

Genomics provides solutions for on-farm challenges

Roderick family

Region: Queensland

Topic: Genomic testing

Genomic testing and genetic improvement are helping one Queensland dairy farmer reduce his annual herd replacement rate. A bonus is that it's also cutting heifer rearing costs and enhancing the health of his animals.

Paul Roderick, his parents David and Gwen, employees Steph Van Der Westen, Michael Sweetnam and Michael Turner, and casual staff (vet students from the University of Queensland Gatton campus) milk from 220 to 370 cows year-round at Harrisville, an hour south west of Brisbane.

They started genomic testing six years ago as a tool to change subjective animal retention judgements into objective, scientifically backed farm business decisions.

The DNA-testing has delivered much more than anyone had ever hoped.

It enabled the Rodericks to use genetics to solve long-

term challenges with dairy farming in Queensland, such as cost and climate pressures.

“Our herd turnover rate is about a third a year and that has a lot to do with animal health, dealing with hot weather and wet summers,” Paul said.

“If we can breed a better cow, a more functional cow, using DataGene’s Balanced Performance Index and Health Weighted Index we could see that reduce. Even if it came down by 5%, it ensures we can rear better heifers while saving money as we don’t have to rear as many.”

Retaining 10 fewer heifers each year would save the Rodericks \$20,000 – or \$2000 a heifer – in rearing costs. This helps offset the \$7,500 it costs to genomically test 150 calves a year.

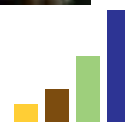
The Rodericks anticipate testing less into the future thanks to more targeted use of sexed and beef semen.

Time-saving and better decision making also delivers a return on the investment in genomic testing, although it’s not as easy to measure, according to Paul.

“Quantifying something subjective into something



Paul Roderick says the practical application of genomics over the past five to six years is justifying the investment.



that's actually scientific and accurate is difficult, but it's something that I value," he said.

"For example, we now have data about our herd so when we get bull catalogues from semen companies we work from our data, not anyone's opinion. It's a way to avoid bias and it allows us to deal across companies and different bulls because it's scientific and index based."

Using data for breeding decisions also helps Paul and his staff have clear and objective conversations about animal retention and the breeding strategy.

He said this ensured everyone was on the same page when it came to breeding. No matter who selects the bulls, they are going to meet the farm business requirements.

Stephanie Van Der Westen manages the animals from when the calves are born until they enter the milking herd.

She said the heifers that were genomic tested last year and the milking herd would be joined this year according to their genomic results.

Phasing out bobby calves

This sexed semen and beef strategy would not only help phase-out bobby calves, it is also set to improve genetic gain, Stephanie says.

The strategy includes breeding the top 25% according to their genomics twice to sexed semen and the middle 50% once to sexed semen, with the remainder to beef.

The portion of the herd bred to beef will be adjusted according to demand for dairy heifers, she explained.

For Stephanie, reducing the number of heifers reared as replacements for the dairy business saves time and money, but it also enables the redirection of funds.

"If we aren't keeping as many heifers and not as many are being bred, we have the option of not having to buy so many dairy semen straws," she said.

"This means we can invest more money into better bulls – better genetics – to breed the ones we are retaining."

Stephanie's job includes genomic testing the calves when they are sedated for disbudding. She said taking an ear notch sample was a simple process, but analysing the data required extra learning.

"With genetics in general there's a lot to get your head around," she said.

"The practical application we've seen in the past five or six years, is justifying this investment."

– Paul Roderick

"That's why field days and information sessions have been great."

Stephanie and the team at the Roderick farm use DataGene's DataVat herd software for management and the genomics software from their service provider to interpret the DNA results.

Game-changer

In the same way artificial insemination became a game-changer on-farm for his father David's generation, Paul is confident genomics will do the same for modern dairy farmers. He sees it as a long-term investment for his own business and the entire Australian dairy industry.

"There's been a significant amount of dairy farmer levy money put through genomics and this has also been done independently with world-leading scientists in the field," Paul said.

"The practical application we've seen in the past five or six years is justifying this investment."

For his own business, Paul anticipates the role of genomics in decision making and breeding direction will only increase as more data becomes available.

He's especially interested in DataGene's work on breeding for heat-tolerant cows and further investigating the Sustainability Index as a tool to reduce emissions intensity.

The Roderick farm has already adjusted its calving pattern to avoid the hotter months.

Cows mostly calve from March through to October, but Paul believes breeding for heat-tolerant animals will help them manage fluctuating weather conditions.

"We are trying to use genetics to give us a hand with the challenges we face as dairy farmers in Queensland," he said. "The early indications are that it is working. We are breeding better young animals."

"Genomics is part of our tool kit. It isn't everything, we still must get cows in calf, feed them well and everything else, but it is part of our puzzle."

CONTACT US ABN: 78 613 579 614

DataGene Limited, AgriBio, 5 Ring Road,
La Trobe University, Bundoora Victoria 3083



email: enquiries@datagene.com.au



www.datagene.com.au



T 1800 841 848



Disclaimer: DataGene is an independent and industry-owned organisation responsible for driving genetic gain and herd improvement in the Australian dairy industry and is an initiative of Dairy Australia and industry. This report is published for your information only. It is published with due care and attention to accuracy, but DataGene accepts no liability, if, for any reason, the information is inaccurate, incomplete or out of date whether negligent or otherwise. Copyright © DataGene Ltd. All Rights Reserved.

March 2023