

## Happy herd

### Marshalls create unique organic, robotic dairy

BY JEFF POOLE  
Editor

The 550 cows at Keith and Deanne Marshall's Unionville dairy farm would seem to live an enviable life. They eat when they want. They get milked when they want. They have high-energy organic grasses in their pastures and they rotate among those daily. They even have waterbed-like stalls in the milking parlor that further their comfort before their milking.

It's quite an operation. And it's definitely not a traditional dairy farm.

"We cater to their every need," Deanne Marshall says with genuine affection for their 550-member, mixed-breed herd. "They're very comfortable. They've got it made!"

That's not to mean the dairy business is easy, though. For the Marshalls' cows it may be, but the dairy didn't get here easily.

Marshall said her husband, his brother and her father-in-law purchased the farm more than 40 years ago, but only in the last few years have she and Keith reimagined and specifically re-engineered their dairy farm operation to more of what she called a "European" operation.

"I don't think there is anyone else in the United States with an operation like this," she said. "We're definitely the only organic, robotic dairy in this area."

Organic. Driving into the farm, any visitor is keenly alerted to that designation as signs mark the farm as a "bio-secure area," regulated by the United States Department of Agriculture. To qualify, the Marshalls' entire operation is inspected thoroughly and regularly. They use no penicillin, no antibiotics on their cattle, whose milk is sold and marketed under grocery giant Harris-Teeter's organic label.

Robotic. The dairy has nine, fascinatingly efficient robotic milking machines that do everything from cleaning the dairy cows' udders, to testing the milk for impurities and calculating production per milking quarter. A large red cow outside the dairy office is a symbol of the Lely company that makes the Marshalls' nine robotic milking machines that measure and perform just about everything imaginable as part of the operation. Collars around each cow's neck identify them to the

> See **DAIRY**, page B6



Dairy cows at the Marshall farm in Unionville have a tremendous amount of freedom. They can eat when they want, milk when they feel like it and lounge on comfortable, water bed-like pads in the barn. When they're ready to be milked, they enter a stall that cleans their udders, and connects a robotic milker that records an array of data and tests the milk as it's being collected. Deanne Marshall visits with one of the calves in the calving barn. The farm collects more than 60,000 gallons of milk daily. For more photos, visit [www.orangenews.com](http://www.orangenews.com).

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## > Dairy continued from page B1

machines, which can allow or prevent access to milking, not to mention alert the Marshalls and their staff if any of the herd have become sick or otherwise compromised. From her phone, Marshall can receive alerts or check in on the condition of any in the herd.

This “European” model of dairying puts the herd on small pastures with daily, rotational grazing. The Marshalls plant clover, rye, fescue and supplement the grasses with natural nutrients (including peanuts and other supplements) that are roasted and blended with feed freely distributed in the efficient and bovinely luxurious milking parlor. Marshall credits her husband, Keith, with the entire design of the operation, which appears

simultaneously airy and yet compact. Through it all, the herd flows at its discretion, except for a few hours early each morning when they’re turned out to the pasture so farm staff can clean the milking barn. Even that is a marvel. A special floor, designed and constructed in Belgium, allows waste to channel into an underground pit below and away. Automatic feeders distribute food to happy, hungry herd members as others lounge on soft, nearby beds that respond to their movements. When they cows feel ready to milk, they know the way to the machines, though their collars won’t permit access if they’re not ready to return.

Once in the robotic milking stall, a gate encloses the cow,

while the machine offers the cow food during the seven-to-nine-minute milking process. As the cow munches away, a cleaning process begins with the robot cleaning and sterilizing the cow’s udder before a laser connects multiple milking tubes to each teat on the udder. A computer screen on the vending-machine size apparatus illustrates the output from each quarter of the cow’s teat as a glass bowl captures the “liquid gold” from six different supply lines. The computer identifies when the cow’s production is complete and tests each batch before sending it on to the bulk tank nearby.

“We never touch the milk,” Deanne Marshall says. “The computer tells us everything we need to know about the

cow and the milk.”

The dairy harvests more than 60,000 gallons of milk daily filling enormous stainless steel tanks in a nearby building.

Marshall said the goal is to fill a visiting milk tanker truck every other day which hauls the milk to a processing plant in North Carolina.

The Marshalls began building their specialized operation in 2015 and began operating it in earnest in August 2017. It took four to five weeks to “train” the cows, she said, but once the herd learned the routine, it helped model the behavior for new members.

“When a new cow comes in, they see what the others are doing and fall in,” Marshall said.

Most of the herd is home-

grown in nearby calving barns that separate new members by age range. Ultimately, they’ll end up eating, lounging and milking in the parlor across the farm.

Last month, the Marshalls welcomed county officials, business leaders and friends to an open house at the dairy, offering tours of the comprehensive operation.

Marshall was quick to credit the farm staff for the dairy’s success.

“It’s taken a few years, but we’ve gotten into a good groove,” she said. “We’ve got awesome employees who know how to avoid or fix problems. We’ve got great people here.”

And hundreds of happy looking cows.