

People & Places

# Digging into soil compaction

By MATTHEW WEAVER  
Capital Press

PULLMAN, Wash. — Farmers and researchers have known soil compaction is a problem ever since the invention of tractors, Haly Neely said.

But they didn't have the technology they needed to tackle it. Until now.

Neely is assistant professor of spatial soil and water management at Washington State University. She recently received a grant from the Foundation for Food and Agriculture Research to study soil compaction.

Soil is a mixture of mineral particles, organic matter, water and air. When soil becomes compacted because it's too wet or due to the use of heavy machinery or the loss of organic matter, those particles move closer together. The soil can't hold as much water, and plants can't access nutrients and beneficial microbes.

Land-grant universities estimate a yield reduction of at least 20% due to compacted soil. Severity increases in drier weather.

**A new tool**

Neely's research will use a hydraulically driven penetrometer modified by the Soil Health Institute and University of Nebraska-Lincoln.

Previously, most measurement tools were driven into the ground by hand, Neely said, but the results weren't reliable. A pressure gauge was located at the top of the tool. Two individuals might push using different levels of force. The moisture content and texture of the soil affect the measurement.

Given these factors, researchers couldn't use the most basic bulk density measurement to determine compaction, Neely said.

On the new tool, the device that takes pressure readings is at the bottom of the tool, avoiding some of the other issues that made measurements "squirrely," Neely said.

It uses a near-infrared spectrometer, running a fiber-optic cable through the hollow instrument to shine light through a small window. The light bounces off the soil and is reflected, sending a signal back to researchers.

"Now you have force, water and clay content, and now you can model what the bulk density is," Neely said. "You've not pulled a single soil core, you have to take nothing back to the lab and you can do this quickly, so you can get them across the whole field."

She is looking for farmers interested in working with her on the project.

"Instead of just saying, 'Compaction's a problem,' they need to know what to do about it," Neely said. "At least the farmer can make an informed decision. Right now, we're just kind of guessing, based on our experience. Which is not bad, often it's going to turn out to be true. But (we're) getting some numbers around that so they can really make the best possible decision for their operation."

**Problem-solver**

"I'm pretty sure that most people that work with Haly figure out her tenacity pretty quickly," said Cristine Morgan, chief scientific officer at the Soil Health Institute in Morrisville, N.C.

Morgan called Neely one of the more effective problem-solvers in soil science research today. She was Neely's Ph.D. adviser and later a colleague at Texas A&M University.



Matthew Weaver/Capital Press

**Washington State University assistant professor Haly Neely uses her new hydraulically driven soil penetrometer to better measure soil compaction in farmers' fields.**

"Any opportunity I get to work with her, I do," Morgan said. "She's highly clever, very technically capable and never really took 'No, this doesn't work,' for an answer. She could always put in the time and the thinking to make things work. Many times, she made things work that nobody else could."

Neely moved to WSU from Texas A&M in August 2019.

She was raised in Waitsburg, working for the Northwest Grain Growers as a grain-scale operator during her summers as a college student.

**Understanding soil**

She took a soil science class and fell in love with the subject.

"It's such a complex system, it's right beneath your feet, it's something most people don't think about,"



**Western Innovator**

**HALY NEELY**

**Occupation:** Assistant professor, spatial soil and water management, Washington State University.

**Age:** 35

**Hometown:** Waitsburg, Wash.

**Current location:** Pullman, Wash.

**Education:** Bachelor's degree at Washington State University in agricultural journalism. "It was my dream at the time to work for Capital Press." Master's degree in soil fertility, also WSU. Ph.D. in soil physics, Texas A&M University

**Family:** Married to Clark Neely, variety testing lead at WSU

**Contact:** (509) 335-0947, h.neely@wsu.edu

**Twitter:** <https://twitter.com/HalyinPullman>

she said. "But it is vital. The more I learned about it, the more I was interested in it." She was drawn to soil compaction for the same reason. It's not as readily visible as changes to organic matter, she said.

"It's something that's easily ignored, but it's a big problem," she said. "It's a hard problem, but I feel like it's a solvable problem with the tools and technologies we have now."

# Gracie Krahn crowned Oregon Dairy Princess Ambassador

By GEORGE PLAVEN  
Capital Press

SALEM — Like mother, like daughter.

Gracie Krahn, 19, was crowned the 2021-22 Oregon Dairy Princess Ambassador on May 31. She follows in the footsteps of her mother, Amy Krahn, who was crowned in 1996.

Oregon Dairy Women, a nonprofit volunteer organization, started the Dairy Princess Ambassador program in 1959 to advocate for Oregon's dairy industry. The Dairy Princess Ambassador travels around the state giving presentations at schools, fairs and other community events, highlighting dairy products, farming and nutritional benefits.

It is the first time in the 62-year history of the program a mother-daughter duo have served in the position, said Jessica Jansen, president of the Oregon Dairy Women.

"I think it's really neat," Jansen said. "It shows that multi-generational aspect of dairy farming, and being involved in the dairy community."

For the Krahn family,



Oregon Dairy Women

**Gracie Krahn, left, was crowned 2021-22 Oregon Dairy Princess Ambassador, and Bella Giraud, of Benton County, was named Alternate Dairy Princess Ambassador**

dairy farming runs deep. Both Amy Krahn and her husband, Ben, were raised on dairies in Oregon and Wisconsin, respectively. In 2010, they purchased a 5-acre farm in Albany, Ore. where they milk a dozen cows and bottle their own line of non-homogenized, or "creamline," milk.

The farm is partly a means to support their daughters' passion for show animals. Gracie Krahn and her younger sister, Clancey, have competed

in showmanship events from Madison, Wis., to Louisville, Ky. They raise their animals on the farm, and are directly responsible for their day-to-day care.

Gracie graduated from Santiam Christian High School last year, and is now attending Linn-Benton Community College, where she studies animal sciences. She was also previously crowned the 62nd National Jersey Queen by the American Jersey Cattle



Oregon Dairy Women

**County Dairy Princess Ambassadors, from left: Krisarah Nygren, Linn Benton Counties; Mia Berry, Washington County; Hanna VanDeWalle, Yamhill-Polk Counties; Jess Hewitt, Clackamas County and Mariana Llamas; Tillamook County.**

Association in early 2020 — another post whose duties include dairy advocacy and education.

Upon being crowned Oregon Dairy Princess Ambassador, Krahn received \$3,000 in scholarships. She was one of five county dairy princess ambassadors vying for the state title.

Bella Giraud, of Benton County, was named Alternate Dairy Princess Ambassador and will assist in promotional events for the coming year.

The Oregon Dairy Women have also named this year's incoming country dairy princess ambassadors, all of whom will compete next spring for the state crown. They are:

- Jess Hewitt, Clackamas County.
- Krisarah Nygren, Linn and Benton counties.
- Mariana Llamas, Tillamook County.
- Mia Berry, Washington County.
- Hanna VanDeWalle, Yamhill and Polk counties.

**CALENDAR**

Submit upcoming ag-related events on [www.capitalpress.com](http://www.capitalpress.com) or by email to [newsroom@capitalpress.com](mailto:newsroom@capitalpress.com).

**THURSDAY-SATURDAY  
JUNE 24-26**

**United Fresh Convention and Expo (in person and online):** Los Angeles Convention Center. Whether online or in person, United Fresh is your partner connecting the global fresh produce industry. Sponsored by the United Fresh Produce Association and the Fresh Produce and Floral Council. Website: <https://www.unitedfresh.org/united-fresh-convention-expo-2021/#>

**MONDAY-TUESDAY  
JUNE 28-29**

**Idaho Cattle Association Summer Round-Up:** Stagecoach Inn, Salmon, Idaho. The conference will

include updates from the National Cattlemen's Beef Association, Idaho Beef Council, Idaho Department of Agriculture and Idaho Departments of Lands, as well as market updates. An optional rafting trip is planned for June 27. Website: [www.idahocattle.org](http://www.idahocattle.org)

**WEDNESDAY-THURSDAY  
JUNE 30-JULY 1**

**Western Governors' Association 2021 Annual Meeting (virtual):** The event will feature governors in roundtable discussions on topics such as energy response, public lands challenges, shared stewardship, infrastructure and workforce. Website: [www.westgov.org](http://www.westgov.org)

**WEDNESDAY-SUNDAY  
JUNE 30-JULY 4**

**St. Paul Rodeo:** 7:30 p.m. nightly, with a 1:30 p.m. matinee

Sunday at the St. Paul, Ore., rodeo grounds. Tickets are \$16 to \$26, not including a convenience fee, and can be purchased online at [StPaulRodeo.com](http://StPaulRodeo.com). For more information, visit the rodeo's website or call 800-237-5920. Covid guidelines will be in place during the rodeo. Tickets purchased earlier in the year will be honored.

**TUESDAY-THURSDAY  
AUG. 10-12**

**2021 Cattle Industry Convention & Trade Show:** Gaylord Opryland Resort, Nashville, Tenn. The convention will include educational seminars, exhibits and networking. Website: <http://convention.ncba.org>

**WEDNESDAY-FRIDAY  
AUG. 18-20**

**Farwest Show:** Oregon Con-

vention Center, 777 NE Martin Luther King Jr. Blvd., Portland. The Farwest Show, the biggest green industry trade show in the West, is produced by the Oregon Association of Nurseries, a trade organization that represents and serves the interests of the ornamental horticulture industry. For more information, go to [www.farwestshow.com](http://www.farwestshow.com)

**R-CALF USA 2021 Convention and Trade Show:** Rushmore Plaza Civic Center, Rapid City, S.D. The convention will feature industry speakers and networking opportunities. Website: [www.rcalfconvention.com](http://www.rcalfconvention.com)

**AUG. 20-29**

**Western Idaho Fair:** Expo Idaho, 5610 Glenwood St., Boise. Check back later for more information. Website: [www.idahofair.com](http://www.idahofair.com)

**AUG. 27-SEPT. 6**  
**Oregon State Fair:** Oregon State Fair & Exposition Center, 2330 17th St. NE, Salem, Ore. We're looking forward to welcoming you back to the Oregon State Fair, Aug. 27-Sept. 6, 2021. Stand by for more information! Website: <https://oregonstatefair.org/>

**SEPT. 3-11**  
**Eastern Idaho State Fair:** Eastern Idaho Fairgrounds, 97 Park St., Blackfoot, Idaho. The daily schedule and entertainment line-up will be published in June. Website: <https://funatthefair.com/>

**SEPT. 3-26**  
**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/>



**Capital Press**  
EMPOWERING PRODUCERS OF FOOD & FIBER  
Established 1928

**Capital Press Managers**

Joe Beach ..... Editor & Publisher  
Anne Long ..... Advertising Director  
Carl Sampson ..... Managing Editor  
Samantha McLaren ..... Circulation Manager

Entire contents copyright © 2021  
EO Media Group  
dba Capital Press

An independent newspaper  
published every Friday.

Capital Press (ISSN 0740-3704) is  
published weekly by EO Media Group,  
2870 Broadway NE, Salem OR 97303.

Periodicals postage paid at Portland, OR,  
and at additional mailing offices.

POSTMASTER: send address changes to  
Capital Press, P.O. Box 2048 Salem, OR  
97308-2048.

**To Reach Us**

Circulation.....800-781-3214  
Email.....[Circulation@capitalpress.com](mailto:Circulation@capitalpress.com)  
Main line .....503-364-4431

**News Staff**

**Idaho**  
Carol Ryan Dumas .....208-860-3898

**Boise**  
Brad Carlson .....208-914-8264

**Western Washington**  
Don Jenkins.....360-722-6975

**Eastern Washington**  
Matthew Weaver .....509-688-9923

**Oregon**  
George Plaven .....406-560-1655  
Mateusz Perkowski .....800-882-6789  
Sierra Dawn McClain .....503-506-8011

**Designer**

Randy Wryghthouse.....800-882-6789

**To Place Classified Ads**

Telephone (toll free).....800-882-6789  
Online .....[CapitalPress.com/classifieds](http://CapitalPress.com/classifieds)

**Subscriptions**

Mail rates paid in advance  
Easy Pay U.S. \$4/month  
(direct withdrawal from bank  
or credit card account)

1 year U.S. ....\$55  
2 years U.S. ....\$100  
1 year Canada.....\$275  
1 year other countries .....call for quote  
1 year Internet only.....\$49.99  
1 year 4-H, FFA students/teachers .....\$30  
9 months 4-H, FFA students/teachers ..\$25

Visa and Mastercard accepted

**To get information published**

**Mailing address:**  
Capital Press  
P.O. Box 2048  
Salem, OR 97308-2048

**News:** Contact the main office  
or news staff member closest to you,  
send the information to  
[newsroom@capitalpress.com](mailto:newsroom@capitalpress.com)  
or mail it to "Newsroom," c/o Capital Press.  
Include a contact telephone number.

**Letters to the Editor:** Send your  
comments on agriculture-related public  
issues to [opinions@capitalpress.com](mailto:opinions@capitalpress.com), or  
mail your letter to "Opinion," c/o Capital  
Press. Letters should be limited to  
300 words. Deadline: Noon Monday.

**Capital Press ag media**

CapitalPress.com  
FarmSeller.com  
[MarketPlace.capitalpress.com](http://MarketPlace.capitalpress.com)  
[facebook.com/CapitalPress](https://facebook.com/CapitalPress)  
[facebook.com/FarmSeller](https://facebook.com/FarmSeller)  
[twitter.com/CapitalPress](https://twitter.com/CapitalPress)  
[youtube.com/CapitalPressvideo](https://youtube.com/CapitalPressvideo)

**Index**

Dairy .....10  
Markets .....12  
Opinion .....6

**CORRECTIONS**

The June 4 story "The Heartbeat of Pulses," incorrectly identified the International Year of Pulses as originating from the World Trade Organization. The United Nations was the organization that declared the year.

Also, Tim and Christine McGreevy have been married for 38 years, and not 30 years, as the story incorrectly indicated.

The Capital Press regrets the errors.

**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](mailto:newsroom@capitalpress.com).  
We want to publish corrections to set the record straight.