

People & Places

Giving grain farmers the best tools

By BRAD CARLSON
Capital Press

University of Idaho cereals researcher Juliet Marshall studies the environment as much as wheat and barley varieties.

“The varieties that were adapted 30 years ago aren’t necessarily adapted now,” the Idaho Falls-based plant pathologist said. “The environment is not static and the diseases that are circulating are not static. We have new strains of fungal pathogens that change and viral pathogen strains that change.”

Warmer weather, for example, benefits corn. As farmers grow more of that high-water crop, fungi that cause disease in wheat and barley will proliferate.

“Fusarium head blight is one of the bigger ones that is a problem as a result of higher corn production,” Marshall said. Barley yellow dwarf is another. The aphid-vectored virus can build up on corn and move to fall-planted wheat and barley.

She is among the researchers collaborating to develop better ways to control fusarium head blight, which produces a fungus-derived toxin that accumulates on grain. The project with the U.S. Wheat and Barley Scab Initiative has received federal funding.

Marshall said researchers are screening wheat and barley varieties for resistance, and are working to identify the best fungicides to apply as well as the best timing of application.



University of Idaho

University of Idaho plant pathologist and cereals researcher Juliet Marshall is focused on wheat and barley yield, quality and disease resistance.

She said a recently tested fungicide can be applied over a longer period and still reduce the disease and toxin, “so it improves our ability to control the disease. A lot of previous fungicides had a very, very narrow window.”

While rain often gets strong consideration in Midwestern studies of fusarium head blight, Idaho work by Marshall and her colleagues focuses much more on humidity and temperature — particularly evening temperatures that are favorable for the fungus to infect plants.

Unusually warm summer nights factored into the disease appearing in this year’s Idaho barley crop farther

north and at higher elevations than usual, she said.

“The more warm nights that we have at flowering, the higher the chances of infection,” Marshall said.

She is also working with UI colleagues to identify the pathogen faster using molecular techniques. That could help reduce spread by optimizing fungicide application amounts and timing, she said.

As for barley yellow dwarf, “the difficulty in reducing virus transmission from aphids is complicated when our dryland producers have to plant when moisture is available,” Marshall said. Rains came in early this August, as corn continued to

grow, “and the aphids prefer the newly planted wheat and barley seedlings over aging corn — increasing the likelihood of transferring the virus.”

Many new cereal varieties are being introduced. Field trials seek to identify disease resistance and yield characteristics suited to a production location while “keeping the quality that the end users really want from those varieties,” she said. Baking, milling or brewing standards must be met, for example.

“It’s key for our producers to know that there are new varieties out there that will be more economically beneficial and sustainable to



Western Innovator

JULIET MARSHALL

Occupation: University of Idaho plant pathologist, professor, head of Plant Sciences Department. Based at UI Idaho Falls Research and Extension Center.

Education: B.S., M.S., University of Delaware, Newark; Ph.D., University of Illinois, Urbana-Champaign.

Age: 57

Home: Idaho Falls

Family: Husband Bill Clark, a commercial wheat and barley breeder. Two adult children.

Hobbies: Gardening, travel, camping.

them,” Marshall said. Variety trials also benefit seed companies by comparing a new release to an industry standard.

Idaho’s wheat and barley commissions, farmers, crop consultants, breeders and other researchers all support her work.

“I have a lot of collaborators,” Marshall said. “The first people who benefit are the stakeholders — cereal producers in the area.”

Ryegrass overcomes ‘regulatory hell’ to become whiskey

By MATEUSZ PERKOWSKI
Capital Press

CORVALLIS, Ore. — While studying how to convert straw into fuel, Chris Beatty got the chance to learn a lot about the ryegrass plant.

Although the interest in such biofuels evaporated with the advent of fracking and the availability of cheap natural gas, Beatty decided he could still put that knowledge to use in his next venture — Spiritopia, an artisan distilled spirits producer.

When ryegrass is preparing to grow seed heads, it’s “driving sugars up the plant” that can be directly fermented into alcohol, he said. “I thought, wow, this would make a really interesting component for a whiskey.”

Getting his ryegrass whiskey into the hands of consumers would prove anything but simple, however, as Spiritopia first had to navigate a “regulatory hell or purgatory.”

The Alcohol and Tobacco Tax and Trade Bureau, a federal agency that regulates labels, was unsure whether ryegrass was fit for human consumption and referred the question to the U.S. Food



Mateusz Perkowski/Capital Press

Chris Beatty, founder of the Spiritopia distilled spirits company, holds a bottle of ryegrass whiskey.

and Drug Administration.

“I thought there were going to be issues but I did not see that one coming,” Beatty said.

The FDA, in turn, informed Beatty that he’d

have to complete a toxicological study to prove that distilled ryegrass spirits are safe.

“It takes a lot of time and money, of which I had neither,” he said.

Beatty was leaning toward shelving the idea until a magazine devoted to artisan spirits caught wind of his dilemma and published an article about it. That compelled a fellow chemist to notify Spiritopia that FDA had already approved an anti-allergy medication made with ryegrass.

“With that information, I was able to get ryegrass approved as an ingredient,” Beatty said. “So, it was rather dumb luck.”

After further negotiations with the federal government over the label, Spiritopia finally released its ryegrass whiskey in time for Christmas in 2018 — about three years after initially applying for permission.

Beatty said he must regularly explain that ryegrass whiskey is different from rye whiskey, which is made from fermented rye grain. Rye tends to add spicy and peppery flavors to alcohol, while ryegrass makes it softer and earthier.

However, his company does eventually want to experiment with making whiskey from ryegrass seeds instead of from the grass. That way, the product could be produced at any time

during the year instead of immediately after the grass is cut in late April or early May at about 12-18 inches.

Spiritopia generally produces about 500 bottles a year of ryegrass whiskey, which are sold for \$40 each at its distillery tasting room in Corvallis, Ore. Each annual batch requires less than an acre of ryegrass, for which a local farmer receives “liquid compensation.”

The bulk of the “mash” that’s fermented and distilled into ryegrass whiskey is corn and barley, while ryegrass makes up about 25% of the biomass, Beatty said. The ryegrass represents only a few percentage points of the finished alcohol, since the other ingredients have more fermentable sugars.

“It’s more about the flavor it imparts to the whiskey than the alcohol contribution,” he said.

Aside from ryegrass whiskey, Spiritopia uses locally sourced apples, grapes, peppermint and other crops in its products, and is planning to release a pear brandy as well.

“We tend to do less sugar and a more intense flavor of whatever it is,” he said.

CALENDAR

WEDNESDAY-FRIDAY SEPT. 15-17

68th National Reg Angus Convention: Riverside Hotel, Boise. Presentations and workshops will focus on innovation and elevating the breed. Website: <http://redangus.org>

THURSDAY SEPT. 16

OSU Extension’s Seed and Cereal Crop Production meeting (online): 8:30 a.m. Agenda: an update on the new USDA Agricultural Research Service entomology program from Seth Dorman, an entomologist recently appointed to the ARS Forage Seed and Cereal Research Unit in Corvallis; a presentation on the efficacy of common zinc phosphide baits for vole control from USDA biologist Aaron Shiels, who has been researching bait efficacy for the Oregon seed industry this year; and a report from Steve Salisbury of the Oregon Seed Council on the potential for using rodenticide bait stations. The session is free but you must register to get the credit. Registration: <https://beav.es/39W>

TUESDAY, SEPT. 21

18th Annual Oregon Farm Bureau Classic Golf Tournament: 8 a.m. OGA Golf Course 2850 Hazel-

nut Drive, Woodburn, Ore. Join Farm Bureau members and supporters of Oregon agriculture for a fun day of scramble-format golf. Help raise funds for OFB’s Political Action Committee, which supports candidates and ballot initiatives that are good for Oregon’s ag community. Contact: tiffany@oregonfb.org

WEDNESDAY SEPT. 22

Love the Land Benefit Concert (virtual): Local farmers are at the heart of our food system. And yet, the barriers that they face are staggering, especially for marginalized growers. From finding and affording land to keeping it productive and resilient in the face of climate change, local farmers need our support now more than ever. That’s why Washington Farmland Trust and Viva Farms are teaming up for the second year in a row on a virtual benefit concert to support a resilient, equitable future for farming. Join us for an evening of inspiration, music, and community as we aim to raise \$330,000 for local farms. Featured artists include The Decemberists, True Loves, Black Belt Eagle Scout, Whitney Mongé, and Sera Cahoone. Cost: \$10 Website: <https://wafarmlandtrust.org/event/>

love-the-land/

TUESDAY SEPT. 28

Public Lands Council 53rd Annual Meeting (online): On behalf of the Public Lands Council Board of Directors and Executive Committee, we invite you to attend the 2021 Public Lands Council Virtual Annual Meeting on Tuesday, Sept. 28. While we originally planned to see you in Seaside, Ore., due to increased COVID-19 cases, we have made the difficult decision to move the annual meeting to a virtual format. Website: <https://bit.ly/3sR4NH0>

OSU Extension’s Seed and Cereal Crop Production meeting (online): 8:30 a.m. Agenda: a look at Oregon Wheat Commission activities from Amanda Hoey, chief executive officer for the Oregon Wheat Commission and the Oregon Wheat Growers League; winter and spring wheat variety recommendations from OSU Extension cereal scientist and assistant professor Ryan Graebner; and a report on best practices for strong yields and pest management in wheat from OSU field crops agent Nicole Anderson. The session is free but you must register to get the credit. Registration: <https://beav.es/39h>

Submit upcoming ag-related events on www.capitalpress.com or by email to newsroom@capitalpress.com.

THROUGH SEPT. 11

Eastern Idaho State Fair: Eastern Idaho Fairgrounds, 97 Park St., Blackfoot, Idaho. Website: <https://funatthefair.com/>

THROUGH SEPT. 26

Washington State Fair: Washington State Fair Events Center, 110 9th Ave. SW, Puyallup, Wash. Open Labor Day weekend. Closed Tuesdays and Sept. 8. Website: <https://www.thefair.com/>

WEDNESDAY SEPT. 15

Small Farm School (outdoors): Clackamas Community College, Oregon City. Cost: \$75 after Sept. 8. No registration at the door. Due to space limitations, Small Farm School reserves the right to close registration on Sept. 1 or when 150 registrations have been received. Contact: 503-678-1264 Website: <https://blogs.oregonstate.edu/smallfarm-school/>

OSU Extension’s Seed and Cereal Crop Production meeting (online): 8:30 a.m. Agenda: agronomic updates for grass seed from OSU south valley field crops Extension agent Christy Tanner; updates on slug control strategies from OSU Extension slug expert Rory McDonnell; and new technologies for weed control in grass seed from OSU assistant professor Caio Brunharo. One Oregon Department of Agriculture credit offered for each session. The session is free but you must register to get the credit. Register: <https://beav.es/39d>

WEDNESDAY-THURSDAY SEPT. 15-16

Oregon Produce Summit: Hyatt Regency Hotel, Monterey, Calif. The summit will feature ideas, information and insights of the organic fresh produce industry, as well as educational sessions. Website: www.organicproducesummit.com



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Index

Markets 10
Opinion 6

CLARIFICATION

A recent story on the inclusion of Kentucky bluegrass in the Coronavirus Food Assistance Program needs to be clarified.

All types of grass seed are now included in CFAP 2, said Josh Hanning, acting Oregon state director for the Farm Service Agency.

For a complete list of commodities covered under CFAP 2, go to farmers.gov/cfap2/commodities.

Correction policy

Accuracy is important to Capital Press staff and to our readers.

If you see a misstatement, omission or factual error in a headline, story or photo caption, please call the Capital Press news department at 503-364-4431, or send email to newsroom@capitalpress.com.

We want to publish corrections to set the record straight.