, including baked goods, cereal, crackers, pretzels, pasta, sweet goods and tortillas. Since then, the organization has established itself as a leading source of science-based information on wheat and wheat foods nutrition. Backed by its 43-year history, they are proud to share their expertise about "all things wheat foods" with health and nutrition practitioners, educators, the media, consumers, and anyone who loves the many wonderful foods made from wheat. Visit their website at wheatfoods.org for more information. ■

Calendar:

Washington Wheat
Foundation Meeting
June 3, 2019,
beginning at 1 p.m. at
the Wheat Foundation
Building in Ritzville,
Wash.

Reminders:

- Don't forget, the National Wheat Foundation is accepting grower enrollment for the 2019 National Wheat Yield Contest! The deadline for winter wheat entries is May 15 with an early registration deadline of April 1. The Spring wheat entry deadline is Aug. 1, with an early registration deadline of June 15. For more information visit wheatfoundation.org.
- Remember the Foundation in your charitable giving. Go to wawheat.org to find out more about ways that you can support your industry.

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Kelly McLain,
Policy Advisor,
Washington State
Department of
Agriculture



Alison Halpern,
Policy Assistant,
State Conservation
Commission



A proposed initiative aims to assess the state of the state's soils

By Trista Crossley

It's a given that without healthy soil, producers would struggle to grow nutritious, plentiful food. What's not so certain is exactly how healthy Washington state's soils are.

The Soil Health Initiative (SHI) is a collaboration between Washington State University (WSU), the Washington State Department of Agriculture (WSDA) and the State Conservation Commission (SCC) that aims to undertake an assessment of the state's soils and develop management tools to better understand, maintain and improve long-term soil health.

Back in 2017 at a Results Washington meeting on agriculture stability and the importance of productive farmland, a conversation around soil health developed, leading Gov. Jay Inslee to ask if there was a statewide soil assessment. While some information exists, the takeaway for several state agencies was that more was needed on long-term soil health. With the idea planted, a soil health summit was held at WSU the following year to discuss the issue and develop recommendations that eventually coalesced into the SHI.

Last fall, WSU, WSDA and SCC submitted decision packages to the governor outlining each entity's goals and the funding that would be needed. The governor included \$3.6 million in his proposed 2019-21 budget for the project, which would fund the initial research at WSU and project support at WSDA. As of press time, it was unknown if either the Senate or the House proposed budgets will include funding for the SHI.

Robert Duff, a natural resources and environment senior policy advisor for the governor, said the governor would like to see the initiative produce a statewide soil health report that would then become a roadmap for future research and investment strategies in agriculture.

"Maybe those efforts would be in areas where we aren't (currently) going towards," Duff said. "Maybe it's not just about good irrigation with water conservation and better drip lining or better pesticide applications. I think there are opportunities to look at different areas of soil health that we need more research into that aren't quite so obvious."

The reception from legislators has been positive so far, Duff said, and having WSU, WSDA and SCC collaborating on the initiative is a huge boost.

"Washington State University is a powerhouse institution in agriculture research and has been for a long time. WSDA, which has a mandate both to protect soil health but also to help agriculture increase crop yields, is constantly working with agriculture to figure out the best way to make the industry strong. The State Conservation Commission is a great interface between landowners and surrounding communities and state and local agencies. They are the boots on the ground," he explained.

Each of the three agencies will play a specific role in the SHI, starting with collecting and analyzing soils from across the state and researching what that information means and how to use it. The final step will be to put that information into growers' hands and help them implement it.

Every farmer knows healthy soil is the foundation of sustainable agriculture

and even more information is needed in order to better understand and protect the soil's long-term health. The Washington Association of Wheat Growers (WAWG) supports the funding of the SHI, believing it will help grow farmers' knowledge of soil health and help further implement best practices to ensure sustainable, productive agriculture across Washington state. The SHI was one of WAWG's priorities that they advocated for during their Olympia Days trip in January.

WSU

The initial phase of the SHI falls directly into Cougar territory. WSU will be responsible for creating a soil health network of long-term research and extension sites across the state, as well as establishing a baseline assessment of the state's soil health. That assessment will help direct future research and education. WSU isn't a newcomer to the field of soil health; over the years, growers from many different commodities have helped fund university research into the field. In addition, in recent years, the university has been hiring faculty with soil health experience.

"From a Washington State University perspective, we always want to be part of statewide leadership initiatives, and agriculture is the thing we do best, both nationally and internationally," said Colleen Kerr, vice president in the WSU Office of External Affairs and Government Relations. "It's exciting to have the governor recognize the work WSU has been doing around soils."

Twenty or 30 years ago, soil conversations tended to concentrate on quality, such as increasing organic matter, neutralizing soil pH or soil nutrient levels. These days, said Rich Koenig, associate dean of WSU's College of Agricultural, Human, and Natural Resource Sciences and the director of WSU Extension, the conversation has shifted to a soil's microbiome.

"We know that among the many microorganisms that make up the microbiome, some cause disease, some suppress plant disease. Some increase nutrient uptake, some suppress it," he explained. "This idea that soils have a microbiome has been around for some time, but now

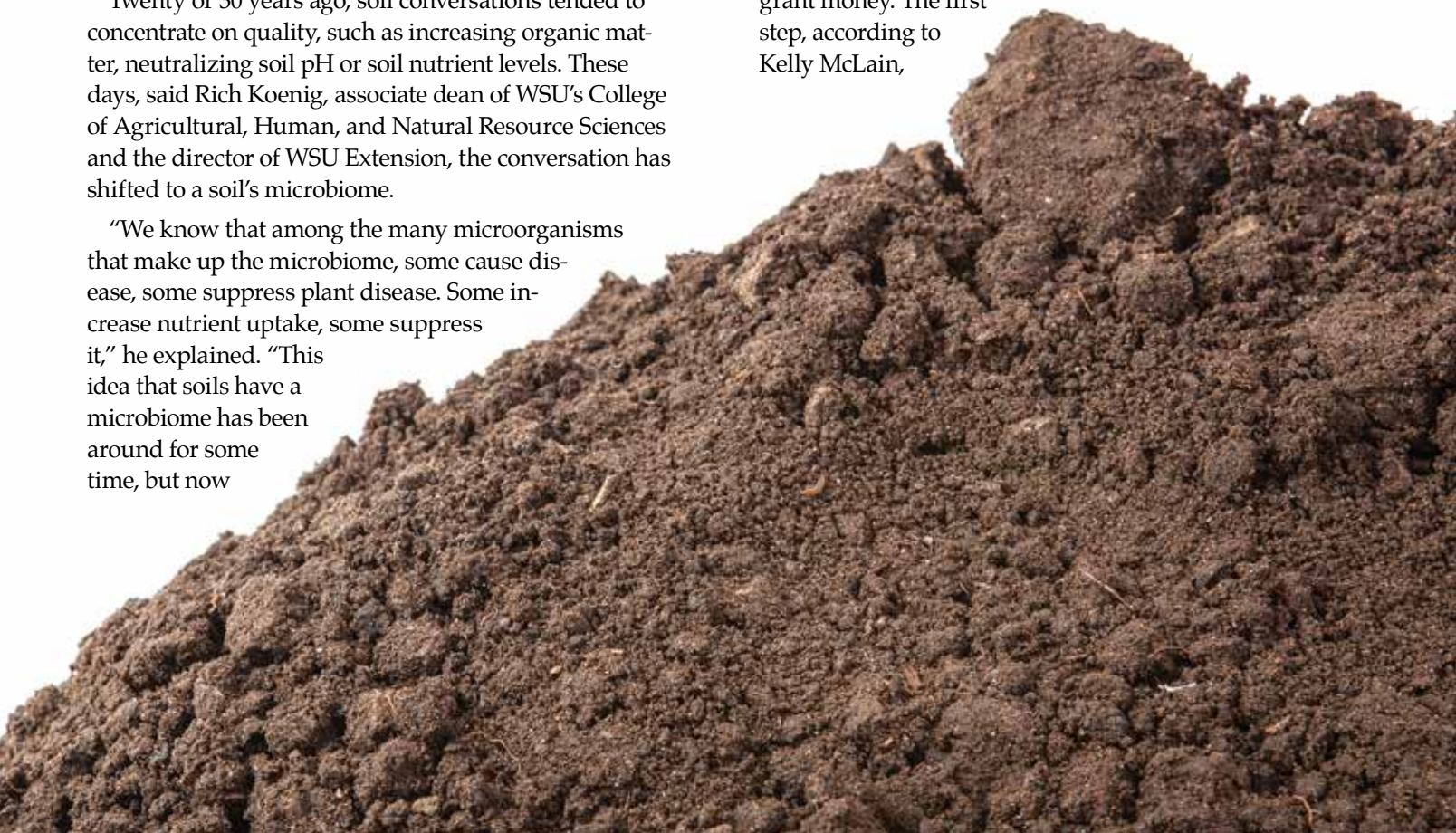
we have the tools to be able to determine who's there, and what are they doing. One of the goals (for the SHI) from the WSU side, is to be able to better understand this soil microbiome and the impacts of what people are doing in the field on the microbiome so we can link management practices and recommendations consistently with better soil health outcomes."

Kerr sees the initiative as an opportunity to lay the groundwork for long-term research projects that will continue after the SHI has accomplished its goals. Koenig agreed, adding that the research funded by the SHI will help WSU take current science and technology to the next level.

"Much like when molecular techniques became available for plant breeders, you saw a definite acceleration in the ability to breed and select plant varieties. These techniques will allow us to better understand soil and soil health. It's going to become a routine part of research and implementation in the future," he said.

WSDA

The initial funding that WSDA is requesting will be used to support a new, Olympia-based soil health scientist to help coordinate the research WSU will be doing and identify any gaps in that research. The department will also be responsible for creating the baseline soil assessment by taking soil samples from across the state. The state money will be paired with federal specialty crop grant money. The first step, according to Kelly McLain,



WSDA policy advisor, is to determine where in the state are the good, average and bad soils, and what soil health practices might mean on-the-ground for producers in terms of better yields, better water quality and less soil erosion.

"The second thing we want to do is more nuanced, and we aren't certain what it looks like, but what are all those ancillary benefits that citizens of the state get from soil health," she said. "We can talk about soil health in terms of improved yield or higher moisture content, but it takes it beyond that to reduced pest and disease pressure and that reduces inputs on land. I would like to see us capture those ancillary benefits so we can put more value on those. Depending on where you are in the state, those can be just as valuable as the grower getting better yields."

One of the biggest challenges on the WSDA front is getting mobilized quickly enough to acquire the significant number of soil samples that will be needed and getting them analyzed in a timely manner. McLain said the department is already having conversations on how they want to tackle that issue.

"Mobilization is the obstacle with every new program. We've been doing small projects (like this) at the agency for at least five years, so we are ramping this up on a big-

ger scale, kind of like building a plane while flying it," she said. "The baseline assessment is our highest priority. Getting all those samples and getting the analysis done and written up will be extremely important."

SCC

Once the soil health research has been collected and analyzed and a roadmap developed for moving forward, the SCC will step in to provide outreach and education to growers, primarily through local conservation districts.

"We want to help WSDA and WSU bridge that gap between university research and scientific process and get that information translated so it can be utilized and implemented by farmers and ranchers," explained Alison Halpern, SCC policy assistant. "We would like to see findings of this research get implemented on the ground, and we'd like to facilitate that process."

Halpern explained that there is often a gap in research being conducted and getting those findings out to the people who would most benefit from it. The conservation districts already work closely with the agricultural community and can do much of the necessary outreach.

"We have these great plans and ideas, three state sister agencies that are wanting to share the load for the good of

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Washington state and our agricultural community," she added.

Funding for the SCC's part in the SHI is not included in the governor's proposed budget. Halpern anticipates that funding happening in the 2021-23 biennium, once the majority of the data has been analyzed, and it's time to work with farmers to put the recommended practices on the ground.

Looking forward

As previously stated, funding for the SHI was included in the governor's proposed budget, and the three agencies are waiting to see if it will be included in the House and Senate budgets. McLain said that the reception from legislators so far has been encouraging, especially from those representing Eastern Washington districts. McLain acknowledged that if the initiative isn't included in all three budgets, it will be a big "lift" to get it funded. Whatever the outcome, WSDA is determined to move forward on the soil health front and translate sound science into on-the-ground solutions for farmers, the environment and the public.

"We know this is a huge priority for the industry, but also for the state family that has been working on this," McLain said. "We will keep working on getting this funding until they bang the gavel." ■

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To burn or not to burn?

Washington state farmers use Ecology, Ag Burning Task Force to answer that question

By Trista Crossley

For more than two decades, the Ag Burning Task Force has been quietly going about its business helping keep the air over Eastern Washington clear. They've had to balance the impacts of air pollution on public health with the needs of growers who rely on burning as part of a successful farming operation. These days, maintaining that balance is more difficult thanks to a wildfire season that is starting earlier with bigger, more intense fires.

The issue of ag burning came to a head in the early 1990s when the Washington State Department of Ecology (Ecology) was sued over air quality by an environmental advocacy group called Save Our Summers. The task force was established as part of the state's Clean Air Act with the goal of reducing air pollution from ag burning. Back then, hundreds of thousands of acres across the Pacific Northwest were burned each year. Cereal grains and bluegrass seed were two of the biggest crops in Eastern Washington that relied on burning to clear stubble. These days, an average of 120,000 acres are burned annually, according to Kary Peterson, Ecology's ag burn unit supervisor.

The task force, which is made up of clean air advocates, state agency staff, farmers, academia and agricultural stakeholders, meets twice a year. The task force is responsible for setting the fees farmers pay to burn; developing best management practices (BMPs) for reducing air pollution from ag burning; and identifying and funding research for alternatives to ag burning.

"One of the main things at Ecology is public health and clean air, and what a lot of people outside of Ecology or in different agencies don't understand is that farmers, regulators, researchers... everybody wants clean air. Everybody breathes air. Even the guy who burns is a clean air advocate," Peterson said.

Most of the ag burning in Washington takes place in the higher rainfall zones or in irrigated areas. Besides cereal crops, orchards and vineyards also

utilize burning to help clear residue. Burns generally happen in the spring and fall. Ecology is responsible for issuing burn permits and making the daily burn decision. That burn decision is based on weather forecasts, as well as any other factors, such as wildfires, that might degrade air quality.

Ecology works with the county conservation districts to issue burn permits. Permits are valid from six months to one year, depending on the type of permit issued. Ecology makes the daily burn decision and tries to post that decision by 9 a.m. seven days a week. Growers can call a telephone number to get the daily burn decision or can get it by email.

Dave Knight, the air quality manager for Ecology's Eastern Region, said the number of complaints have dropped because the agency's forecaster and meteorologist do a good job of predicting conditions for good burning, so the smoke isn't as noticeable. Fewer acres being burned is another reason complaints are down. Peterson said that can be attributable to better agricultural equipment, such as seeders that can deal with heavy residue; direct seeding; and crop rotation tactics used by farmers. Then there's the wildfire smoke, which can limit the number of days ag burning is permitted, as well as how many acres are burned.

"For us to complete our work and for farmers to complete their work, we try our darnedest to get them burned in between wildfire smoke episodes. We might get a day or two to clear out (from wildfire smoke), and we start burning again. But we have to be sensitive to what the public has been under. We normally try to burn away from populated areas as best we can. That part has been a real balancing act. I honestly think guys who burn, it's not that they want to burn, it's the way they farm, and for what they are going to grow they need to burn. They don't burn for fun," Peterson said.

Knight added that there's currently a push for more prescribed fires on state and federal lands to try to head off

"One of the main things at Ecology is public health and clean air, and what a lot of people outside of Ecology or in different agencies don't understand is that farmers, regulators, researchers...everybody wants clean air. Everybody breathes air. Even the guy who burns is a clean air advocate."

*—Kary Peterson,
Washington State
Department of Ecology's
Ag Burn Unit Supervisor*

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Some of the research endorsed by the Ag Burning Task Force included a study to validate the ventilation and dispersion models the Washington State Department of Ecology (Ecology) uses to make the daily burn decision. The study was done by the Environmental Protection Agency, Ecology, the Nez Perce tribe, Washington State University, the National Weather Service and a number of other university and government agencies. Photo courtesy of the Washington State Department of Ecology.

future wildfires. Unfortunately, that puts more smoke into the air, and it's one of the things the task force will need to consider going forward.

"DNR, Fish and Wildlife, national forest...we are going to have to learn how to share the air," he said.

Another item that could have a big impact on ag burning and the task force is the new pulp plant in Starbuck, Wash. The plant uses wheat and alfalfa seed straw to make pulp. The pulp is sold to make a variety of papers products, and Knight said some farmers are choosing to bale their straw and sell it to the plant rather than burning it off.

While the number of acres being burned has dropped, Peterson doesn't think field burning will ever completely go away. Besides clearing stubble, burning is also used as a pest and weed control method. That could be especially important if pests develop chemical resistance.

"Weeds aren't resistant to fire," he explained. "(Ag burning) is one of the tools in the toolbox that's necessary under certain conditions."

Research, funded by those fees, is a big part of what the Ag Burning Task Force does.

Since 1998, the task force has funded nearly \$1.4 million in research projects. Most of the projects tend to focus on alternatives to burning. Projects are funded every two years, and Peterson said they have about \$140,000 available this year. The task force determines which projects get funded. One of the more recent research projects investigated the benefits of the residue left on the fields after burning and how that residue impacted soil health.

Neither Knight nor Peterson foresee a time when the Ag Burning Task Force's work isn't relevant. As new crops and new practices are put into farmers' rotations, some of them might utilize ag burning.

"As farming changes, those BMPs change, and they (the task force) are the folks that make sure the BMPs are good for clean air and for the farmer," Peterson said. "The state of Washington has allowed hemp growing in some areas, and lo and behold, burning is one of the main ways to get rid of that residue. The task force was involved in our decision on what we are going to do on hemp fields."

For more information on the Ag Burning Task Force, visit Ecology's website at ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Boards-Councils/Agricultural-Burning-Research-Task-Force. ■



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AMMO 2019

Working out the global wheat market

SOFT WHITE WHEAT IS ONLY BRIGHT SPOT IN OUTLOOK

By Trista Crossley

According to **Darin Newsom**, when you talk about wheat, you can't just talk about U.S. wheat, because out of all the grains, wheat is the most global market of all.

"There's always a major wheat crop hitting the market somewhere in the world," he explained. Newsom was the guest presenter at one of February's Agricultural Marketing and Management Organization (AMMO) seminars. Newsom is a former senior analyst with DTN/The Progressive Farmer. He now owns his own marketing company. "The bottom line is the world is oversupplied with wheat, and there's a lot of competition out there. Everybody is growing wheat."

Newsom advised growers to watch the stocks-to-use numbers from the World Agricultural Supply and Demand Estimates (WASDE) to know if the market is bullish, bearish or neutral. The higher the ending stocks to use is, the more bearish the market is. And right now, he added, that number is about the highest it's ever been.

China is often heralded as the wild card in the wheat market as the country reportedly holds nearly half of the world's wheat stocks. If you take China's numbers—stocks and demand—out of the equation, Newsom said he didn't think it would change anything. He also cautioned growers to take the WASDE numbers with a grain of salt, saying that the U.S. Department of Agriculture isn't very good at predicting even the U.S. stocks.

"If we can't predict in the U.S. with data that is openly available, how do we ever guess what China has? What Brazil has? We don't really know," he said.

Newsom doesn't see the overall price of wheat changing much in the near future, however it could be worse. Thanks to weather in South America, specifically drought in Argentina, U.S. agriculture is in a slightly better position than it might be otherwise. He said this year's spring crop is relatively neutral in terms of the market, and hard red wheat doesn't look overly good to him.

"What the market is showing about fundamentals, it's hard to get excited about the major classes of wheat, except for soft white wheat. The only class of wheat outdistancing the previous year is white wheat," he said. "It's the least ugly dog in an ugly dog contest."

Newsom also quickly touched on the corn and soybeans



markets. He is bearish on soybean old crop, saying he thinks the U.S. has a lot of beans on hand. Corn, on the other hand, has continued to see strong demand, but "corn is boring. It doesn't matter what the ending stocks are, the corn price doesn't change."

The AMMO seminar ended with Newsom explaining his seven rules of marketing:

- **Don't get crossways with the trend.** Most markets have two sides, noncommercial (investment, speculative, etc.) and commercial (those involved in the cash market). The trend is price direction over time, and the trend of the futures market shows the flow of non-commercial money. If you stay in step with the trend, you'll be in step with noncommercial side, and they have more money.
- **Let the market dictate your actions.** The commercial side of a market is the real supply and demand. You

know what they are doing by looking at futures price spreads and then looking at the trend. In grains, you can use the percent of calculated full commercial carry. There's also basis or the relationship between cash and futures.

- **Use filters to help limit risk.** An old saying is, "margin calls can be the death of the best marketing plan." Timing is important, and seasonality—how markets move over the course of a 12-month period—should be considered. Look for the market to be in the upper 1/3 to sell, and if you want to buy, try to hit the lower 1/3. Volatility, or how fast and far a market can move over a period of time, acts as a multiplier on time value and helps determine what a better strategy might be (options, futures hedges, cash forward contracts, etc.).
- **A market that can't go down won't go down.** Another old saying is, "it doesn't pay to be right if the market is wrong," and the market is never wrong. Market corrections are an overused cliché used to explain the unexplainable. The market, in its entirety, knows more than we do.
- **It's the "what" not the "why."** Much of what passes for market commentary is just noise. We never really know the "why," but we can always tell the "what." Remember, the market knows, and the market moves. We can read its moves without knowing why it moved.
- **Fundamentals win in the end.**
- **The stock market goes up over time.** ■

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AMMO 2019

Overcoming production challenges

WORKSHOP FOCUSES ON USING VARIETY SELECTION, PROPER CHEMICALS FOR PESTS

By Trista Crossley

Production challenges and options to overcoming them was the topic of the final session of the Agricultural Marketing and Management Organization's 2019 winter schedule in February. Ryan Higginbotham from HighLine Grain Growers talked about disease pressure and how choosing the right variety can help address those issues, while James Zahand of James Zahand Consulting talked about herbicides and weed resistance.

Pick wisely

Higginbotham began his presentation by reviewing how certified seed is produced, typically a five-year process that begins when a variety is identified for release. The steps include:

- Identifying "seed-worthy" ground that has minimal weed issues and is one crop removed from wheat (to eliminate volunteers);
- Ensuring purity at planting by cleaning the seed truck, planting equipment, drills, etc.;
- Season-long monitoring to stay on top of weeds and spraying;

- Inspection by the Washington State Crop Improvement Association preharvest to check for contamination of weeds, including a zero-tolerance policy for jointed goat grass;
- Ensure purity at harvest by cleaning all equipment, both the harvesting equipment and the receiving facility;
- Grade a sample at harvest;
- Cleaning the seed to remove off material, such as weed seed, other grains, rocks, chaff, etc.; and
- Submitting a sample to the Washington State Department of Agriculture to verify the purity and germination of the seed.

Higginbotham then addressed the different diseases that plague Pacific Northwest wheat crops and demonstrated how to use the variety selection tool at smallgrains.wsu.edu to see how different varieties in different rainfall zones fare against these diseases.

Stripe rust. There are two types of varietal resistance: high temperature adult plant resistance and seedling or all-stage resistance. Seedling resistance is in effect all the time but is specific to a particular stripe rust race. Adult



At the final winter session of the Agricultural Marketing and Management Organization's schedule, Ryan Higginbotham (left) from HighLine Grain Growers talked about disease pressure and how choosing the right variety can help address those issues.

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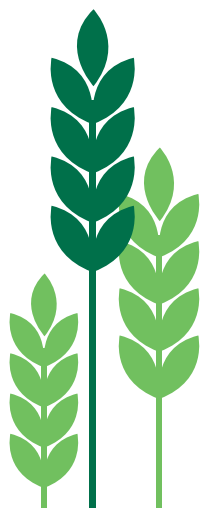
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James Zahand of James Zahand Consulting talked about herbicides and weed resistance at the final Agricultural Marketing and Management Organization's winter workshop.

plant resistance is not stripe rust race specific, but it is temperature and growth stage dependent. In order to activate the adult plant resistance, temperatures need to be at least 70 degrees and plants have to be at a certain growth stage. When looking at which herbicide to use, growers should consider those with multiple active ingredients, because the more active ingredients, the longer the stripe rust protection will last. However, some herbicides have harvest restrictions or plant stage restrictions. This information is noted on herbicide labels.

Cephalosporin stripe. Higginbotham said this disease is more problematic in higher rainfall areas, and it favors soils with a low pH. Spores enter through root injuries often caused by freeze-thaw cycles and can overwinter on stubble. Seed treatment and foliage fungicides are generally not very effective. Delayed seeding dates can help because plants have a smaller root system, so there's less damage caused by that freeze-thaw cycle. Tillage may help combat the disease, but won't cure it. Resistant varieties are the best option.

Fusarium crown rot or dryland foot rot. This soil-borne disease infects wheat plants via the crown or roots and infects both winter and spring wheat. Any sort of drought

stress predisposes plants to infection. Overfertilization can also promote infection. Higginbotham said crop rotation will help manage the disease, adding, "like anything else, if you go wheat on wheat on wheat, you are just asking for trouble." Seed treatments will help as will appropriate seeding and fertility rates, but genetics are the best option.

Eyespot/strawbreaker foot rot. This disease causes distinct, eye-shaped lesions. The best way to manage for it is to plant a resistant variety. Growers should also avoid extremely early seeding and should apply a spring fungicide application to susceptible varieties prior to jointing. Seed treatment is not generally very effective.

Hessian fly. This mostly affects spring wheat, but it can be found in winter wheat. The best option for growers is to plant a resistant variety. Higginbotham said Hessian fly can be hard to treat in the Pacific Northwest because the region can have multiple hatchings. Other management ideas include crop rotation, some tillage and seed treatments. He added that the bugs can overwinter in residue and for growers not to count on an insecticide to help.

Higginbotham also touched on low falling numbers, canola and the pros and cons of seed treatments, as well as the benefits of fall-planted peas as a rotation crop for wheat.

"Growers should recognize that there are a litany of things that cause problems in wheat, and most of them we have solutions for, whether it's a resistant variety, some sort of cultural practice or a chemical practice, there's a way we can deal with those," Higginbotham said afterwards. "But if you don't know what it is or don't identify it, you can't tackle it."

From disease to weeds

If nationally certified crop adviser James Zahand had a motto for his presentation, it would have to be "things are always changing," specifically how weeds are adapting to the chemistries and practices that growers are using to try to control them.

"Once you identify the weed, then you have to think about the tools you have," he told the group. "We've been using chemistry for decades, and because of the way we've used herbicides, weeds have developed resistance."

Zahand told growers that knowledge is the key to slowing weed resistance. Growers should learn to identify what weeds they have, understand the tools they have to control those weeds and utilize a variety of cultural, physical and chemical tools to control those weeds.

Herbicides work by interfering with one or more vital plant functions such as:

- Photosynthesis (making food);

- Pigments (energy/light capture);
- Respiration (energy);
- Amino acids (protein/growth);
- Lipids (cell membranes); and/or
- Hormones (growth/reproduction).

There are approximately 30 different groups of herbicides based on mode and site of action, and Zahand warned growers that no new modes of action have been discovered since the early 1990s. He then walked growers through how the different modes of actions work and what symptoms plants will exhibit. He summarized his presentation by saying:

- Knowing the weed you want to manage will help you develop a plan of action;
- Understanding how herbicides are classified will help you understand how they work;
- Understanding how herbicides work will help you make better choices when choosing a herbicide;
- Choosing the right herbicide will give you better weed control and higher yields, hopefully at a lower cost; and
- Choosing the right herbicide will help manage herbicide resistance.

"Herbicide resistance is a serious issue," he said. "We have a limited number of tools now, and there isn't a lot more coming down the pike. Understanding the problems, the tools that growers have available to them, including tillage, will be important in slowing herbicide resistant now and in the future." ■



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Ritzville grower utilizes direct seeding, minimum tillage methods

Ron Jirava, 2003/04 WAWG past president

By Kevin Gaffney

Perhaps it's not surprising that **Ron Jirava** runs his farming operation a little different than many of his fellow growers. From the very start, he has always done things his own way. This is a man who was born in a 1955 Ford on historic US 10 near Tyler, Wash.

"I just arrived early. They say that's the last time I was early for anything," deadpanned Jirava.

Due to exposure, Jirava spent time in an incubator in a Spokane hospital before coming home to Ritzville.

Nothing quite so dramatic happened during his hometown school years. After high school, Jirava completed his associate's degree in ag business at Spokane Falls Community College. Like most farm kids, he worked on the family farm growing up. Following college, while working for Pioneer Seed, a local fertilizer company, Jirava took advantage of an unusual opportunity. He spent 1984 in Saudi Arabia working with irrigated crop producers.

"We had to maintain irrigation circles there. We had a lack of tools that typical operations here at home would have on hand. I enjoyed the work and the opportunity to get out of town for a while."

The Jirava family farm, founded in 1882 near Ritzville, Wash., has a storied history.

Jirava's great-great-grandfather was the wagon master for one of the final two wagon trains to travel to the region. The arrival of the railroad in 1883 put an end to them.

"My ancestors homesteaded at Paha, near Ritzville," said Jirava. "I actually still live on the original 480 homestead acres of our family farm. We also still farm land that several relatives acquired over the years. An area bank was failing in the early 1900s, and our family was able to purchase an entire half section for \$5 an acre."

Jirava took over the family farming operation about one year after returning from Saudi Arabia.

Jirava was one of the early proponents of no-till farming, now more commonly referred to as direct seeding.



Like hundreds of other farmers interested in no-till production, he visited South Dakota's no-till farming guru, Dr. Dwayne Beck.

"I remember asking Dr. Beck several questions, and he essentially told me I was going to have a tough go of it," recalled Jirava. "With our cool season climate, we couldn't use the rotation crops that his system recommended. Their South Dakota region raises warm season grass crops that we can't grow in our area. Beck's input did help me to determine a direction in which to move forward, however."

"We have a 20+ acre test plot that has had 22 years of continuous spring wheat crop production. With Bill Schillinger's assistance, we have developed an amazing

amount of information. Several research papers have been written over the years.

"Also, we now have been chosen as one of the 125 sites nationwide by the Soil Health Institute for evaluation of soil health on our test plot acreage."

The original 480 homestead acre field has been in continuous direct seed spring wheat production every year since 1997.

"It has its ups and downs, depending upon our weather. We experimented with hard red spring wheat, but with our moisture profile, it was very difficult to attain both good test weight and high protein. If we made protein, the test weight was down, or vice-versa. For this reason, we decided to stick with soft white wheat," he said.

Unlike many direct seed farmers, Jirava has several fields where he employs minimum tillage farming methods. They regularly use an undercutter and make the fewest passes possible over their fields. Jirava uses some precision ag technology, but hasn't completely adopted it throughout his operation. He grows yellow winter peas in his rotation. He had them in his test plot for ten years before deciding to incorporate them into his operation.

"We have had pretty good yields, and the peas place up to 70 pounds of nitrogen in the soil. We will chemfallow

the field and then plant winter wheat following the peas. That would be followed by a summer fallow year."

Jirava came to the Washington Association of Wheat Growers' (WAWG) leadership in a roundabout way. He helped found the Washington Canola Commission and while serving as chair of that commission, became involved with the Ag President's Group.

"The Ag President's Group was an excellent way to combine forces with other ag leaders to promote what was in the best interests of Washington agriculture. We had the apple growers, wheat, barley and canola growers, beef and dairy cattlemen, beekeepers, etc. We were able to find common issues to work together for in Olympia with the legislators. I believe having that unified voice helped us to be more effective.

"After six years on the Canola Commission, my term was about to end. I was approached about going through the WAWG leadership chairs, so I accepted."

Jirava has a strong belief that farmers need to be involved in their industry.

"Serving three years is a major time commitment, but the work is just as important as it ever was," he said. "Also, the county wheat grower associations that provide input and future leaders for the state and national level are vital.

"Unfortunately, it has become more difficult in some counties to fill the offices and to hold regular monthly meetings. The responsibility often falls onto the same people year after year. This can be counterproductive and eventually people experience burnout.

—Ron Jirava

"It has always been my philosophy, whether you are a cattleman, fruit grower or a wheat farmer, that advocating and lobbying for your industry is simply part of your job. It can be just as critical as spraying, seeding or bringing the harvest in."

Jirava believes the WAWG leadership system works pretty well. In the third year of holding office, WAWG

"It has always been my philosophy, whether you are a cattleman, fruit grower or a wheat farmer, that advocating and lobbying for your industry is simply part of your job. It can be just as critical as spraying, seeding or bringing the harvest in."



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presidents come well-prepared for their duties. He enjoyed his years in WAWG leadership.

"I considered it part of my farming duties," he said. "It was a nice break from sitting on a tractor seat and especially more enjoyable than working on a broken-down piece of farm equipment.

"One of the biggest issues we worked on while I was president was taxes. I think that is an issue that never goes away. We worked with state officials to get ag tax preferences put into place.

"I remember making our case with them, explaining that Washington and Hawaii were the only two states that taxed the sale of farm equipment and parts. Conversely, if I was going to start a manufacturing plant in Seattle, there were all kinds of tax breaks available. We must have reached some of the right people, because we eventually won some significant legislative battles.

"One of the biggest problems is that government officials have a bad habit of thinking that it's their money, not ours. They keep looking for new ways to take it from us."

Conservation issues, crop insurance and the federal disaster program were also key issues during the time Jirava served as president.

Like most dryland farmers, his operation has grown over the years. He formed a farming partnership with a neighbor, Allan Koch, and took over management of that farm. Following Koch's passing, Jirava continues managing those acres. He is now training Trevor Jantz, grandson of his late partner, to eventually take over the operation when Jirava is ready to retire.

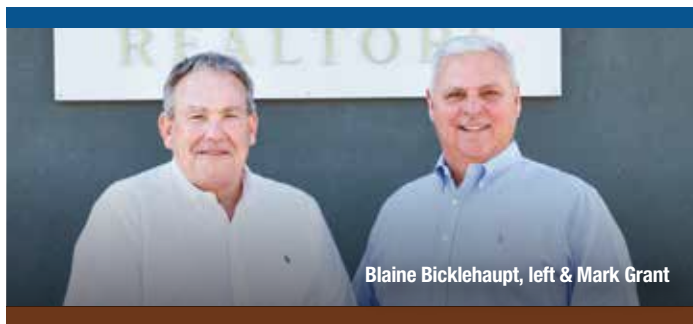
While retirement for Jirava is likely a decade down the road, he believes he'll know when it's time to call it quits.

"I'll be okay with helping out now and then, but also not be afraid to say, 'No, not today, but thanks anyway.' Time for someone younger to take the mantle." ■

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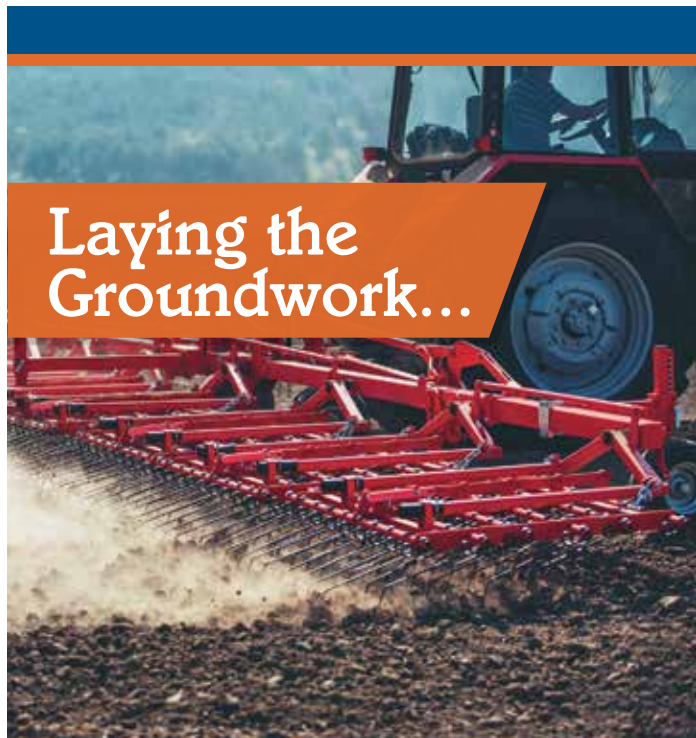
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*The day the Lord created
hope was probably the same
day he created Spring.*
—Bernard Williams



CHAIRMAN

WASHINGTON GRAIN COMMISSION

By Gary Bailey



It's easy to get bogged down in bad news. Prices, weather and trade, not to mention falling number discounts, conspire to make it appear as if there is nothing but bad news. But as a glass-half-full kind of guy, I disagree! There's plenty happening in the world of wheat to give us optimism for the future, even when we are surrounded by negative news.

Let me review some of the positive news that came out of a U.S. Wheat Associates (USW) winter meeting in Washington, D.C., in February. With the National Association of Wheat Growers (NAWG) holding their own winter meeting the same week, in the same hotel, we were able to visit Capitol Hill in the company of our Washington Association of Wheat Growers (WAWG) allies.

Sitting face to face with our national political representatives and their staffs is a powerful opportunity to get our message across without filters or distortion. But what makes these opportunities even more compelling is how well WAWG and the Washington Grain Commission (WGC) work together. Trade, farm bill implementation, research, river and road infrastructure were a few of the topics covered. Thanks to WAWG for doing a great job in scheduling these important meetings.

While in the "other" Washington, the WGC also spent time reaching out to the federal agencies we work with like the Agricultural Research Service (ARS). My thanks goes out to Mary Palmer Sullivan, WGC vice president, for arranging a meeting with the ARS. Over the last 20 years, the commission has invested more than \$11 million in ARS projects that directly impact Pacific Northwest grain farmers. The good news is that the ARS has repaid that investment with millions of dollars of their own, earmarked for personnel, equipment and additional research.

After recently fielding concerns about the future of the club wheat breeding position, we also learned at the meeting that federal support for the specialty wheat class will continue. That should not only be reassuring to the farmers who grow it, but to our export customers for whom it is considered an essential ingredient.

America is no longer the No. 1 exporter of wheat in the world, a designation it lost several years ago and isn't expected to regain. The end of our premiere status is primarily caused by other countries growing more wheat while U.S. acreage has declined. But as we all know, what counts is not yield, but money in the bank. In that respect the U.S. remains in first place. Numbers that

USW President Vince Peterson made available shows that in 2017, the U.S. wheat export crop was worth \$6.1 billion compared to Russia's \$5.8 billion, Canada's \$5.1 billion and Australia's \$4.7 billion. This is a direct result of higher quality wheat raised in the U.S. returning greater value to producers.

Another positive development from D.C. came during the budget committee meeting of USW. Although the government shutdown created some challenges for Kevin McGarry, the organization's vice president of finance, all's well that ends well.

USW has caught up on all the funding it missed during the shutdown and received the first payment of \$8.25 million made available under the three-year Agriculture Trade Promotion Program, created by the Trump Administration. As icing on the cake, USW is also on tap to receive an additional \$700,000 in funding from the Foreign Market Development program. Altogether, USW's 2019 \$19.3 million budget raises the number of times producer funds are matched by the federal government from 1.7 times in 2018 to 2.4 times.

The Wheat Yield Contest, created by the National Wheat Foundation, an arm of NAWG, is another positive development. In 2018, there were more than 300 entries around the U.S. with 23 winners. The contest was created with the idea of helping show how to make wheat more competitive with corn and soybeans. But corn and soybeans don't require the same attention to quality as wheat.

With input from USW, the yield contest has begun testing the quality of winning entries, and work continues to add additional quality characteristics into the contest. It's good news for our customers to see that our commitment to quality is not just lip service.

Another positive development for wheat growers is the creation of Innovature, a proactive effort by BIO (a trade organization representing the biotechnology industry) and the American Seed Trade Association. The name mashes together two words: innovation and nature and is intended to educate the public about the new technology of gene editing. It's important that consumers and customers, both domestically and overseas, understand how developing products through gene editing differs from the GMO process.

There remain plenty of items on the negative side of the wheat ledger—and I will continue to write about them here. But as the above demonstrates, there are plenty of positives to balance things out too. ■

REPORTS

WASHINGTON GRAIN COMMISSION

Rising optimism fuels falling numbers research

By Camille M. Steber and Kimberly Garland Campbell

Since 2011, Pacific Northwest growers have suffered major losses from discounts due to low falling numbers (FN). In 2016 alone, it's estimated that Washington farmers lost anywhere from \$30 million to \$200 million due to FN discounts.

The first Falling Numbers Summit was convened in February 2017 when researchers and wheat industry representatives identified two major needs: improved testing and breeding varieties with improved resistance to low FN.

The second Falling Number Summit was held in Portland in late January 2019. This article is intended as an update on solving the challenges of low FN. Go to steberlab.org for more information.

Dr. Camille Steber with the Agricultural Research Service of the U.S. Department of Agriculture (USDA-ARS) opened the second summit by describing the FN test, its foibles and the causes of low FN. The Hagberg-Perten FN test measures starch degradation in wheat based on how many seconds it takes a stirrer to fall through a gravy made by boiling a water-whole grain meal mixture. Starch is digested by the enzyme alpha-amylase. More alpha-amylase causes more starch digestion, allowing the stirrer to fall faster through thinner gravy. Overseas customers require an FN of more than 300 seconds to avoid the risk of poor end-use quality due to elevated alpha-amylase.

FN varies with atmospheric pressure because the test uses boiling water, and the temperature at which water boils depends on pressure. Altitude and weather (high and low pressure systems) cause differences in atmospheric pressure. Previous altitude correction tables had large altitude increments and no adjustment below 2,000 feet, leading to over- or under-correction.

Dr. Stephen Delwiche (USDA-ARS) used a hyperbaric chamber to derive an equation for continuous correction of FN based on barometric pressure. This should reduce problems with grain shipments testing at below 300 seconds at their destination after testing at above 300 seconds upon departure.



Camille Steber (left) and Kim Garland Campbell, both scientists with the Agricultural Research Service of the U.S. Department of Agriculture, address the second Falling Number Summit which took place in Portland Jan. 29-30 and featured a dozen scientists talking about the status of their research on both preharvest sprout and late maturity alpha-amylase.

Paul Katovich provided an elevator industry perspective on low FN. As general manager of HighLine Grain Growers Cooperative, Katovich is in the unenviable position between exporters who need grain with an FN of more than 300 seconds and farmers who are potentially docked if grain is under that threshold. Between 2002 and 2019, Katovich has experienced nine low FN events.

The elevator industry does "blend off" low FN grain, but it takes a great deal of sound grain to raise a low FN grain lot based on a liquefaction equation. While a sample measured at or above 270 seconds can be blended with sound grain to meet the 300 second threshold, an FN of 100 seconds is toxic; it cannot be blended off and can ruin a whole elevator of high FN grain, Katovich said.

HighLine Grain values its multigenerational relationship with farmers and wants to avoid degrading this

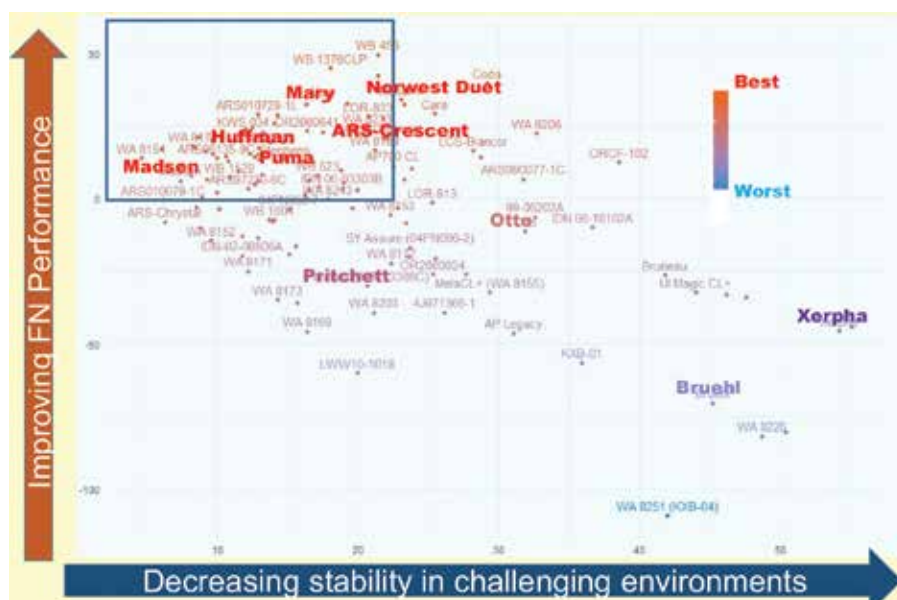


Figure 1. A factor analytic model was used to compare the tendency of cultivars to have low falling numbers (FN) between 2013 and 2016 based on FN testing of the Washington State University variety trials. The vertical axis shows increasingly good performance for FN while the horizontal axis shows an increasing tendency to respond poorly to challenging environments. Varieties in the boxed region have better resistance to low FN.

trust through harsh FN discounts. A typical discount schedule docks farmers 25 cents per bushel for every 25 seconds below 300; that means 50 cents for a sample below 275.

To avoid such harsh penalties, HighLine has gone to a continuous discount schedule of a half-penny per point (second) discount, but, as Katovich said, “It doesn’t take many mistakes to go broke. We are taking a calculated risk. We are trying to absorb as much of that risk for the farmer as possible.”

Elevated alpha-amylase in grain resulting in low FN has two causes: pre-harvest sprout (PHS) and late maturity alpha-amylase (LMA). PHS occurs when rain falls on mature grain before harvest with alpha-amylase providing fuel/sugar for germinating seedling growth, just as Mother Nature intended. In contrast, the purpose of alpha-amylase produced during LMA is unclear. LMA is triggered by a cold shock during the soft dough stage of grain filling.

Because PHS and LMA have different genetic and environmental triggers, wheat breeders must select separately for both. Washington State University (WSU) researcher Galina Mikhaylenko and Dr. Alecia Kiszonas (USDA-ARS) have shown that PHS appears to have a stronger impact on cake quality than LMA. Future research is intended to determine whether LMA-affected grain poses a lower risk to end-use quality.

Dr. Andrew Ross from Oregon State University (OSU) provided a historical perspective on falling numbers and improving the FN test. Ross was introduced to falling numbers in 1984 as a postdoctoral scientist in Australia. He says the main problem is using FN as a predictor of end-use quality instead of using a direct measure of quality (like baking a cake).

“The falling number test has its issues, but it is a valuable metric in the marketplace because the FN test can identify wheat with a risk of poor performance in end-use applications,” he said.

Ross is one of the inventors of the Rapid-Visco Analyzer (RVA), a test that is

more accurate than FN but only if the slower version (12 minutes) RVA test is run. Regardless of the testing method developed, there will always be a problem with “noise” at the 300 second threshold. That’s because alpha-amylase levels are the strongest determinant of FN below 300 seconds, but above 300 seconds, many other factors impact FN scores.

Two alternatives to the FN test were discussed during the second Falling Numbers Summit. Chun-Peng (James) Chen (Ph.D. student) and Dr. Zhiwu Zhang (WSU) have embarked on a mission to separate low and high FN grain using hyperspectral images of intact grain. This will be done using machine learning and the sort of mathematical modeling used for facial recognition. Since this is a new project, its accuracy is still unknown. It will be valuable, however, if it provides a cheap, fast, nondestructive method to prevent inadvertent mixing of high and low FN grain.

Another test method is being pursued at WSU by Drs. Amber Hauvermale, Andrew McCubbin and Mike Pumphrey. Hauvermale has produced monoclonal antibodies to the wheat alpha-amylase protein in order to create a highly sensitive ELISA “strip test.” While such assays use milled grain, they are accurate and are currently being used to detect GMO crops, pregnancy and disease. Researchers are investigating whether both methods can be used to differentiate between LMA and PHS, something the FN test cannot do.

The best way to reduce the risk of low FN is to select cultivars with higher resistance to low FN. WSU Ph.D. student Stephanie Sjöberg and Dr. Kimberly Garland Campbell (USDA-ARS) are developing statistical methods to quantify the genetic differences in varieties



It was standing room only at the Falling Number Summit where scientists, students, farmers and the elevator industry gathered to hear the latest on efforts to develop a better test to measure alpha amylase activity as well as work aimed at weeding out susceptible varieties.

and their responses to challenging environments.

A Factor Analytic Model allows researchers to separate genetic and environmental effects, looking both at a variety's overall FN performance (y-axis) and at the response to increasingly challenging environments (x-axis). See Figure 1. Looking at soft white winter varieties over three years showed that while newer releases like Otto and Pritchett have not yet reached an ideal level of resistance, they are superior to older varieties like Bruehl and Xerpha. Other varieties like UI-WSU Huffman, Mary, Trifecta, Puma, ARS-Crescent, ARS-Castella, LCS Hulk and Norwest Duet already show better resistance to low FN.

While PHS is an age-old problem, LMA was discovered mainly by Australian scientists in the 1980s. To select for LMA resistance, breeders need a reliable test that can be conducted in the greenhouse. WSU graduate student Chang (Chloe) Liu, Pumphrey and Steber found that LMA screening in the greenhouse is complicated. There is approximately a five-day window in grain development during which a cold temperature shock can induce LMA. The timing of this window varies between cultivars. Different plants, different tillers and different grains in a spike reach this stage at different times. The Northwest cultivars that Liu has examined don't induce LMA with a heat shock, but do with cold shock.

Given the labor-intensive nature of LMA and PHS screening, mapping resistance loci is a goal that's needed to speed up the breeding process. Dr. Jianli Chen from the University of Idaho (UI) has identified molecular markers linked to FN, visible sprouting and LMA in spring wheat. Since some of these loci fall on the same chromosomes as previously identified loci, future work will examine if any of these traits are controlled by similar genes.

Dr. Shantel Martinez from Cornell University mapped FN and PHS tolerance loci in soft white winter wheat while working at WSU with Dr. Arron Carter (WSU) and Steber. These markers will be used for genomic selection in WSU wheat breeding programs and others.

Efforts are also underway to use the power of gene editing to address the

FN problem without generating GMO wheat. Oregon State University wheat breeder, Dr. Robert Zemetra, is developing an efficient CRISPR/Cas9 system targeting a gene on chromosome 4A known to provide PHS tolerance in wheat and barley breeding programs on multiple continents.

Finally, Dr. Daolin Fu (UI) described using chemically induced mutations along with gene editing to create modified versions of the wheat alpha-amylase gene, TaAmy3. TaAmy3 is produced during seed development, not during LMA and sprouting. He will examine if mutations in TaAmy3 lead to higher FN.

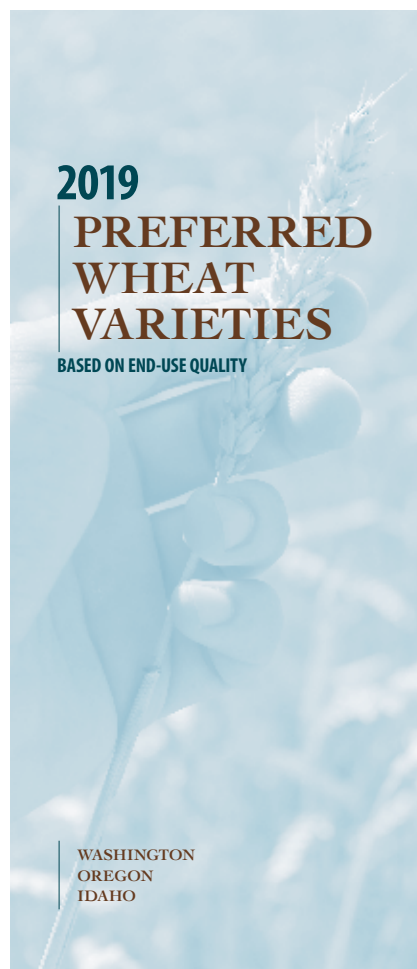
Although much progress has been made since the first Falling Number Summit, challenges remain. A "fix" remains elusive, but research toward better management is already helping protect wheat export customers, elevators and farmers. ■

More on FN

The Washington Grain Commission (WGC) podcast, *Wheat All About It!*, devotes three episodes to the Jan. 29-30 Falling Number Summit held in Portland. Listen to Paul Katovich of HighLine Grain explain the disconnect between the elevator industry and farmers in episode 113; to researchers explaining their work in episode 114; and to Oregon State University Professor Andrew Ross clarifying why a 60-year old test is still the best available, episode 115. Access the podcast on iTunes, Stitcher, Overcast, Pocket Cast, FM Player or by going to the WGC website at wagains.org and clicking on summaries. ■

Wheat quality continues to rise

2019 BROCHURE RANKS PACIFIC NORTHWEST VARIETIES ACCORDING TO SIX COMPONENTS



Copies of the 2019 Preferred Variety Brochure are available at seed dealers, elevator companies and at the Washington Grain Commission website at wagrains.org.

The 2019 Preferred Variety Brochure, which ranks Eastern Washington, Oregon and Northern Idaho wheat varieties by quality, reveals continued improvements in varieties' milling and baking scores, as well as agronomic performance.

Although all classes have shown dramatic improvements in quality since the Genotype and Environment (G & E) study, funded by the Washington Grain Commission, first began gathering data in 1997, nowhere is the upgrade as obvious as in the soft white spring category. All but two of the 13 varieties listed are considered "Most Desirable," the highest designation for quality.

Doug Engle, cultivar development manager at the Western Wheat Quality Lab (WWQL), an Agriculture Research Service facility located on the campus of Washington State University (WSU), said most soft white spring varieties have at least two levels of significance better quality than the 1994 WSU release Alpowa, which was used as the check variety until 2015. Alpowa was dropped as the control at that time because it was no longer a relevant line. It was replaced by Louise.

Varieties are evaluated according to six components. Baking properties are the heavy hitter with 60 percent of a variety's quality score based on how it performs in end-use applications. That's because while milling and agronomic properties are important, poor baking properties are largely unfixable. Milling attributes make up 30 percent of a variety's quality value, while test weight and protein are assigned a value of 10 percent.

In the soft white winter category, quality improvement is also obvious, though not as dramatic. Varieties are ranked according to "t-scores" based on the components listed above. In 2002, only one soft white winter variety had a t-score higher than a "3." In 2018, nine soft white winter varieties were rated with higher scores. There are similar improvements in the other classes.

Along with enhancements in quality have come an explosion of varieties, many of them from private companies. Limagrain and AgriPro/Syngenta each provide their experimental lines to the WWQL for evaluation prior to release, as do universities. This permits quality testing before commercial plantings of varieties.

David Hoffman, wheat technical lead at WestBred, said the company currently doesn't have the ability to provide their experimental lines for testing prior to release although the company does have "internal and public evaluations on quality, yield, agronomics and disease characteristics that assist us in making breeding to commercial advancements." This approach has resulted in several WestBred varieties being grown on substantial acreages before they can be assessed by the WWQL.

Engle said other companies have already decided not to release varieties based on the quality designation they would have received in the Preferred Variety Brochure, which is assembled with data from the G & E study. "Least Desirable" does carry a stigma.

"We need the lines for three years before their release to evaluate them properly. If we don't have them until they are commercial varieties, they could be on large acreages before we can establish their quality," he said. ■

2019 Quality Rankings

Varieties are listed by statistical quality rankings by class. When making a decision between varieties with similar agronomic characteristics and grain yield potential, choose the variety with the higher quality ranking. This will help to increase the overall quality and desirability of Pacific Northwest (PNW) wheat.

Most Desirable (MD)—These varieties generally have high test weights, appropriate protein content (kernel properties), and excellent milling and end-use properties.

Desirable (D)—The kernel, milling, and end-use qualities of these varieties range from good to very good. The quality attributes of these varieties are desirable in international trade.

Acceptable (A)—The kernel, milling, and end-use qualities of these varieties range from acceptable to good. Individual varieties may possess minor flaws. The quality attributes of these varieties are acceptable in international trade.

Least Desirable (LD)—These varieties have displayed low quality characteristics for this class of wheat. The intrinsic quality of PNW wheat will be improved if these varieties are not planted.

Unacceptable Except Customer-Specific Uses (UCS)—One or more critical flaws in quality are present in these varieties and will not make suitable products for this class of wheat. Production of these varieties should be targeted to specific end-uses and kept strictly segregated from general commercial channels.

SOFT WHITE SPRING

UI Stone	UI	MD
Tekoa	WSU	MD
Diva	WSU	MD
WB6341	WB	MD
Louise	WSU	MD
Alturas	UI	MD
SY Saltese	AP/SY	MD
Ryan	WSU	MD
Whit	WSU	MD
Seahawk	WSU	MD
Babe	WSU	MD
WB6121	WB	D
WB-1035CL+	WB	UCS

SOFT WHITE WINTER

Brundage96	UI	MD
UI Castle CL+	UI	MD
Bobtail	OSU	MD
Kaseberg	OSU	MD
Bruneau	UI	MD
Jasper	WSU	MD
UI Palouse CL+	UI	MD
UI WSU Huffman	UI/WSU	MD
Puma	WSU	MD
ARS-Selbu	ARS	D
Mary	OSU	D
ORCF101	OSU	D
SY Command	AP/SY	D
Skiles	OSU	D
LCS Shark	LCS	D
LCS Drive	LCS	D
WB 523	WB	D
SY Ovation	AP/SY	D
UI Sparrow	UI	D
UI Magic CL+	UI	D
Eltan	WSU	D
SY Dayton	AP/SY	D
WB-528	WB	D
Norwest Duet	OSU/LCS	D
Resilience CL+	WSU	D
Otto	WSU	D
Stephens	OSU	D
SY Assure	AP/SY	A
LCS Hulk	LCS	A
LCS Artdeco	LCS	A
WB1604	WB	A
Purl	WSU	A
ORCF103	OSU	A
Madsen	ARS	A
WB-1070CL	WB	A
Mela CL+	WSU	A
Curiosity CL+	WSU	A
Norwest Tandem	OSU/LCS	A
ORCF102	OSU	A
Rosalyn	OSU	A
WB1529	WB	A
WB-1066CL	WB	A
WB1376CLP	WB	LD
WB 456	WB	LD
Xerpha	WSU	LD
SY107	AP/SY	LD
SY Banks	AP/SY	LD
WB1783	WB	LD

HARD WHITE SPRING¹

UI Platinum	UI	MD
WB Hartline	WB	D
Dayn	WSU	D

HARD WHITE WINTER¹

UI Silver	UI	MD
Earl	WSU	A

HARD RED SPRING

Hollis	WSU	MD
Alum	WSU	MD
SY605 CL	AP/SY	MD
SY Selway	AP/SY	MD
SY Coho	AP/SY	MD
SY Steelhead	AP/SY	MD
Glee	WSU	MD
Chet	WSU	MD
LCS Luna	LCS	MD
LCS Iron	LCS	D
WB9411	WB	D
WB9229	WB	D
Kelse	WSU	D
WB9668	WB	D
Jefferson	UI	D
Bullseye	AP/SY	D
SY Gunsight	AP/SY	D
WB9518	WB	D
WB9879CLP	WB	A
Buck Pronto	LCS	A

HARD RED WINTER

UI SRG	UI	MD
Whetstone	AP/SY	MD
WB4623CLP	WB	MD
AP503 CL2	AP/SY	D
Norwest 553	OSU	D
LCS Evina	LCS	D
LCS Rocket	LCS	D
Farnum	WSU	D
Sequoia	WSU	D
LCS Jet	LCS	A
Keldin	WB	A
Esperia	Societa Produttori Sementi Spa	A
SY Touchstone	AP/SY	LD
Residence	Cebeco	UCS
Estica	Cebeco	UCS
Symphony	Tanio Tech	UCS

CLUB

ARS Castella	ARS	MD
ARS Crescent	ARS	MD
Cara	ARS	MD
ARS Pritchett	ARS	D
Bruehl	WSU	D

SPRING CLUB

Melba	WSU	MD
JD	WSU	MD

WSU Washington State University
UI University of Idaho
OSU Oregon State University

ARS Agricultural Research Service
AP/SY . . . AgriPro/Syngenta
WB WestBred/Monsanto

LCS Limagrain Cereal Seeds

¹Hard white wheats are scored for export quality requirements such as bread quality and potential noodle quality.

The rise and fall of stripe rust epidemics

Integrated management is key to savings



By Xianming Chen

Stripe rust is one of the most destructive diseases of wheat in the U.S., especially the Pacific Northwest (PNW), where it occurs every year and can cause a total yield loss.

From 1975 to 2018, stripe rust caused between 3 to 90 percent (average 33 percent) yield losses on susceptible varieties.

From 2002 to 2018, the potential average yield loss of susceptible varieties increased to 44 percent while the average potential yield loss of commercially grown varieties was 8 percent. That represents more than 15 million bushels of grain worth more than \$90 million dollars in Washington state alone.

Stripe rust epidemics in the PNW in 2016-2018

In 2018, stripe rust occurrence was relatively low in commercial fields, but the potential epidemic level was high, as rust was severe in experimental fields (Figure 1). Potential damage was comparable to 2016 and 2017. As shown in Tables 1 and 2 on the next page, the susceptible winter wheat check (PS279) had 70.5 percent yield loss, and the susceptible spring wheat check (AvS) had 66.4 percent yield loss.

For comparison sake, the yield losses of these susceptible checks were 71.4 percent and 54.5 percent in 2016, and 74.7 percent and 48.1 percent in 2017, respectively. The average yield loss of commercially grown varieties was 13.3 percent for winter wheat and 16.7 percent for spring wheat in 2018, while the values were 8.0 percent and 19.9 percent in 2016 and 13.7 percent and 7.4 percent in 2017 for winter and spring wheat, respectively. These differences can be easily seen in Figure 2.

Weather factors relevant to stripe rust epidemics

The differences in epidemic level between 2016 and 2018 can be partially attributed to different weather conditions. Figure 3 compares weather factors in Pullman, Wash., related to stripe rust. September thru October precipitation is directly related to levels of fall infection. The 2015 September thru October precipitation (1.59 inches) was below normal (Figure 3A), indicating a lower-than-normal infection. In fact, we did not find rust when checking winter wheat fields on Nov. 10.

In contrast, the 2016 total September thru October precipitation (5.37 inches) was 3.02 inches higher than



Figure 1. Severe stripe rust on a susceptible winter wheat variety at the flag-leaf stage in an experimental field near Pullman, Washington. Photo taken on May 30, 2018.

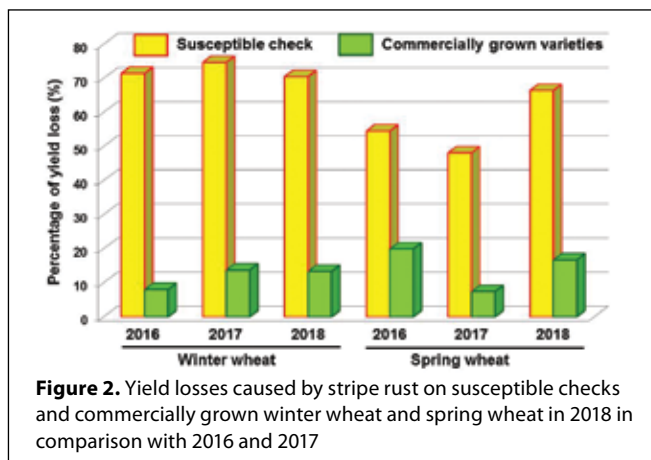


Figure 2. Yield losses caused by stripe rust on susceptible checks and commercially grown winter wheat and spring wheat in 2018 in comparison with 2016 and 2017

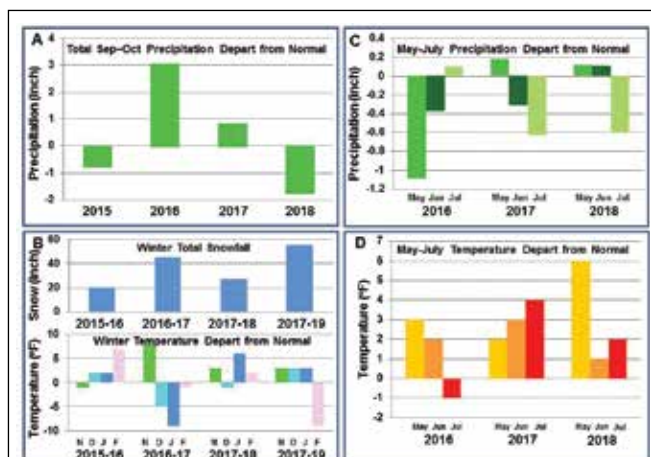


Figure 3. Comparison of weather factors in Pullman, Washington related to the stripe rust epidemics in the wheat crop seasons of 2016, 2017, and 2018.

normal. That year, we found high rust incidences in many fields in central Washington. The high incidence of stripe rust in the fall of 2016 indicated the initial rust inoculum was preparing for a more severe epidemic in 2017.

The 2017 total September thru October precipitation (3.16 inches) was only 0.81 inches higher than normal. We did not see any rust during our field survey on Nov. 7. The 2018 September thru October precipitation (0.60 inches) was 1.75 inches lower than normal. We found only two rusted leaves in an irrigated wheat field in Grant County on Nov. 14, indicating relatively low fall infection.

Winter is a bottleneck for rust survival. Temperatures below 14 degrees F will kill rust fungus in leaves, but the pathogen can survive even lower air temperatures if plants are covered with snow. As shown in Figure 3B, the 2016-17 winter (November-February) was colder than either the 2015-16 or 2017-18 winter, but the snowfall (45.8 inches) in the 2016-17 winter was much higher than those of the 2015-16 and 2017-18 winters, leading to higher winter survival and a more severe epidemic in 2017.

A high level of winter survival often leads to an early start of stripe rust in the following spring. Regrowth of stripe rust is similar to wheat regrowth from March to April, depending upon regions. On March 3, 2016, it was very easy to find stripe rust in experimental nurseries and commercial fields in

Table 1. Average stripe rust relative area under the disease progress curve (rAUDPC), test weight (Lb/Bu), yield (Bu/A) of fungicide-sprayed and non-sprayed plots of winter wheat varieties grown on the PCFS farm near Pullman, Washington under natural infection in 2018 and their fungicide application ratings

Variety	rAUDPC (%)			Test weight (Lb/Bu)			Yield (Bu/A)			Yield loss (%) ^b	Yield increase (%) ^b	Application rating ^c
	No spray	Spray ^a	Reduction	No spray	Spray ^a	Increase	No spray	Spray ^a	Difference			
Norwest 553	3.7	2.6	1.1	61.9	62.3	0.4	147.5	143.4	-4.1	-2.9	-2.8	0
Farnum	1.4	1.1	0.3	60.4	60.2	-0.2	116.7	116.2	-0.5	-0.4	-0.4	0
Cara	1.3	0.9	0.4	59.2	59.4	0.2	144.6	145.0	0.4	0.3	0.3	0
Bruehl	3.6	0.9	2.7	57.7	57.9	0.2	150.9	152.9	2.0	1.3	1.3	0
Skiles	4.2	2.7	1.5	60.8	61.5	0.7	146.0	148.3	2.3	1.6	1.6	0
Madsen	3.1	6.2	-3.1	60.6	60.4	-0.2	149.6	154.6	5.0	3.2	3.3	0
Legion	3.0	2.1	0.9	59.2	59.7	0.5	161.1	167.3	6.2	3.7	3.8	0
Jasper	2.3	1.1	1.2	58.8	59.6	0.8	157.3	164.9	7.6	4.6	4.8	0
Puma	7.4	1.7	5.7	58.8	59.2	0.4	150.1	158.0	7.9	5.0	5.3	0
Bobtail	2.8	1.9	0.9	57.1	57.4	0.3	160.7	169.3	8.6	5.1	5.4	0
SY Ovation	5.5	1.1	4.4	59.3	60.8	1.5	150.2	159.4	9.2	5.8	6.1	0
Otto	2.1	1.6	0.5	57.9	58.6	0.7	124.7	137.5	12.8	9.3	10.3	1
UI Sparrow	6.3	0.9	5.4	59.3	59.7	0.4	152.2	166.1	13.9	8.4	9.1	1
ORCF-102	7.3	6.6	0.7	58.4	60.0	1.6	108.4	123.0	14.6	11.9	13.5	1
Rosalyn	3.6	2.6	1.0	59.2	59.7	0.5	158.0	177.1	19.1	10.8	12.1	1
LCS Jet	2.8	2.1	0.7	61.3	62.2	0.9	144.6	165.7	21.1	12.7	14.6	1
Westbred 528	5.3	4.0	1.3	59.2	61.6	2.4	141.3	162.9	21.6	13.3	15.3	1
Whetstone	7.3	1.7	5.6	60.4	62.0	1.6	115.7	141.5	25.8	18.2	22.3	2
ARS-Crescent	8.2	2.8	5.4	58.4	59.2	0.8	124.3	152.2	27.9	18.3	22.4	2
Eltan	26.2	5.5	20.7	50.4	54.7	4.3	99.6	133.7	34.1	25.5	34.2	2
SY 107	15.5	3.8	11.7	55.9	59.5	3.6	107.1	143.1	36.0	25.2	33.6	2
Xerpha	34.0	6.6	27.4	52.6	58.0	5.4	92.0	129.0	37.0	28.7	40.2	2
Keldin	12.2	2.2	10.0	62.1	63.1	1.0	124.6	161.7	37.1	22.9	29.8	2
PS 279	100.0	6.8	93.2	43.4	54.3	10.9	29.1	98.7	69.6	70.5	239.2	4
Average ^d	11.5	2.9	8.6	57.8	59.5	1.7	130.8	149.0	18.2	13.3	23.0	
LSD (0.05)	3.3			1.8			16.2					

^a Quilt Xcel at 14.0 fl oz/A was sprayed twice, at early jointing stage (Feekes 5) on May 8 when the susceptible check PS 279 had 2-5% severity of stripe rust and at flag-leaf stage (Feekes 8) on May 23.

^b Yield loss is caused by stripe rust and increase is by fungicide application based on the comparison between no spray and sprayed plots.

^c Varieties rated 0 do not need fungicide application, those rated 1 may or may not need fungicide application, and those rated 2 or higher need fungicide application.

^d The average values are of the 23 commercially grown varieties, excluding the susceptible check (PS 279).

* The difference between the non-sprayed and fungicide-sprayed plots is significant at $P \leq 0.05$.

central and southeastern Washington. The high incidence of stripe rust was related to the warmer-than-normal winter as mentioned above.

The 2017 spring started later than the 2016 spring due to heavy snow in the winter. When we were checking fields on March 8, the northern and eastern parts of Washington were under snow. The colder-than-normal winter killed much of fall infection, but we were able to find survived rust in central Washington and spore-producing leaves in commercial fields in Walla Walla. On March 7, 2018, we were able to find stripe rust only in our nursery in Walla Walla, but observed no rust in any of the surveyed commercial fields.

The low level of rust in early March was related to the low infection in the 2017 fall and the low snowfall during the winter. Stripe rust started developing in commercial fields in early April in Benton County and early May in Lincoln County. In our experiment fields near Pullman, rust was first observed on May 7, but developed very fast, reaching 100 percent severity on susceptible varieties by May 30.

Stripe rust develops mostly from May to July, and the weather conditions during these months are directly related to damage. Precipitation is most critical for infection as rust spores require dew formation to germinate and penetrate into leaves. As shown in Figure 3C, July 2016 was more favorable for rust infection, while May of

Table 2. Average stripe rust relative area under the disease progress curve (rAUDPC), test weight (Lb/Bu), yield (Bu/A) of fungicide-sprayed and non-sprayed plots of spring wheat varieties grown on the PCFS farm near Pullman, Washington under natural infection in 2018 and their fungicide application ratings

Variety	rAUDPC (%)			Test weight (Lb/Bu)			Yield (Bu/A)			Yield loss (%)	Yield increase (%)	Application rating		
	No spray	Spray	Reduction	No spray	Spray	Increase	No spray	Spray	Difference					
WB6121	3.6	2.1	1.5		59.6	59.8	0.2		99.1	97.4	-1.7	-1.7	0	
JD	6.3	2.6	3.7		60.1	60.5	0.4		71.3	70.6	-0.7	-1.0	0	
WB9518	2.7	2.0	0.7		59.2	59.3	0.1		93.6	94.4	0.8	0.8	0	
Chet	15.5	2.6	12.9	*	61.2	61.6	0.4		87.8	90.0	2.2	2.4	2.5	0
Diva	9.6	3.0	6.6	*	58.6	58.4	-0.2		87.8	91.2	3.4	3.7	3.9	0
Expresso	23.7	2.1	21.6	*	58.8	59.1	0.3		87.0	90.5	3.5	3.9	4.0	0
Dayn	2.7	1.9	0.8		60.1	60.0	-0.1		109.5	113.9	4.4	3.9	4.0	0
Seahawk	2.1	1.9	0.2		59.9	59.7	-0.2		100.7	105.7	5.0	4.7	5.0	0
SY Selway	15.8	5.1	10.7	*	57.6	58.0	0.4		86.4	92.5	6.1	6.6	7.1	1
SY Steelhead	18.3	2.7	15.6	*	61.3	61.8	0.5		70.1	76.7	6.6	8.6	9.4	1
Melba	15.3	2.1	13.2	*	60.4	60.5	0.1		101.4	108.7	7.3	6.7	7.2	1
Buck Pronto	17.3	4.5	12.8	*	58.1	59.2	1.1		83.4	91.2	7.8	8.6	9.4	1
Glee	21.7	3.3	18.4	*	58.5	59.3	0.8		90.6	98.9	8.3	8.4	9.2	1
Alum	19.1	2.4	16.7	*	58.7	59.2	0.5		82.6	92.6	10.0	10.8	12.1	1
Tekoa	6.8	2.0	4.8	*	60.5	60.9	0.4		102.0	114.4	12.4	* 10.8	12.2	1
Solano	32.0	3.3	28.7	*	59.6	60.0	0.4		87.3	103.4	16.1	* 15.6	18.4	2
Louise	16.4	2.7	13.7	*	56.3	58.0	1.7	*	77.6	96.0	18.4	* 19.2	23.7	2
Whit	33.3	4.0	29.4	*	56.9	58.4	1.5	*	88.1	106.7	18.6	* 17.4	21.1	2
Kelse	52.4	3.6	48.8	*	57.2	59.4	2.2	*	71.8	95.5	23.7	* 24.8	33.0	2
SY605CL	62.8	2.1	60.7	*	59.5	61.1	1.6	*	61.3	88.4	27.1	* 30.7	44.2	3
WB-1035CL+	80.2	3.5	76.7	*	54.2	58.0	3.8	*	45.9	87.5	41.6	* 47.5	90.6	4
WB6341	75.3	4.0	71.3	*	56.6	59.8	3.2	*	66.1	108.3	42.2	* 39.0	63.8	3
Babe	66.9	1.9	65.0	*	56.3	59.6	3.3	*	56.2	103.1	46.9	* 45.5	83.5	4
AvS	100.0	3.1	96.9	*	56.4	60.0	3.6	*	30.8	91.6	60.8	* 66.4	197.4	5
Average	30.3	2.9	27.4	*	58.5	59.6	1.1		80.0	96.2	16.2	* 16.7	28.8	

^a Quilt Xcel at 14.0 fl oz/A was at jointing stage (Feekes 6) on June 8 when the susceptible check (AvS) had 2-5% severity of stripe rust.

^b Yield loss is caused by stripe rust and increase is by fungicide application based on the comparison between no spray and sprayed plots.

^c Varieties rated 0 do not need fungicide application, those rated 1 may or may not need fungicide application, and those rated 2 or higher need fungicide application.

^d The average values are of the 23 commercially grown varieties, excluding the susceptible check (AvS).

* The difference between the non-sprayed and fungicide-sprayed plots is significant at $P \leq 0.05$.

2017 and both May and June of 2018 were more favorable than normal.

Temperature is another important factor for rust development. In spring, higher-than-normal temperatures permit stripe rust to develop quickly. As shown in Figure 3D, the average monthly temperatures in May of 2016-2018 were higher than normal with the highest in 2018, which was related to the quick development of stripe rust. As stripe rust likes 45-75 degrees F, high temperatures in June and July can be a limiting factor. The higher-than-normal precipitation in May and June and the relatively low temperatures in June and July in 2018 compared to 2016 and 2017 allowed stripe rust to develop quickly on winter wheat and more severely on spring wheat than in 2016 and 2017.

Integrated stripe rust management

Stripe rust can be managed through cultural and chemical approaches. The cultural approach includes planting resistant varieties and avoiding early planting, excessive irrigation and fertilizer. Planting resistant varieties is the most effective method. As shown in Tables 1 and 2 and Figure 2, overall resistance in the commercially grown varieties reduced yield loss from more than 70 percent to less than 20 percent. Varieties rated 0 for fungicide application have high levels of resistance and do not need fungicides. Varieties rated 1 may or may not need fungicide application.

Varieties rated 2 or higher need fungicide application based on yield losses under a rust situation similar to that of 2018. For varieties not included in Tables 1 and 2, stripe rust ratings in the Washington State Crop Improvement Association Seed Buying Guide should be used. Select varieties rated 1 to 4 and avoid those rated 5 to 9.

Fungicide application is the second important approach for stripe rust management. In 2016-2018, use of fungicides reduced the potential yield losses for commercially grown varieties from 8 to 14 percent on winter wheat and from 7 to 20 percent on spring wheat to almost zero. Although propiconazole fungicides still control less sensitive rust strains when applied on time and at the full labelled rate, we have identified strains less sensitive to propiconazole fungicides. Therefore, it is a good idea to use fungicides with different modes of actions or rotate different fungicides.

In 2017, more than 222,000 pounds of fungicides (nass.usda.gov) were used to control stripe rust in Washington state covering more than 1.2 million acres of wheat. Similar amounts of fungicides were used in 2016 and 2018. In the future, reducing the multimillion dollar cost of chemicals will require farmers to more wisely use fungicides based on varietal resistance. ■

WHEAT WATCH

WASHINGTON GRAIN COMMISSION

U.S. exports down, but so are stocks



By T. Randall Fortenbery

The U.S. Department of Agriculture (USDA) finally lowered their 2018/19 marketing year wheat export projection to be more in line with actual export activity in the March 2019 World Agricultural Supply and Demand Estimates (WASDE).

Projections now call for total wheat exports through May 31, 2019 (the end of the current marketing year), to total 965 million bushels. This compares to a marketing year export projection of 1.025 billion bushels last fall, and 1 billion bushels as recently as February.

Despite the significant export reduction, however, I believe USDA is still overly optimistic in forecasting total wheat exports this marketing year. As noted in Figure 1, we only exported 901 million bushels of wheat from the U.S. last marketing year (64 million bushels less than the current forecast this year). Also, USDA overestimated final exports for the 2017/18 marketing year as late as March 2018. Through mid-March this year, we were still running about 4 percent behind last year's pace. Thus, I anticipate that USDA will have to lower their export projection again before the end of the marketing year. I project a final value closer to 900 million bushels.

Interestingly, the entire export deficit relative to last year comes from hard red winter wheat. Export pace for all other U.S. classes are running ahead of year ago levels (Figure 2).

Current total U.S. wheat exports to Asia and Oceania are up relative to a year ago, but they are lagging in Taiwan (down about 5.5 percent); China (down 94 percent); Indonesia (down 16 percent); and Korea (down almost

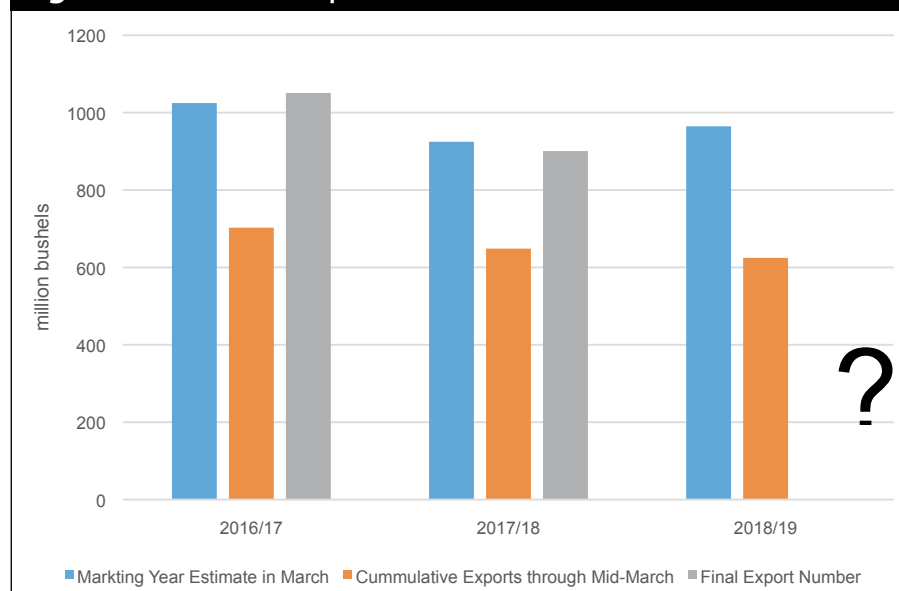
12 percent). U.S. wheat exports to Japan are up just slightly relative to last year.

Wheat exports from the U.S. to the EU are also up on a year-over-year basis, but exports are lagging to both the African continent and Central and South America. Exports to Mexico, our largest buyer last year, were running about 3 percent behind last year through mid-March 2019, but this is a significant improvement relative to the pace earlier in the marketing year. In November 2018, the U.S. was running about 37 percent behind the previous year's pace, and in January 2019, we were still behind about 15 percent compared to last year. Thus, while still running a deficit relative to a year ago, the wheat export pace to Mexico has picked up significantly.

Most analysts have argued for some time that USDA's wheat export forecast was too large, and when the downward revision was released in WASDE on March 8, 2019, markets did not really react because the export revision was not a surprise. However, several days after the WASDE release futures, prices for soft red winter wheat fell dramatically, losing almost \$1 per bushel between February 14 and March 11 (Figure 3).

Fortunately for Pacific Northwest soft white wheat producers, white wheat cash prices fell by only half the futures price decline, with basis (the difference between cash and futures prices) strengthening almost 50 cents per bushel into early March. This is at least partly due to the stronger balance sheet for white wheat compared to most other classes.

Figure 1: U.S. wheat exports



Based on the March 2019 WASDE, total wheat carryout for the U.S. (the amount of wheat that will be left on May 31, 2019) is expected to decrease this year compared to last by about 4 percent. The soft red wheat carryout is expected to decline even more, with a 26 percent year-over-year reduction. However, the white wheat carryout is expected to decline by almost 78 percent year-over-year, putting it in a much stronger supply/demand environment and helping insulate white wheat prices from matching any general decline in overall wheat prices. The large decline in white wheat carryout comes from several sources, including improved exports relative to last year as well as increased domestic use.

The international wheat picture changed little in the March WASDE. Projected world carryout was increased just more than 1 percent relative to the February estimate, but still remains 37 percent below the carryout from the 2017/18 marketing year. Total foreign wheat production for this year was actually reduced relative to the February estimate, but global consumption was also reduced, resulting in the slight increase in world carryout. Most of the reductions in production came from countries that are generally net importers of wheat, and this led to a slight increase in USDA's estimate of global wheat trade for the 2018/19 marketing year, even as U.S. exports were reduced.

Figure 2: Percent change in cumulative wheat exports through March: 2017/18 vs. 2018/19

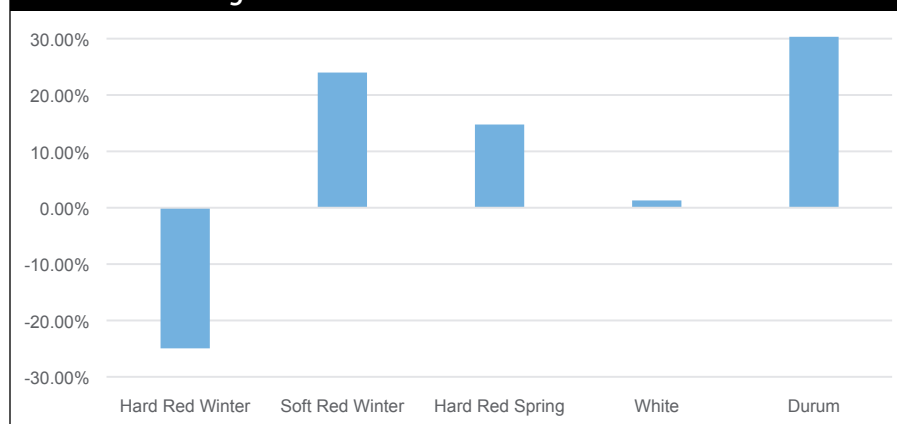
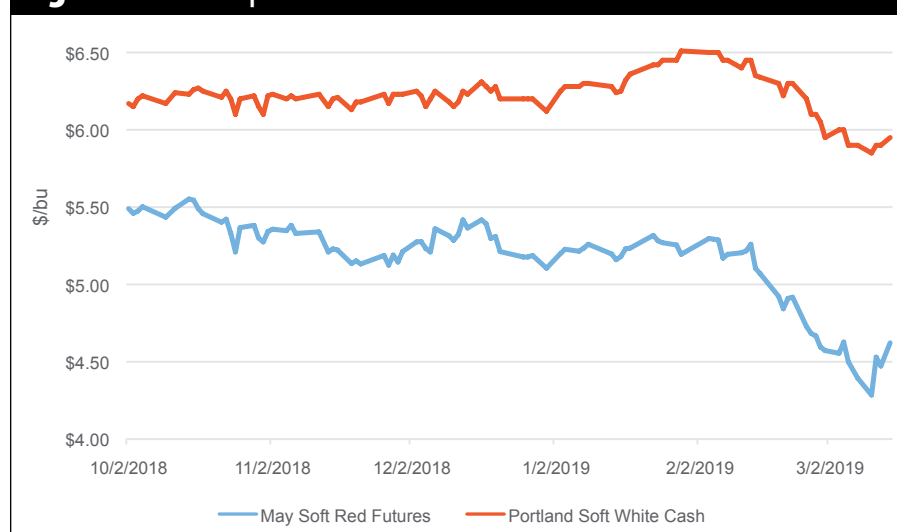


Figure 3: Wheat prices



Production expectations from major exporters other than the U.S. were either unchanged, or in the case of both Australia and Russia, increased slightly. Australia is now projected to harvest 19.5 million metric tons (mmt) of wheat this year, an increase of about 2 percent from earlier projections. This, in turn, is expected to increase the total volume of Australian wheat exports this year by about 1 percent over the previous forecast.

Russian wheat production expectations increased from 71.6 mmt to 71.69 million, an increase of only 1/10th of 1 percent. Russian export volume remained unchanged in the March WASDE.

Through March 19, wheat futures had recovered about 30 percent of the \$1 per bushel decline experienced between Feb. 14 and March 11. Given that the general balance sheets for wheat, both domestically and globally, have not really changed much since the first of the year, this suggests that the price collapse was overdone. Despite this, any real upside beyond prices that existed just before the collapse (about \$5.30 per bushels on the July soft red wheat futures contracts) will be challenging if USDA's current global production forecasts prove accurate.

One potential factor that could positively impact wheat markets and lead to higher prices would be prevented plantings of spring wheat given potential weather delays this year. Planting progress in April and early May could be key to any future upside in wheat prices. ■

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There's never a wrong time to set up a budget

QUICKBOOKS CAN HELP PRODUCERS TRACK SPENDING | BY CASSI JOHNSON

When the weather pushes us inside, that doesn't mean we want to spend our time behind the desk. However, the desk is a necessary evil of the business that requires our time and attention. Let's talk about getting behind the desk and making the most of it so that we set ourselves up for success in the coming year.

I see a budget as a road map. There are lots of roads to any single location and deciding which one to take varies for each person as an individual and as an operation. Our operations are all very unique depending on the product we raise, our geographical location, etc. Budgets are not

one-size-fits-all, and they

are not carved in stone. Trying to determine our budget for the year can seem overwhelming when we think about all the variables that we can't predict, such as the market or the weather. There are many factors that we can't control that can have a large impact on our farm or ranch.

Take a breath and start with last year's numbers. I will usually print last year's profit and loss report out of QuickBooks or export it into Excel so that I can review last year's information easier. Now adjust the things you know are going to change. For instance, you might know that you are planning to rebuild a portion of the corrals, reseed a field, sell some extra cows or put in a new pivot. Adjust what you know and be conservative. I also tend to build a little extra expense into the budget as a buffer for myself.

Once we have the projected numbers for the

year, let's figure out how to put them into QuickBooks. Start at the top menu bar, click on the "Company" tab. Then select Planning and Budgeting>Set Up Budgets. In the next window, you will select "Create New Budget." The preferences I choose through the next screen are profit and loss budget and no criteria. You can choose to start from scratch or from last year's actuals. If you choose to start from last year's actuals, QuickBooks will automatically put the actual expenses you recorded in the prior year in each monthly column for the category you recorded them in. Then you can adjust any numbers you want. If you choose to start from scratch, you'll see a blank input screen that you enter numbers into yourself.

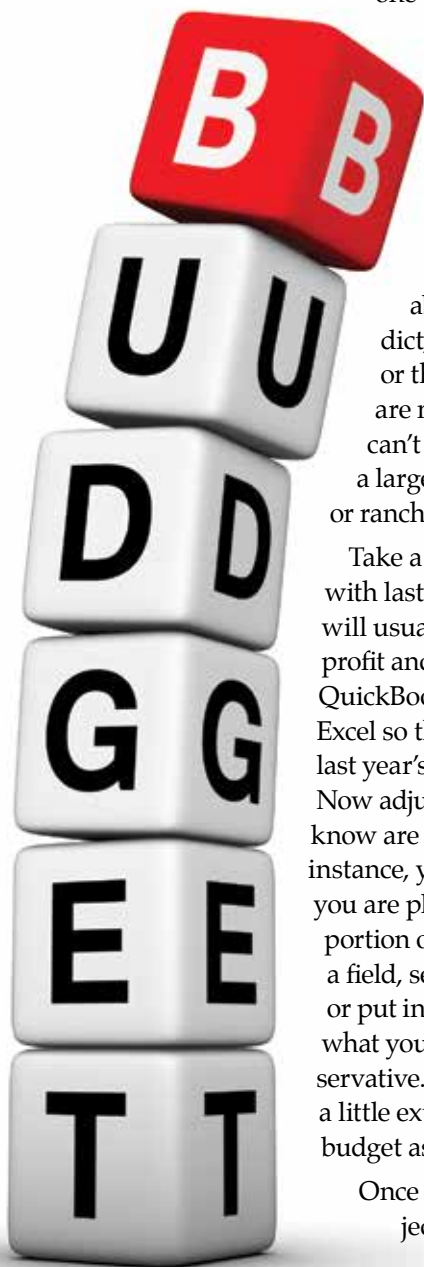
Now you need to decide if you want to do a budget on a monthly or annual basis. If you choose monthly, then you input your expenses for each category horizontally by month. If you choose annually, then put the total expense for the year in the January column.

It's okay that you might just now be getting to your budget. Go ahead and do all the steps we discussed above. Then put your budget for the remainder of the year. QuickBooks will allow you to put your budget in at any point during the year; it doesn't have to be done prior to Jan. 1.

Once you have your budget in QuickBooks and a plan for the year ahead, don't forget to go back and look at it from time to time and watch your progress throughout the year.

Here is my quick and dirty report I use the most to do a quick check: In the top menu, go to Reports>Budgets>Budget vs. Actual. Once you open that report, you'll want to make a few customizations to the report. In the upper left-hand corner, click on the "customize report" button. Where it says "display columns," click on the drop-down menu and select total if you inputted your information on an annual basis instead of a monthly basis. This is the one we are going to look at for this example. Make sure your dates are set for this fiscal year. My personal preference is that I unclick the "\$ Difference" box and leave the "% of Budget" column to get an idea of where I am in comparison to my original plan.

For instance, let's say it's March when I'm looking at this report. If any of my percentage figures are more than 25 percent, then I'm going to stop and look at the detail and figure out why. Maybe it's just a timing issue. Maybe expenses are over budget, but we knew they were and



have adjusted for it in other areas. Or maybe it's a sign that something is going wrong, like a project is costing more than anticipated or that we have some fuel theft going on. This is a great way to keep yourself engaged in your plan as you work through the year. Also remember that you can always go back into the input screen for your budget and change your figures at any time.

Budgets don't have to be scary or hard, and they should always be easier to monitor. QuickBooks can help you make budgeting and monitoring your budget a more efficient process. So, when the weather starts to deteriorate, get the cows fed, the farm equipment tuned and spend a little time at the desk in the afternoon. I'm excited for the year ahead of us. I hope you are too. ■



Cassi Johnson is a fourth generation rancher from Oregon. Besides helping run the family ranch, she is also a loan officer for the Pacific Intermountain

Mortgage Company in Baker City, Ore. Cassi provides private and group QuickBooks classes upon request and has presented break-out sessions on QuickBooks at previous Tri-State Grain Growers Conventions. She can be reached at cassi@pacificim.net.

"A story of agriculture will be told. It would be better if it were told by you."

— Jerry McReynolds,
past president of the National
Association of Wheat Growers

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Deciphering the alphabet soup of USDA agencies

If you are a landlord new to the world of agriculture, there are a slew of U.S. Department of Agriculture (USDA) agencies and acronyms that you should become familiar with. Here are some of the agencies most involved with agriculture:

AGRICULTURAL RESEARCH SERVICE (ARS). This agency researches solutions to national priority agricultural problems and provides information to the public with the goals of:

- Ensuring high-quality, safe food and other agricultural products;
- Assessing the nutritional needs of Americans;
- Sustaining a competitive agricultural economy;
- Enhancing the natural resource base and the environment;
- Providing economic opportunities for rural citizens, communities and society as a whole; and
- Providing the infrastructure necessary to create and maintain a diversified workplace.

ARS personnel often partner with universities, companies and other organizations and countries. At Washington State University (WSU), ARS researchers work side by side with the university's researchers and scientists on campus. Some of the work being done at WSU by ARS employees include control of rust disease; falling numbers research; club wheat breeding; and wheat quality genetics. ars.usda.gov

FARM SERVICE AGENCY (FSA). This agency is largely responsible for the management of the farm commodity programs, disaster assistance and conservation programs. It is also responsible for providing loans and credit to farmers who are unable to receive credit from private companies and to beginning, minority and women farmers and ranchers. The FSA uses county committees, made up of locally elected producers, to help decide what kind of programs counties will offer and to provide input back to FSA. The Washington state FSA office is located in Spokane and has 25 county offices. Brian Dansel is the Washington FSA state executive director. More information is at fsa.usda.gov/state-offices/Washington/index.

FEDERAL GRAIN INSPECTION SERVICE (FGIS). This department, part of the Agricultural Marketing Service, was created in 1976 to manage the national grain inspection system and to institute a national grain-weigh-

ing program. According to its website, FGIS provides farmers, handlers, processors, exporters and international buyers with sampling, inspection, process verification, weighing and stowage examination services that accurately and consistently describe the quality and quantity of the commodities being bought and sold. FGIS manages a network of federal, state and private entities that provide inspection and weighing services. In Washington state, the Washington State Department of Agriculture is a FGIS-delegated authority and does the sampling, weighing, quality testing, grade inspection and phytosanitary services for grains and commodities for FGIS. agr.wa.gov/inspection/GrainInspection/ or gipsa.usda.gov/fgis/fgis.aspx.

FOREIGN AGRICULTURAL SERVICE (FAS). This agency works to advance opportunities for U.S. agriculture and U.S. foreign policy around the globe. It has 93 offices that cover 171 countries. FAS focuses on trade policy; market development and export assistance; data and analysis; and food security. It also administers the United States' food aid program. fas.usda.gov

NATIONAL AGRICULTURAL STATISTICS SERVICE (NASS). This agency is responsible for the collection and dissemination of information covering nearly every aspect of U.S. agriculture. NASS gathers this information by surveying growers throughout the year through mail, online and in-person contacts. In addition, every five years, NASS conducts the Census of Agriculture. These statistics are used by various other USDA agencies in helping develop farm programs and payments. Washington state is served by the Northwest Regional Field Office located in Olympia and is headed by Chris Mertz, regional director. The data NASS collects is publicly available and can be found at nass.usda.gov.

NATURAL RESOURCES CONSERVATION SERVICE (NRCS). Looking for financial and/or technical help in making conservation improvements on your land? Then you are probably looking for NRCS, which works with farmers, ranchers and forest landowners to help them boost agricultural productivity and protect natural resources through voluntary conservation practices. Here in Washington state, NRCS is headquartered in Spokane; Roylene Rides at the Door is the state conservationist. Their website is nrcs.usda.gov.

RISK MANAGEMENT AGENCY (RMA). This agency is responsible for managing the U.S. crop insur-

ance system, which strengthens the economic stability of agricultural producers and rural communities. Approved Insurance Providers (AIP) sell and service federal crop insurance policies in every state and in Puerto Rico through a public-private partnership with RMA. RMA backs the AIPs who share the risks associated with catastrophic losses due to major weather events. The regional RMA office in Spokane serves not only Washington, but Alaska, Idaho and Oregon as well. Ben Thiel is the regional RMA director. rma.usda.gov

Here are some of the programs farmers (and landlords) deal with on a regular basis:

AGRICULTURAL RISK COVERAGE (ARC). ARC is one of two programs created by the 2014 Farm Bill that helps provide stability to farmers. ARC provides revenue loss coverage when either the actual county crop revenue of a covered commodity is less than the guarantee for the covered commodity (the county option) or revenue for all covered commodities planted on an individual farm falls a certain percentage below the farm benchmark revenue (the individual option). The ARC program is administered by FSA, and payment triggers are usually based on data from NASS and/or RMA.

CONSERVATION RESERVE PROGRAM (CRP). Under CRP contracts, farmers agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality in exchange for a yearly rental payment. Contracts are usually 10 to 15 years long. The long-term goal of the program is to improve water quality, prevent soil erosion and reduce loss of wildlife habitat. Under the CRP “umbrella” are different initiatives targeting specific conservation goals, such as pollinator habitat, wildlife enhancement and protecting highly erodible lands. FSA, which administers CRP, periodically holds general sign-ups in which producers submit bids that are ranked using NRCS data. Producers wishing to enroll in a specific initiative can enroll at any time as long as enrollment levels don’t exceed CRP’s statutory cap. That cap and the amount of money available for payments is set in the farm bill.

CONSERVATION STEWARDSHIP PROGRAM (CSP). Under a CSP plan, farmers are paid for enhancing existing conservation practices on their land that protect natural resources. This voluntary program is administered by NRCS, and farmers work with NRCS conserva-

tion planners to implement a five-year plan. CSP is widely considered a working lands program as the land involved is typically not removed from production. Examples of CSP management activities are:

- Grazing management to improve wildlife habitat;
- Extending filter strips to reduce excess sediment, nutrients and chemicals in surface water;
- Planting cover crops to reduce wind and water erosion; and
- Planting range grasses to improve soil health and wildlife habitat.

CONSERVATION RESERVE ENHANCEMENT PROGRAM (CREP). This program is part of CRP, but targets high-priority conservation concerns identified by a state. Federal funds are supplemented with nonfederal funds to address those concerns. In exchange for removing environmentally sensitive land from production and establishing permanent resource conserving plant species, farmers and ranchers are paid an annual rental rate, along with other federal and state incentives as applicable per each CREP agreement. Participation is voluntary, and the contract period is typically 10 to 15 years. In Washington state, the CREP program is coordinated through the Washington State Conservation Commission and is primarily concerned with streamside buffers to protect salmon habitat.

ENVIRONMENTAL QUALITY INCENTIVES PROGRAM (EQIP). This is another NRCS program that provides agricultural producers with financial resources and one-on-one help to plan and implement voluntary conservation practices to protect environmental quality. Farmers, ranchers and forest landowners who own or rent agricultural land are eligible. EQIP offers payments for more than 100 conservation practices, including buffer strips, cover crops, erosion control, grazing management, grassed waterways, manure management systems, nutrient management and stream exclusion.

PRICE LOSS COVERAGE (PLC). This is the other program created by the 2014 Farm Bill. Under the PLC program, payments are issued when the effective price of a covered commodity is less than the respective reference price for that commodity. Like ARC, PLC is administered by FSA. The PLC reference prices were specified in the 2014 Farm Bill. ■

HAVE AN IDEA FOR A FUTURE LANDLORD TOPIC? EMAIL IT TO EDITOR@WAWG.ORG

THE BOTTOM LINE

Tips for making better tech investment decisions

By Carl Sohn

Senior Business Advisor, Northwest Farm Credit Services

Disagreements about technology are a common cause of conflict in ag operations and can get in the way of smooth succession and strategic planning. New technologies can help your operation grow and evolve to meet a rapidly changing consumer and competitive landscape. They also tend to be expensive and risky—and require significant changes to the “way we do things around here.”

Here are our top five tips for making better (and easier) technology investment decisions:

- **First, define your business goals.** Without agreement among decision-makers about near- and long-term goals for the operation, it's difficult to assure the time, dollars and risk you're planning to invest in new technology will help you achieve your shared vision.
- **Don't forget nontechnology solutions.** Sometimes the best answer is innovating or changing the way you do business, not in the tools or equipment you use. Always include nontechnology solutions in the options you consider.
- **“Because that's the way we've always done it” isn't always right.** And neither is “because if we don't use new technology, we'll be left behind.” Change-for-the-sake-of-change and no-change are equally losing strategies. There should be an easily understood business reason for not making a technology investment (just like there should be for making one).
- **Don't confuse “cutting edge” with “bleeding edge.”** Brand-new technologies may hold great promise, and there are incentives to “getting in early,” but be wary of technologies that are unproven in your industry. Early stage technologies are riskier, which does not mean they're bad, just that all the kinks haven't been worked out. If you can, let others lead the way and make your investment when their results show the technology is mature enough to help you achieve your goals.

- **Budget for your learning curve.** Many technologies are designed to increase efficiency, but make sure you plan for the time (and dollars!) it will take to learn how to use a new technology. Factor in making a few mistakes along the way.

Technology is changing the way we do business, and with the rapid pace of innovation in agriculture, having a technology strategy (even if it is to make no new technology investments) is more important than ever.

Technology investment decision process

Developing a comprehensive technology strategy may not be practical for your operation, but taking a thoughtful approach to technology investment decisions is critical to staying competitive in today's rapidly changing environment. An effective process should enable you to objectively evaluate options and select solutions that will best achieve your goals. Below are several basic steps you can take.

- **Define the problem or opportunity:** Before you consider potential solutions, clearly define the problem you want to solve or the opportunity you want to pursue. Include specifics about the business impact (i.e. efficiency, cost, changing market, etc.).
- **Define success:** Don't start talking about solutions until you've defined desired outcomes. With the problem defined (see #1), define the specific results or outcomes you want to see. These may be financial, operational or people-based. The more specific and objective, the better.
- **List the options:** Brainstorm potential solutions or options. During this step, keep an open mind and don't shoot down any ideas. The goal is to get all the ideas written down before you start evaluating them. It is easy to make the mistake of debating or evaluating options at this stage—don't.
- **Define the constraints:** There may be specific constraints you need to consider before reviewing options. These could include dollars, time, etc.

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- **Review the options:** For each option or potential solution, identify the anticipated outcomes or results from pursuing the specific option (make sure to consider the five tips above and your success criteria). At this stage, you can eliminate the options that are not realistic or viable, but you should not compare options (yet).
- **Shorten the list and make a decision:** Now you can compare specific options you looked at. Which option best achieves your success criteria? If several options seem viable, you may need to do more research. If you need to do more work, assign accountability for follow-up and agree on a time to discuss findings so you can move to the next step.
- **Next steps and accountability:** Once you've selected the best option, determine specific next steps and a timeline for completion of each step. Make sure to identify who is responsible for each step in the process.

While this process may seem formal, simply agreeing on the process you'll use to make the decision can help everyone get on board with the conclusion (even if individuals disagree with the outcome). For businesses of every size, an intentional approach to technology decisions can help assure you select the best possible solution to achieve your

goals. Given limited resources and the cost (in time and dollars) of technology investments, it is worth taking the extra time and energy for an intentional process. ■

Carl Sohn is the vice president of learning and development for Northwest FCS (northwestfcs.com), where he helps customers and employees learn and grow. Carl is a third generation owner in his family's Oregon-based timber and ranching operations. To contact Carl, call (509) 340-5543 or email him at carl.sohn@northwestfcs.com.

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“Nebraska is a special place with special people. Many of our friends and neighbors across the state are suffering. Our thoughts and prayers are with those who have lost or are missing loved ones, and to all those who have been impacted by the recent blizzard and massive flooding events.”

—Steve Nelson, Nebraska Farm Bureau president. Nelson estimates that ag losses due to the flooding could reach \$1 billion. The Nebraska Farm Bureau has set up a disaster relief fund to provide emergency aid to farmers and ranchers at nefb.org/get-involved/disaster-assistance

“It’s shocking to me to see the direction Europe is heading when it comes to the use of science and technology in agriculture. We can no longer let the EU get away with circulating a false narrative that EU agriculture is superior to the rest of the world.”

—Gregg Doud, U.S. Trade Representative’s chief agriculture negotiator, at the National Grain and Feed Association’s annual convention last month. Farm production in the European Union is subsidized and measures, including controls on approvals of genetically modified products, help keep some American goods from going in. (ajot.com)



“The president is looking for items that might not impact things too badly, but I think he missed the target on this.”

—Ben Scholz, president of the National Association of Wheat Growers, on the president’s proposed budget. (capitalpress.com)

“This proposal tells us one of two things: either the White House doesn’t understand why these programs are important, or they don’t care. What’s more, all of these shortsighted cuts are second and third attempts to revisit policy proposals that were rejected in the farm bill negotiations.”

—Rep. Collin Peterson (D-Minn.), House Agriculture chairman, on the president’s proposed budget. (cnbc.com)

“For three years now, President Trump has been calling for cuts to important programs within USDA. Yet for the third straight year, a majority of



American farmers and ranchers are expected to lose money farming. Major relief is needed to weather these tough times in agriculture. It’s time the president’s policy proposals and rhetoric acknowledge the financial pain in farm country.”

—Roger Johnson, president of the National Farmers Union, on the president’s proposed 10-year budget plan that cuts \$26 billion to crop insurance, as well as reducing spending on mandatory programs at USDA by \$61 billion by 2029.

“The world’s population is projected at 9.7 billion people in just 31 years. That means we have to double production of food, feed and fiber and do so while we protect our planet. We need all the tools in the toolbox to meet the challenge of feeding everyone into the future.”

—Ag Secretary Sonny Perdue speaking about the importance of biotechnology in agriculture at the U.S. Department of Agriculture’s 2019 Agricultural Forum in late February.



These dollars will be used to support candidates that understand what is critical to our industry and the livelihood of our members

Political advocacy is something many of us think we can never get involved in; the Washington Wheat PAC is out to change that.

The Washington Wheat PAC is a nonpartisan political action committee that is dedicated to supporting ag-friendly candidates.

The Washington Wheat PAC pledges to promote and support elected officials from all parts of the state that positively influence agriculture.

Why Support the Washington Wheat PAC?

Washington farmers are losing ground politically! The ability to protect our interests is slowly dwindling. Washington wheat producers need elected officials who know and understand the industry. Without these relationships our ability to remain competitive is at risk. During the legislative session, thousands of bills are introduced; many not favorable to farming. Now is the time for the industry to join together and proactively influence legislation that directly impacts the Washington wheat producer.

Please join our efforts by financially supporting the Washington Wheat PAC. Your contribution will strengthen the network of elected officials who understand the wheat industry's goals and objectives by fighting for what is critical to the livelihood of our members.

Protect your interests by supporting farm-friendly candidates who can make a difference in Olympia.

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When you make a donation to the Washington Wheat PAC, you are investing in the future of agriculture in Washington State.

Your wheat life...



Rhett Dormaier (7 months old) is learning the ways of harvest on the farm from his grandfather, Mike Dormaier, in Waukon. Photo by Marrisa Dormaier.



Bridgette Scharff (2) on her family's wheat, hay and cattle farm near Davenport. Her parents are Fred and Julie Scharff. Photo by Fred Scharff.

Harvesting steep hills on the Schluneger place south of Colfax makes for great pictures. Photo by Cathy Morgan.



Let's see your wheat life! Email pictures to editor@wawg.org. Include location, names of all people appearing in the picture and ages of all children.



Trying the binder out on SLR Farms Inc. in Rosalia last summer. Photo by Laurie Roecks.



KJ (4) and Keegan (2) Schafer at K Schafer Farms in Marlin. Photo by Krystel Schafer.



Harvest 2018 was 7-month-old Tatum Schroeder's first harvest. Her parents are Allison and Matt Schroeder of Wilbur. Photo by Allison Schroeder.

HAPPENINGS

All dates and times are subject to change.
Please verify event before heading out.

APRIL 2019

5-6 "HOPE AND HARD WORK: THE STORY OF OUR FARMS AND FOOD."

Come see this new exhibit that will be a permanent part of the new Community Heritage Barn at the Quincy Valley Historical Society and Museum. Quincy, Wash., 1:30-4 p.m. Free admission. qohsm.org

6-7 SPRING FARMING DAYS. Horse, mule and antique tractor farming on 13 acres. Activities starts at 9 a.m. both days. Limited camping available. Eastern Washington Agricultural Museum will be open. Garfield County Fairgrounds east of Pomeroy, Wash.

11-14 WASHINGTON STATE SPRING FAIR. Baby animal exhibits, food, entertainment, demolition derby and monster truck show. Washington State Fairgrounds in Puyallup, Wash. thefair.com/spring-fair

12-13 "HOPE AND HARD WORK: THE STORY OF OUR FARMS AND FOOD."

Come see this new exhibit that will be a permanent part of the new Community Heritage Barn at the Quincy Valley Historical Society and Museum. Quincy, Wash., 1:30-4 p.m. Free admission. qohsm.org

13 LEAVENWORTH ALE-FEST. Brews, food and music. leavenworthalefest.com

17 AIR QUALITY WORKSHOP. This Franklin Conservation District workshop will focus on innovations in dryland farming. It will include a WEEDit demonstration, information on a hoe drill modified for no-till, a farm bill update and more! Contact Heather Wendt (509) 430-3693. Kahlotus Grange Hall in Kahlotus, Wash., from 1 p.m. to 4 p.m.

18 AIR QUALITY WORKSHOP. This Benton Conservation District workshop will focus on innovations in dryland farming. It will include a WEEDit demonstration, information on a hoe drill modified for no-till, a farm bill update and more! Lunch will be provided to the first 30 who preregister. Contact Melissa Pierce at (509) 736-6000 or by email at Melissa-pierce@conserveva.net. Horse

Heaven Hills Community Center in Prosser, Wash., from 9 a.m. to noon.

19-20 "HOPE AND HARD WORK: THE STORY OF OUR FARMS AND FOOD."

Come see this new exhibit that will be a permanent part of the new Community Heritage Barn at the Quincy Valley Historical Society and Museum. Quincy, Wash., 1:30-4 p.m. Free admission. qohsm.org

20 EASTER EGG HUNT. Kids should bring their own baskets and enjoy an Easter egg hunt dash from 11 a.m. to 1 p.m. at Holzer Park in Uniontown, Wash. uniontownwa.org/events/

20-21 PALOUSE EMPIRE PLOWING BEE. Teams of draft horses take part in plowing events. Fairgrounds in Colfax, Wash. facebook.com/pethreshingbee/

25-MAY 5 WASHINGTON STATE APPLE BLOSSOM FESTIVAL. Parade, carnival, golf tournament, apple pie and dessert bake-off, live entertainment, auction. Wenatchee, Wash. appleblossom.org

26-28 STOCKSHOW. Come support 4-H and FFA participants at the fairgrounds. Pop inside the community building for ice cream and pie and to look at all the creations and flowers submitted. Saturday parade, Sunday horse show. St. John, Wash. stjohnwa.com

30-MAY 4. Junior Livestock Show of Spokane. Spokane County Fair and Expo Center. juniorshow.org

MAY 2019

4 LIONS CLUB RIB FEED. All-you-can-eat rib feed annual fundraiser. 5-9 p.m. at the fairgrounds. Waitsburg, Wash. cityofwaitsburg.com/events-calendar

4-5 RENAISSANCE FAIR. Music, entertainment, food, arts and crafts and maypole dances. East City Park, Moscow, Idaho. moscowrenfair.org

5 BLOOMSDAY. Spokane, Wash. bloomsdayrun.org

11-12 2019 OLD TIME MULE & HORSE PLOWING. Teams of mules and horses take part in plowing events. Lunch available. About 2.5 miles east of Davenport, Wash., at 42591 Four Corners Rd. E, Davenport. Contact Jon Overmyer at (509) 721-1110 for more information.

10-12 WINTHROP '49ER DAYS. Parade, rendezvous party, Sat. dinner, Sunday cowboy breakfast. Winthrop, Wash. winthropwashington.com/event/49er-days

11-12 MAIFEST. Flowers, music, entertainment. Leavenworth, Wash. leavenworth.org

14 WAWG BOARD MEETING. Meeting starts at 10 a.m. at Washington Wheat Foundation Building, Ritzville, Wash. (509) 659-0610, wawg.org

17-19 WAITSBURG CELEBRATION DAYS. Parade, car show. Waitsburg, Wash. cityofwaitsburg.com/events-calendar

17-19 SELAH COMMUNITY DAYS. Carnival, poker run, potato feed, arts and crafts. Selah, Wash. selahdays.com

24-26 TOUCHET RIVER ROUNDUP. Woody's world famous pig roast, Chili feed, camping, dancing, kids games. Registration required. Fairgrounds in Waitsburg, Wash. snafubar.com/pigroast/

27 WAITSBURG MEMORIAL DAY CELEBRATION. Local veterans give a presentation at the City Cemetery honoring all veterans. Waitsburg, Wash. cityofwaitsburg.com/events.html

24-27 MOSES LAKE SPRING FESTIVAL. Three on three basketball tournament, 5k and 10k run, car show, parade, carnival, beer garden. Moses Lake, Wash. moseslakespringfestival.com

25-26 METHOW VALLEY RODEO. Saddle bronc, bareback, bulls, barrel racing, team roping and junior events. Held at the rodeo grounds, about halfway between Twisp and Winthrop. methowvalleyrodeo.com

25-27 LAST STAND RODEO. Cowboy breakfast, 5k run, rodeos. Coulee City, Wash. laststandrodeo.com ■

Submissions

Listings must be received by the 10th of each month for the next month's *Wheat Life*. Email listings to editor@wawg.org. Include date, time and location of event, plus contact info and a short description.

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