

People & Places

Variable rates boost crops

Ryan Christensen brings high-tech prescriptions to his family's farm

By JOHN O'CONNELL
Capital Press

GRACE, Idaho — Ryan Christensen didn't give up when his father balked at the cost of hiring consultants to install variable-rate technology on the family's 3,000-acre wheat and potato farm.

Instead, Christensen researched and set up his own method of precision-application — an approach to farming that uses GPS technology and field data to vary inputs based on field conditions. Christensen believes his approach requires far less labor but achieves comparable yield and input improvements.

It's one of many examples of how Christensen Farms has been transformed into a more productive, data-driven and high-tech operation since the 32-year-old returned to the family business in 2006.

"My philosophy is if data can be collected, I want it," said Christensen, the fifth generation to farm the land his family homesteaded in the 1880s.

He's also incorporated drones and a cutting-edge irrigation method in crop production — and he's succeeded with new grounds-keeping techniques at the family's golf course.

While studying landscape management at Brigham Young University in Provo, Utah, Christensen worked under professor Bryan Hopkins, jointly publishing re-



John O'Connell/Capital Press

Ryan Christensen shows an image of the variable-rate pivot on his family's farm in Grace, Idaho, used to irrigate agricultural crops and a golf course. Christensen has implemented a simplified and effective method of devising variable-rate prescription maps on his farm.

search on turf grass nutrient management. Hopkins later helped Christensen take on variable-rate production, suggesting an approach involving maps with zones that possess common characteristics but may be in different parts of the field.

Fewer zones

Typically, fields are divided into grids of contiguous 1.5-acre plots, which are all intensively soil sampled to devise variable-rate prescriptions. Christensen, who further honed his system by reading GPS mapping instruction books, may use just a few zones with common conditions, getting by with about 60 soil samples on a 65-acre field compared to roughly 450 samples needed for the grid method.

Christensen made his first

zone maps in 2012, based on limited yield data, topographical Google Earth maps and his father's insight about productivity throughout each field. He's since included bare-soil drone imagery to assess soil quality based on its color, as well as improved yield data tied to variable-rate fertilizer and seeding-rate maps.

Drone spots stress

He also flies a drone over winter wheat each spring to detect pockets of stressed crops and determine where replanting might be in order. Yields have become far more consistent throughout the farm.

"We've been able to make very poor ground better and good ground a little better," Christensen said.

In 2015, Christensen also

added a variable-rate water map to tweak one of his field prescriptions. That year, he became one of the first Idaho farmers to test variable-rate irrigation.

Christensen explained that his family built a nine-hole golf course in 1995 on an unproductive rocky outcropping that bisected a pivot. With its \$35,000 variable-rate irrigation system, Christensen said the family can now adjust each nozzle independently to provide optimal water for the golf course, as well as the adjacent crops watered by the pivot.

It's variable

He and Hopkins are entering the second year of a five-year study to assess the economics of variable-rate irrigation and determine the feasibility of installing addi-



Western Innovator

Ryan Christensen

Age: 32

Job: A partner in Christensen Farms with his father, Bart, and his brother, Kyle, 42.

Innovation: Helped his farm implement variable-rate irrigation, fertilizer and seeding, using a zone-based prescription map he believes is simpler and more efficient to use than other systems.

Education: Bachelor's degree in landscape management with a business management minor

Hometown: Grace, Idaho

Family: Wife, Andrea, and children Ava, 8, Lila, 5, Lincoln, 3, and Claire, 3 months

tional systems.

Too often, Hopkins hears from growers who want to implement variable-rate fertilizer but miss the "low-hanging fruit" by failing to optimize their irrigation. Over-watering can push nutrients through the soil profile and hurt yields, he said.

"When I first started talking about variable-rate fertilizer, people looked at me like I was nuts, and now it's commonplace," Hopkins said. "I think variable-rate irrigation will become commonplace."

Calendar

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Through Saturday Feb. 4

Organicology 2017. Hilton Portland and Executive Tower, 921 SW Sixth Ave., Portland, Ore. Topics range from FDA down on the farm to farmworker shortages, regulatory updates and seed selection. www.organicology.org

Saturday, Feb. 4

Ties to the Land workshop. 9 a.m.-5 p.m. Bayview Community Center, 20298 E. Perimeter Road, Bayview, Idaho. This award-winning workshop uses presentations, video clips and interactive exercises to help families who own farm, forest or other rural land learn more about planning for an orderly transition to the next generation.

Cost: \$35. www.uidaho.edu/extension/forestry

Monday, Feb. 6

Preserving Farmland for Local Food's Sake. 8:30 a.m.-3:30 p.m. Lane Community College Center for Meeting and Learning, 4000 E. 30th Ave., Eugene, Ore. The conference offers a unique venue for creating new business connections through networking sessions, educational workshops and a vendor trade show. www.localfoodconnection.org

Tuesday, Feb. 7

Pesticide Short Course-IPM. 8 a.m.-4:10 p.m. Lane Community College, Center for Meeting and Learning, Bldg. 19, 4000 E. 30th Ave., Eugene, Ore. \$85 if registered by Jan. 23; \$95 after. <http://extension.oregonstae.edu/lane/farms>

Alfalfa U. Canyon Crest Dining and Event Center, 330 Canyon Crest Drive, Twin Falls, Idaho. Learn how alfalfa can contribute to a farm's profitability. alfalfaU.com

Tuesday-Thursday Feb. 7-9

Spokane Ag Expo and Pacific Northwest Farm Forum. Spokane Convention Center, 334 W. Spokane Falls Blvd., Spokane, Wash. Spokane Ag Expo is the largest farm machinery show in the Inland Northwest. <https://greater.spokane.org/ag-expo/>

Washington Association of Wine Grape Growers 2017 Con-

vention. 8 a.m.-5 p.m. Three Rivers Convention Center, 7016 Grandridge Blvd., Kennewick, Wash. This annual event includes the second largest industry trade show in the nation and a welcome breakfast. www.wawgg.org

Wednesday, Feb. 8

Colusa County Almond Day. 8:15 a.m.-12:15 p.m. Stagehands Theater, Colusa County Fairgrounds, 1303 10th St., Colusa, Calif. www.sacvalleyorchards.com/events

Oregon Clover Growers Annual Meeting. Noon-1 p.m. Holiday Inn, Wilsonville. www.oregonclover.org

Wednesday-Thursday Feb. 8-9

The 8th Annual Organic Farming Conference. Canyon Crest Event Center, 330 Canyon Crest Drive, Twin Falls, Idaho. The event is organized by the Northwest Center for Alternatives to Pesticides. www.pesticide.org events

Friday, Feb. 10

University of Idaho Cropping School. 8:30 a.m.-3 p.m. Best Western Plus Caldwell Inn & Suites, 908 Specht Ave., Caldwell, Idaho. This event will have presentations on fertilizer and irrigation water management, crop diseases, falling numbers, soil health, precision ag, unmanned aerial systems and a drone flight demonstration (weather permitting). CEUs available. The cost is \$20 and includes breakfast and lunch. owalsh@uidaho.edu, 208-722-6701

Friday-Sunday Feb. 10-12

2017 Women's Conference. Chico Hot Springs, 163 Chico Road, Pray, Mont. Women's leadership, communication and other agriculture-related topics will be discussed. Sponsored by the Montana Farmers Union. montana-farmersunion.com

Tuesday-Thursday Feb. 14-16

World Ag Expo. International Agri-Center, 4500 Laspina St., Tulare, Calif. The nation's largest agricultural exhibition celebrates its 50th year. www.worldagexpo.com

Practical Food Safety & HACCP. The Riverside Hotel, 2900 Chinden Blvd., Boise, Idaho. HACCP, or Hazard Analysis Critical Control Points, is a preventive system for the control of health-threatening food hazards during food processing. The comprehensive three-day workshop is designed for individuals responsible for implementing and man-

aging a HACCP system in a food processing facility. Participants who pass a final test will receive a certificate of completion. <http://bit.ly/2f2iJ9Q>

Wednesday, Feb. 15

Soil Health Workshop. 9 a.m.-2 p.m. Best Western Burley Inn and Convention Center, 800 N. Overland Ave., Burley, Idaho. Keynote speaker Marlon Winger, Natural Resources Conservation Service state agronomist, will give a presentation titled "Is It a Cover Crop or a Biological Primer?" Other topics will include cover crops as they relate to eradicating blight and integrated pest management, as well as presentations on biofumigation and NRCS programs and projects.

Thursday, Feb. 16

Keeping Your Family Business Communication on Track. 7:30 to 9 a.m. Hayden's Lakefront Grill, 8187 SW Tualatin-Sherwood Road, Tualatin, Ore. This session will provide tools and techniques that attendees can use right away to cultivate better communication among family members, employees, and shareholders. Presented by: Mark Wickman, Family Business Counsel. \$40 per person. 800-859-7609, <http://bit.ly/2fPK987>

Friday, Feb. 17

Farm Bureau Women's Legislative Reception, 10 a.m.-3 p.m. Oregon State Capitol Galleria, 900 Court St. NE, Salem, Ore. Join the Oregon Farm Bureau Women's Advisory Council for coffee and cake to kick off the 2017 legislative session and recognize the important roles women play in Oregon agriculture. www.oregonfb.org

Rural Farmers' Market Workshops. 1-3:45 p.m. Adair Clubhouse, 6097 NE Ebony Lane, Corvallis, Ore. This interactive series of workshops and small group discussions will focus on topics particularly relevant to rural, small scale or resource limited farmers' markets. Sponsored by the Oregon Farmers Markets Association. Free, RSVP required. Website: <http://bit.ly/2iatQ6Q>

Saturday, Feb. 18

Oregon State University Extension Service Small Farms Program. 9 a.m.-5:15 p.m. LaSells Stewart Center and CH2M Hill Alumni Center, 875 SW 26th St., Corvallis, Ore. A day-long event geared toward farmers, agricultural professionals, food policy advocates, students and managers of farmers' markets. Twenty-seven educational ses-

sions are offered on a variety of topics relevant to the Oregon small farmers and include a track in Spanish. Cost: \$50 by Jan. 25, \$75 by Feb. 10, \$150 at the door. <http://smallfarms.oregonstate.edu/sfc>

Monday-Tuesday Feb. 20-21

Larry Branan Idaho Ag Summit. Red Lion Downtowner Hotel, 1800 W Fairview Ave., Boise, Idaho. www.idahoagsummit.org

Wednesday, Feb. 22

Marion Soil and Water Conservation District annual meeting and celebration. 5:30-8:30 p.m. Macleay Conference and Retreat Center, 2887 74th Ave. SE, Salem, Ore. RSVP by Feb. 7 to janice.calkins@marionswcd.net or call 503-391-9927.

Oregon Ryegrass Commission meeting. 6-8 p.m. Cascade Grill restaurant, 110 Opal St. NE, Albany, Ore. www.ryegrass.com

Wednesday-Friday Feb. 22-24

2017 Family Farm Alliance Annual Meeting and Conference. Monte Carlo Resort and Casino, 3770 S. Las Vegas Blvd., Las Vegas, Nevada. www.familyfarmalliance.org

Saturday-Sunday Feb. 25-26

Second Annual Mid-Valley Winter Ag Fest. 9 a.m.-4 p.m. Saturday, 10 a.m.-4 p.m. Sunday. Polk County Fairgrounds and Event Center, 520 S Pacific Highway W, Rickreall, Ore. This event will promote all aspects of local ag commerce and provide a family friendly event that is fun and educational for kids. Proceeds will benefit Polk County 4-H and FFA. www.mvwagfest.com

Thursday-Friday March 2-3

Idaho Hay and Forage Conference. Best Western Inn, 800 N. Overland Ave., Burley, Idaho. Speakers will include Dan Understander, a University of Wisconsin forage specialist; Steve Orloff, a University of California Extension adviser; and Doug Robison, senior vice president of Northwest Farm Credit Services. www.idahohay.com

Wednesday, March 8

Taxes and Succession Planning. Noon-1 p.m. Join us for a free online webinar and an introduction to how planning ahead for estate and gift taxes can help address family and business needs and meet retirement

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