

## Genetics to help solve global dairy challenges: US expert

**G**enetics can help the dairy industry overcome social, environmental and financial challenges, a global expert told a recent herd improvement conference.

It's just a matter of embracing change.

World Wide Sires marketing manager, genetic consultant and mating specialist, Brian Albertoni, told Herd '19 in Bendigo that genetics provided important responses to threats to the future of dairy such as concern about carbon emissions, animal welfare, competition from alternative "milk" beverages as well as a need to feed a growing global population and on-farm profitability.

"Our population is exploding, by 2050 there will be 10 billion mouths to feed," he said. "That's huge growth and as the growth comes, wealth improves, so those 10 billion people want a glass of milk a hamburger. It means we have to produce 56 per cent more food than we do today. It's scary and also a little exciting."

He said since genomics was first



*Genetics has a role in addressing global dairy challenges according to Brian Albertoni from World Wide Sires in the US.*

available 10 years ago, US milk production per cow increased 12.9% per year. "We used to talk about 80:20 rule, 80% of production increases come from management and 20% genetics," Brian said. "Today, it's the 70:30 rule, where 30% of the production increase is coming from genetics. It's very exciting times for our industry."

Outside of production, the environmental impact of dairying often comes into question, especially carbon emissions from agriculture. But genetics can play a role in

explaining to consumers, and those disconnected from agriculture, how the industry is tackling this concern, Brian said.

"The truth is we are focusing on genetic efficiency, especially through feed efficiency and trying to be more sustainable," he said. "(From the perspective) of a genetic company, I've never seen such focus on bringing cow size down, some people don't like it, but it's the way it needs to be. We need to focus on bringing cow size down to be more efficient and sustainable."

### Animal welfare

Genetics can also help overcome negative perceptions about animal welfare. For example, breeding for improved fertility combined with technologies to automate heat detection will reduce the industry's use of synchronisation programs.

Brian predicted genetic selection for wellness traits would "skyrocket".

"As I travel around the world, there's more and more people wanting genetics to make healthier animals, so they don't have to use antibiotics," he said.

He also used the example of polled

More than 230 people attended Herd '19 held in Bendigo in March. Held every two years, the Herd conferences – a collaboration by Dairy Australia, DataGene and Holstein Australia – have become a 'must attend' event for people involved at all levels in herd improvement. The program features leading scientists and farmers from around the world, but equally important is the spirit of learning and collaboration among the attendees who may not otherwise meet in person very often. Proceedings are available at: [datagene.com.au/herd19](http://datagene.com.au/herd19)



genes to avoid dehorning, as a way genetics could help the public understand the desire for healthier cows with improved welfare management.

Selecting genetic wellness traits would also help save money on farm through limiting issues such as mastitis and lameness while also breeding cows which live longer.

### Benefits for consumers

Outside the cow itself, Brian said genetics could help improve milk and provide benefits for consumers. He said this would help the industry as it faces increasing market pressure from alternative beverages.

“From a genetics company we need to focus on milk that tastes better,” he said. “That’s more digestible and higher quality overall. If there’s a genetic component, we are going to try and adopt that.”

A2 milk is an example of this.

In 2016 the consumption of plant-based milk alternatives tripled in the US and for the decade prior to this there had been a 25 per cent decrease in milk consumption per person. “How did we get so blind-sided?” Brian challenged the conference.

“We must work together to promote the benefits of milk,” he said.

Genetics could also play a role in helping dairy farmers across the world manage price volatility, cut costs and run profitable businesses but he said artificial insemination companies must help farmers adapt to this new business environment as well as technology. “Adapt to thrive, not just survive,” he said.

“As an AI company we must focus on all our genetic solutions, ramp-them-up, and we must be focused on the profitability of farms,” he said.

Profitability will go “far beyond genetics”. Brian said there was a broader role AI companies could play on farm, this included helping farmers access technologies as well as manage and interpret data, e.g. feeding, reproduction and genetics.

He urged farmers to embrace genomic testing to identify their superior genetics which should become the replacements for the herd. This strategy could be combined with perhaps with beef on the lower genetic merit animals to supplement income.

“Whatever you do, you must adapt to technology quickly, its moving forward fast,” he said.

Brian challenged the audience to also think about the genetics of animals before calving.

“We need to focus on genetics that help us raise healthy calves that resist pneumonia, that resist scours and can help farmers be more profitable,” he said. “As a bonus it is great for public relations.”

On the horizon, there’s plenty of opportunity for genetics as well, for example, new genetic traits for an earlier first calving and earlier maturation.

“When you realise it costs \$2.50/day to raise a heifer, if you could just move that calving date 10 days forward, that’s a lot of money, if you are milking 500 cows, 100 cows or a thousand cows, Brian Albertoni said.

He also listed improvements in feed efficiency, research into heat stress and persistency – such as looking at peak versus late lactation production and trying to find genetics that provide a steadier curve.

“There are so many genetic opportunities we have,” he said.

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