

# High-tech dairy system milks, monitors herd automatically

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As is the case at most U.S. dairies, labor had become a huge issue. Competition from other industries in a tight labor market made it harder to keep workers and caused wages to skyrocket. While going robotic would also raise wages, it would require fewer workers and reduce overall labor costs by 60 to 70 percent.

The savings don't fully cover the investment in robotic milkers — but if wages go up another couple of dollars, the savings would cover it, Webb said.

"But it's not just about reducing labor costs," he said.

There are other reasons the partners decided to go robotic. Improved milk production, better efficiency and cow health are a few. In addition, the technology has evolved beyond its original application for smaller dairies and costs have come down, he said.

"In the last couple of years, the technology has turned the corner and we're seeing extreme benefits in large operations," he said.

The technology has evolved to a point that robotic milkers are fast and efficient — and they can collect much more information on individual cows than a conventional dairy, he said.

## Making the switch

The partners have built a new 160,000-square-foot, climate-controlled, energy- and water-efficient facility overlooking the conventional dairy. Half of their herd will be housed and milked in the new facility, which will be equipped with 18 robots that can each milk an average of 60 cows three times a day.

The facility is divided into six living areas with 180 cows and three robots in each. There the cows can freely eat, relax on water beds and head to the robotic milker when they're ready. The cows are fitted with electronic collars that collect data around the clock and feed information to the milking robots.

When the cow comes to be milked, the robot identifies her and her production when last milked. If she's due for another milking — with the robot calculating the time it would take her to produce her potential — she is let into the milker. Tasty grain pellets are released according to her production.

How often she is milked depends on her lactation. It can range from twice a day to five times a day, Webb said.

"The robot is doing the math all the time," he said.

It will only let her in if she



A cow ready to be milked by a robotic milking machine.

Lely

needs to be milked. If she doesn't and has only come back for feed pellets, it will turn her away, he said.

"It's making those determinations," he said.

It's also collecting and storing information and notifies the appropriate person if there's a problem, such as not being able to hook up the milking apparatus.

"It has to notify us when it's not working right, and we can dictate what we want to be notified about and who it goes to," he said.

## Detailed data

When cows are accepted into the milker, the robot cleans and stimulates the teats and attaches the milking apparatus with the aid of a laser eye.

The robot can measure the quantity and characteristics of the milk collected in each quarter and can detect temperature in any quarter. It also can detect blood in the milk, dumping that milk, and it measures the somatic cell level and diverts the milk to a calf-milk tank if the level is too high.

In addition, the robot will sort the cows with elevated temperatures, blood in the milk or elevated levels of somatic cells out of the herd after milking and into a pen for hospital staff to address.

Because it also monitors the chemical properties of the milk, it can detect subclinical mastitis and sorts out those cows as well.

"Those are things that a robot can do that you can't do on a conventional dairy. It's just turning out to be an incredible management tool," he said.

In a conventional barn, those things wouldn't be detected for days. But with the robots, issues are detected immediately. Treatments can be less invasive, and it can reduce the use of antibiotics and reduce medical costs, he said.

The collars also detect when the cow is eating, lying down or moving around. Increased activ-

ity typically denotes a cow is in heat and when that information goes through the robot, the robot sorts it to the waiting pen to be bred.

"The robot monitors cows and milk. Whatever we put in the computer, the robot will manage for that. And quite honestly the robot does a better job at doing that," he said.

## Looking ahead

In addition to moving to robotics, the partners saw an opportunity to be a Lely dealer and began Snake River Robotics.

"It fit into our diversification model," Webb said.

They had toyed with the idea of diversification 10 to 15 years ago and decided to get serious about it five or six years ago, he said.

In addition to the dairy, the partners own and operate Heglar Creek Electric, Heglar Creek Cattle and Raft River Sod. Snake River Robotics includes one more partner, Jared Simkins.

The cows at Heglar Creek will start moving into their new digs any day, and the longer term plan is to build another robotic facility for the other half of the herd.

The partners are banking on research that shows lowering cow stress results in higher productivity, better health, a longer life span, lower cull rates and more pregnancies on average, Webb said.

The operation is geared for calm, comfortable and healthy cows, and keeping people and equipment out of the facility as much as possible is an important factor, he said.

"We don't want to stress the cows any more than we have to," he said.

When asked what he thought his father, now deceased, would think of cow waterbeds and robotic milkers, Webb laughed.

"He'd probably shake his head a little bit then think it's great. He loved to see new ideas and new things," he said.

## Adoption of robotic milkers in U.S. is projected to grow

By CAROL RYAN DUMAS  
Capital Press

While robotic milkers have been used in Europe since 1990, only about 5 percent of U.S. dairy operations use the technology.

But things are changing, and there's plenty of room to grow, said Ben Laine, senior analyst with CoBank.

The use of robotic milkers in the U.S. has mostly been on small to medium dairies in the upper Midwest and the Northeast. But in the last couple of years, experimentation with robotics has become more commonplace at large-scale operations, he said.

"So you're seeing it across the spectrum, different size farms and across more regions of the country than we've seen in the past," he said.

One of the biggest changes driving the move is increasing labor costs and growing difficulty in finding workers. While there still isn't a clear-cut financial advantage to the technology across the industry, those labor issues are making the trade-offs tilt in favor of robotics, he said.

It's also coming into play when dairy owners need to make big investments and upgrades to their milking parlor, he said.

If they're at that point and wondering if the next generation is coming back to the farm or whether they should liquidate, making the change to robotics is a way to attract a younger generation that might be on the fence about returning, he said.

Robotic milking is a way

to keep the operation modern, sustainable and in business, he said.

One of the main considerations cited by producers in making their decision is having access to a dealer or service, he said.

"You need someone who can get there within an hour or two. If you're down very long, you start losing money," he said.

It's also helpful to be technologically and mechanically savvy to be able to fix things on the fly, he said.

"And you still have to be comfortable working on a dairy and working with animals; it's still a dairy," he said.

Cost of a robotic milker, which can handle an average of 60 cows milking two or three times a day, is in the \$200,000 range. But costs can be less for larger purchases of more robots. The investment is like paying for labor up front, he said.

As for return on investment, that's difficult to nail down. In some cases ROI improves, and in others it decreases a little, he said.

"We don't have a lot of data to look back on," he said.

Anecdotally, pay-off seems to be at 10 to 12 years. Data from Europe is encouraging about the life span of robotic milkers, he said.

"We hear about them lasting 20 years, and technology keeps getting better," he said.

One of the primary motivations for adoption is labor cost and efficiency, and the adoption rate in the U.S. is projected to grow 20 to 30 percent annually in the years ahead, he said.



Photos by Carol Ryan Dumas/Capital Press

Workers are putting the final touches on a new 160,000 square foot robotic milking facility at Heglar Creek Dairy in Idaho.



A new 160,000-square-foot robotic milking facility will soon be operational at Heglar Creek Dairy in southern Idaho.

## Federal courts differ on WOTUS Rule: Washington, California under Obama rule but Idaho is not

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guides how far the Clean Water Act reaches onto farms and ranches. The Farm Bureau maintains the Obama rule exceeds what Congress intended and would regulate dried-up ditches and barely damp ground nearly a mile from waterways.

Coughenour didn't pass judgment on that claim. A Reagan appointee, Coughenour faulted Trump's Environmental Protection Agency for suspending the Obama rule without taking public comments on the rule's merits. Instead, the EPA only took comments on the delay in implementing the rule until at least Feb. 6, 2020.

Coughenour's ruling stemmed from a lawsuit filed by Puget Soundkeeper Alliance and other environmental groups that alleges the Obama rule wasn't strict enough. Puget Soundkeeper Executive Director Chris Wilke said Monday that the ruling was a "procedural step."

"Now, I think we can focus on the substance of the 2015 rule," he said.

An EPA spokeswoman said in an email the agency was reviewing Coughenour's ruling. The EPA and Farm Bureau have indicated they will appeal the South Carolina ruling by Judge David Norton to the 4th U.S. Circuit Court of Appeals.

The EPA argues delaying the Obama rule makes sense because the agency is reconsidering it and courts are issuing contradictory orders. Coughenour and Norton, appointed by George H.W. Bush, rejected the EPA's arguments and both cited a case in which farm groups successfully challenged a move by the Obama administration in 2009 to delay implementing rules regarding the hiring of seasonal foreign workers.

The EPA and Army Corps of Engineers say they recognize the uncertainty the court rulings have created. According to an EPA statement, "implementation issues that arise are being handled on a case-by-case basis."

## Multiple scenarios for regulating canola were offered to lawmakers

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option, there would remain "questions about isolation distances required to maintain seed purity and how to resolve conflicts between growers near the borders" and notes stakeholders haven't come to a consensus on such issues.

• No exclusion zone — Without creating a formal exclusion zone, ODA could use its existing authority to impose new requirements on all growers of Brassica crops, such as treating seeds and otherwise controlling diseases and insects, following minimum rotation periods between Brassica plantings and killing any Brassica volunteers before they flower to reduce cross-pollination risks.

While this option would

follow the findings of an Oregon State University report that said canola poses no greater hazards than other Brassica crops, it "may not specifically protect the unique attributes of the specialty seed industry, because of the lack of an exclusion zone," the report said.

• Extend existing system — The Legislature could extend the existing system, under which ODA is in charge of "pinning" 500 acres of canola a year to reduce cross-pollination risks, with the possibility that a larger acreage level could be phased in over time. As the agency notes, however, "nothing in the OSU report indicates that there is a scientific reason for limiting the number of canola acres in the Willamette Valley Protected District."

• Statewide pinning — New legislation could require a statewide pinning system for Brassicas maintained by ODA or OSU, which would be "equitable for both specialty seed and canola growers" but would require additional resources to enforce, the report said. Also, the administrative rules for state government agencies would "not allow for quick resolution of conflicts between growers."

The report said that ODA plans to begin a rulemaking process by the end of the year to provide farmers with certainty before the summer of 2019, when canola fields would be harvested for the final time under existing rules. A copy of the canola recommendation report can be found online at [oda.direct/canola](http://oda.direct/canola).