

## Genomic data helps decisions at Kolora

**Dairy farmer: John and Kirsten Pekin**

**Region: South-west Victoria**

**Topic: Genomics**

Long before John Pekin started managing his family dairy farm, he knew milking “good” cows was a choice.

At the time, he worked in the herd improvement industry and said it was clear cut which farmers were getting the most out of their genetics.

“The farmers who put the effort into breeding better cows were getting better results,” he said.

“From that I was able to see the benefits of building a good herd genetically. The next step was increasing the amount of information about the herd.”

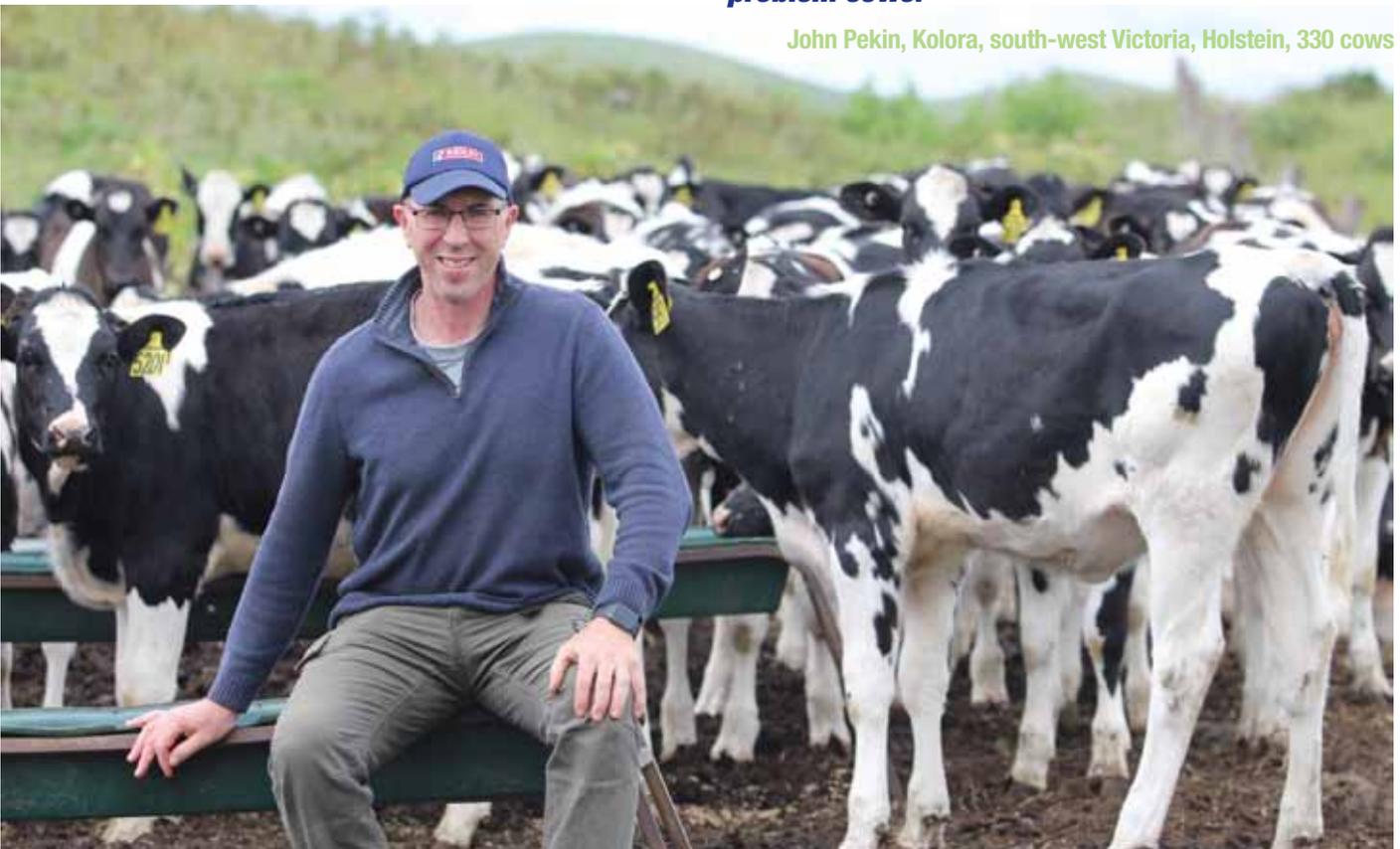
So, it’s no surprise that John and his wife Kirsten embraced genomic testing at their Kolora dairy farm to gather as much data as possible about their Holsteins.

Examining the genomic results of their heifers and cows has provided reams of information about their genetic merit for a variety of traits.

Genomics also helps them select which animals in their 330-cow milking herd to breed their replacements and those to join to beef.

***“Everyone’s aim is to get to the stage where you are doing fewer treatments on cows; this (genomics) is a way of identifying potential problem cows.”***

John Pekin, Kolora, south-west Victoria, Holstein, 330 cows



***Genomics helps John Pekin select which animals in his 330-cow Holstein milking herd to breed their replacements and those to join to beef.***



Ranked in the top 2% of Australia's 1,387 milk recording Holstein herds for Balanced Performance Index (BPI), the Pekin's Genetic Progress Report shows their rapid genetic gain.

The BPI is DataGene's economic index which reflects important business drivers on Australian dairy farms: production, health, fertility and longevity.

The BPI of the Pekins' heifers increased almost 150% during the past four years.

For example, the herd's August 2020 Genetic Progress Report showed the BPI of the cows born in 2016 was an average of 100, while those born in 2020 had an average BPI of nearly 250.

The breeding decisions driving this gain were underpinned by genomic data.

"Breeding and feeding are the two things you can control," John said. "Breeding more so; it is one of the few things on a dairy farm that you have absolute control over. A lot of things you don't have any control over, like feed to a certain extent, if it doesn't rain. You fully control what you join that cow to and what goals you have in breeding cows."

The Pekins started using genomics seven years ago, testing heifers initially, before moving on to include the entire herd over the coming years.

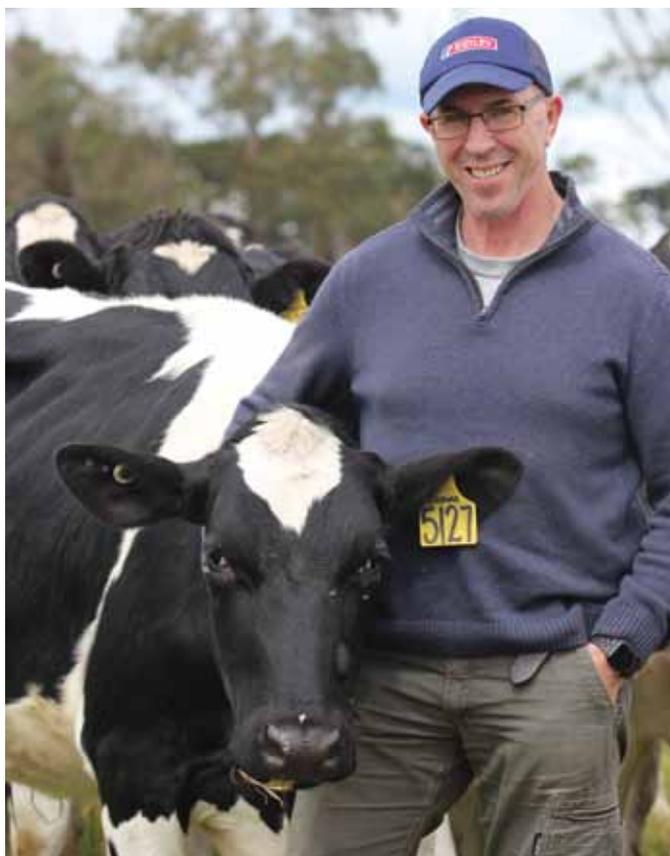
Their average BPI, across the 1304 animals they have recorded during the past 11 years, is 119.

Genomics has added an extra tool to their breeding program and has helped inform decisions.

"I use genomics to pick out the ones I am going to sell and export," John said.

Last year, John sold heifers that had a BPI of 150 or less.

He has also started to notice patterns in the genomic results throughout different generations.



*John believes improvements in health and fertility traits can help reduce costs.*

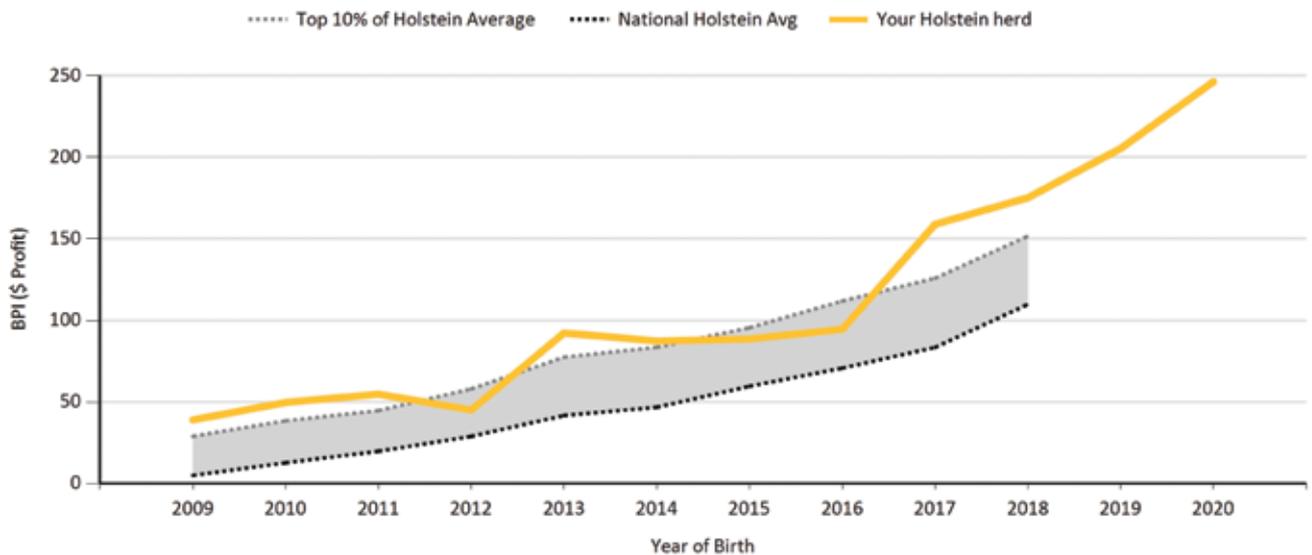
"Generally, if a cow has a low BPI, her daughter will also be low, but that is not always the case," he said. "You can get the occasional flyer and that is one of the main reasons to genomic test – to capture these heifers that are out of the ordinary, either up or down."

The Pekins use their genomic data as part of a corrective mating program.

Having genomic data available for their cows and heifers as well as bulls, ensures the best breeding match for each animal.



## Genetic Progress for Balanced Performance Index



The Genetic Progress Report of the Pekins' herd shows the impact of genomic selection since 2016: cows born in 2016 have an average BPI of 100 and those born in 2020 had an average BPI of nearly 250.

Using genomics to identify the lowest BPI animals, means they are only breeding from the top portion of their herd.

John said this delivered more breeding consistency with less "undesirable" traits which need correction with bulls.

Tissue samples are taken at the same time as calf disbudding, generally at about five to six weeks of age.

Disbudding is done by a vet while the calves are under anesthetic and given pain relief. The 'no stress' approach to disbudding and tissue sampling was not only easier than collecting tail hairs and disbudding without anesthetic, it also delivered better animal health outcomes.

John uses this opportunity to also take an ear notch as a tissue sample for genomic (DNA) testing.

The ear notch samples are sent away and the results are returned in a spreadsheet. John uses the spreadsheet to sort and rank animals for different traits, before deciding which animals to sell.

The Pekins' average herd production is about 650 kilograms of milk solids per cow per lactation, (about 300 days) with the average liveweight at about 550 kg.

Fed 2-2.5 tonnes of grain per cow per lactation, most

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John Pekin, Kolora, south west Victoria, Holstein, 330 cows

of the herd's diet consists of homegrown pasture of supplementary fodder.

Breeding focuses on daughter fertility, mastitis resistance, type, longevity, and production. The Pekins' Genetic Futures Report shows huge gains for all these traits from 2016.

John believes improvements in health and fertility traits can help reduce costs.

"There can be less semen costs, less health issues and treatments for anestrus cows," he said. "With a focus on decreasing mastitis you would need less drugs for mastitis treatment. I believe both the use of hormones and antibiotics are going to become an issue over the next five or 10 years. Everyone's aim is to get to the stage where you are doing fewer treatments on cows. This (genomics) is a way of identifying the best genetics to ensure we breed from those cows."

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