

Breeding More Productive Holsteins

This Washington dairy uses genomic testing to build a better herd of Holsteins

BY SUSAN HARLOW

Once George DeRuyter and Sons Dairy LLC in Outlook, Washington, discovered the benefits of genomic testing and IVF, they jumped right in, using those strategies to improve their herd. And they've been willing to invest the resources to make them work and make them pay.

About two years ago, George DeRuyter, his son, Dan, and dairy manager Jeremy Waterman decided their 5,000-head dairy had reached its limit. More cows would mean more labor and more manure to deal with. "We were maxed out on the number of cows we could milk

here, so we were going to sell cows," according to Dan. "We said, let's figure out how to sell the bottom end and not our best ones."

Darren Coonrad, their Zoetis sales representative, suggested they do some genomic testing. The DeRuyters chose 25 Holstein calves to test; the results showed that nearly 50 percent of those calves were in the top half of the breed.

That information fired up DeRuyters' dairy manager, Jeremy Waterman, and he immediately began planning how to use embryo transfer and IVF to maximize the genetics of their best cows. At first, they worked with Trans Ova Genetics' lab for oocyte collection. Last fall, to avoid moving cows, they built their own small laboratory on the dairy, where they IVF every two weeks. They also assigned an employee, Jessica Wiersma, to coordinate the



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These donor heifers are from the genomic top third of the DeRuyters' herd.

collection of oocytes and manage the inventory. “I knew from the get-go that we needed someone to look at donors, recipients, scheduling, doing the right matings, and that was Jessica,” Jeremy said.

As of August, 56 calves had been born from their first round of IVF. But it will be three years before the dairy sees the first results in their milking cows, and IVF is expensive.



Dan DeRuyter in the IVF laboratory the dairy built last November.

So the DeRuyters have managed their costs from the outset. They use sexed semen rather than reverse-sort semen, saving 90 percent of the semen cost.

They also pool donors, making a unit of semen stretch farther. The DeRuyters also improved their donor selection, increasing the number of successful embryos from less than four per donor to seven per donor.

All of these management strategies have cut the IVF cost from more than \$400 to under \$200 per embryo. They made other adjustments along the way, such as improving the pregnancy rate of embryo transfers from percentages in the low 40s to close to 50 percent by training staff and improving animal nutrition.

All calves on the dairy are being genomically tested and sorted into one of three groups: donor, recipient, or cull. As the bottom end of the herd improves, these animals won't be just sent to the auction barn but sold privately or exported, generating more income. The dairy registers all donor animals and calves under 3 months; currently about 20 percent of their herd are Registered Holsteins®. Better genetics are making registration an essential piece of their operation. “We used to go to the auction and then throw away the registration papers; now we keep them,” George said.

Meanwhile, to underwrite the cost of the genetics program and make the enterprise cash flow, the DeRuyters are selling embryos. Their website, gdrholsteins.com, went live in late August. They may also partner with other area producers, by leasing the lab for oocyte collection or acquiring embryos from other farms to improve their own Holstein genetics.

Making more milk

Success hasn't distracted them from their main goal for the dairy. “We still want to produce milk,” Dan said. But genomics has made registering and selling top-notch embryos and animals much more feasible—and it is playing a large role in improving the DeRuyters' herd. “You can see that the genetics in this herd will really go through the roof. You can set yourself a destination and where you want to go—with embryos, you can go there.”

George DeRuyter began dairying in 1972 with 400 cows. He sold the herd to work in the tractor business for a while, but eight years later started farming again. Today the dairy has a rolling herd average of 27,000 pounds of milk, with 3.9 fat and 3.0 protein. Cows are housed in shaded freestalls on two sites, and milked in a double-40 parallel parlor at the DeRuyter site and a double-28 parallel at their nearby D&A Dairy. DeRuyters grow their own feed, 7,000 acres of alfalfa and corn.

How have they developed good cows? They've paid attention to the bulls they use and didn't settle for cheap semen during milk price slumps. And they relied on good advice. “I just think through the years, we've had good people,” George said. “I know a good cow but I don't know how to pick bulls.”

Components are at the top of their list (“I don't want to ship water,” Dan said), so they choose bulls for total pounds and percentage of protein and fat, followed by type. “If you have a good program, you're going to get good udders, and feet and legs anyway,” he said.

“We're all green, all learning, but it's working,” Dan said. “First, the goal is we want to better the herd. Second, we want to produce enough embryos to pay for bettering the herd. Also there's the fun of it and maybe hitting a home run.

“It's a whole new game. And who's to say we're not a 120-lb. herd in a few years? Maybe we won't be milking 10,000 cows, but if we have 5,000 cows milking like 10,000 cows....that changes your perspective.” 🐄



Andrew King, HAUSA regional sales representative, talks with Jessica Wiersma, who coordinates embryo transfer and IVF work at the dairy.