

DAIRY BY DROIDS

Tillamook farmer adopts robotic milking, feeding systems

By **GEORGE PLAVEN**
Capital Press

TILLAMOOK, Ore. — Kurt Mizee stood and watched as the Lely Vector swept across the concrete barn floor at Tilla-Bay Farms, dispensing feed for 180 dairy cows.

The self-driving robot — nicknamed “The Orca” after the boat from the movie “Jaws” — resembles a giant Roomba vacuum, using obstacle-detection sensors to maneuver along rows of stalls where hungry Holsteins huddled in anticipation.

Automation is rapidly transforming how dairy farmers run their operations, said Mizee, the fourth-generation owner of Tilla-Bay Farms in Tillamook, on Oregon’s North Coast. As labor becomes more scarce, robots are picking up the slack.

“Certainly, it’s made us more efficient,” Mizee said. “We’ve stayed the same herd size for over 10 years, but increased our (milk) production 25-30% in that time.”

In addition to the automatic feeder, Tilla-Bay Farms has three robotic milkers, where cows voluntarily go to be milked three times per day. The wireless system synchronizes to collars fitted on each cow, tracking everything from quality and quantity of milk to how much she has eaten during the day.

Milk from Tilla-Bay Farms is sold to the Tillamook County Creamery Association, a cooperative that makes Tillamook cheese, yogurt, ice cream and other dairy products.

Mizee, who for several years also worked as a regional dealer for Lely North America, said his family’s 104-year-old dairy was among the



The Lely Vector sweeps along the dairy barn at Tilla-Bay Farms, dispensing a blended mix of feed for 180 dairy cows.



Kurt Mizee, of Tilla-Bay Farms in Tillamook, Ore., in the “feed kitchen” next to densely packed 4,000-pound blocks of silage.

first in the West to invest in the robots. He predicts there will be greater acceptance in the industry to compensate for an ongoing shortage of workers.

“In our own county, every farm is at least one person short, maybe two,” Mizee said. “In terms of trying to combat costs, this is getting a lot of attention.”



A bridge crane scoops a load of silage from the feed kitchen to be mixed and delivered via robot to dairy cows at Tilla-Bay Farms in Tillamook, Ore.

Family tragedy
For Mizee, the decision to embrace automation was spurred by tragedy.

Mizee was attending the World Ag Expo in Tulare, Calif., in 2011 when he got the call. His wife, Wendy, and 8-year-old daughter Shelby had been killed in a head-on crash on Highway 6 outside Tillamook while driving home from a doctor’s visit in Portland.

All of a sudden, Mizee found himself a newly single parent to his son, Ryan, while simultaneously balancing around-the-clock demands at the dairy.

“I used to get up at 3:30 a.m. and be here by 3:45,” Mizee said. He wouldn’t get home until 7:30 in the evening. “That’s not a sustainable way to parent.”

Mizee purchased the robotic milkers, which allowed him to cut back one employee and afforded much more time he could dedicate to being a dad.

The cows effectively set their own milking schedule, coming and going as they please without direct supervision.

The system alerts Mizee via text message if there are any problems or a specific cow has gone too long without being milked.

“We only ever touch the cows that have an issue,” he said. “Everyone else is free to do whatever cows do all day.”

Between labor savings and increased milk production, Mizee said the system paid for itself in seven years. From there, he began checking out further technological upgrades.

Enter the Lely Vector, a mixing and feeding droid that blurs the line between traditional agriculture and science fiction.

The process begins in the “feed kitchen,” an extension of the dairy barn loaded with hay in densely packed 4,000-pound blocks.

A robotic claw, or bridge

crane, drops from overhead to scoop large clumps of feed that it then drops into the feeder for mixing. Each 1,600-pound load includes grass silage, corn silage, corn grain and a canola-based vitamin and mineral protein mix, carefully rationed to meet the cows’ nutritional needs.

Once the load is ready, the feeder emits a series of precautionary beeps before making its pre-programmed rounds. As opposed to one large daily feeding, Mizee said the Vector feeds 18 smaller meals, ensuring the forage remains fresh.

“This is a more consistent feed every time the cow comes to the bunk,” Mizee said.

Multiple benefits

Freshness means less feed goes to waste. Whereas in the past the cows might refuse upwards of 1,000 pounds of feed per day, now Mizee said only about a shovel-full goes unconsumed. Those savings add up quickly, especially given higher hay prices due to drought.

Smaller meals also help the cows digest, stabilizing rumen pH — acidity — and producing a higher butter fat content in the milk.

The system is also better for the environment, Mizee said. He estimated the farm burns 20 fewer gallons of diesel per week from driving tractors.

Finally, the time saved by automation has led to a better quality of life. Mizee remarried seven years ago, which he credited in part to on-farm automation giving him the flexibility to start dating again.

The technology available continues to develop, Mizee said. While some farmers may still be skeptical, Mizee said the proof is in the increased efficiency and milk quality.

“You have to have an open enough mind to let the technology do its job,” he said. “Because it’s a completely different way of operating a dairy farm.”

The biggest remaining hurdle, Mizee said, will be training qualified service professionals to maintain the systems. He served on an advisory committee to establish a new agricultural technology degree at Tillamook Bay Community College, which was introduced in 2020.

“With any technology, I always warn people there’s five days out of the year when you wonder, ‘Why did I do this?’ The other 360, it feels like a pretty great decision,” he said.

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