

Genomic testing in beef heifers: Is it worth the investment?

Newsletter Article

NeXtgen Agri are setting up a Meat & Livestock Australia (MLA) Producer Demonstration Site (PDS) project focused on optimising heifer selection using genomic tools alongside phenotypic assessment. The team are excited to get this project rolling in 2026 and to answer some of the questions that have been floating around for years. One of the most common questions I get is: 'Is a \$40 genomic test on my heifers really worth the investment?'

This is a valid question, especially in an environment of tightening margins and rising operating costs. However, the real value of a genomic test comes down to how the information is used. When results guide which heifers stay, which ones go, and how you mate the group, the lift in genetic gain and lifetime productivity can be significant.

Across southern Australia, the challenge is bigger than just testing or not testing. Most commercial producers still rely almost entirely on what they can see: weight, temperament, and how a heifer looks on the day. This could mean a lot of good heifers get missed, a lot of average ones slip through, and long-term herd performance reflects that.

It's estimated that fewer than five per cent of southern beef producers are using a structured system that combines both phenotype and genomics, despite tools being readily available. When you zoom out, that's an estimated 20,000 producers affected by this gap, and the cost shows up in conception rates, first-calf losses, and lower rebreeding success.

I think part of the hesitation comes from how difficult it is to 'see' genetic gain. Improvement compounds over time, and it doesn't hit the bank account next week. So, I set out to look deeper at the evidence and unpack where the value actually comes from, and how our PDS will add to that bigger picture.

When heifers look the same

A situation I often come across is standing in the yards looking at two heifers that seem almost identical. Good temperament, sound structure, similar weight. On phenotype alone, it feels as though they're a toss of the coin. Yet, underneath the hide, they may differ. One may carry genetics for earlier puberty, higher weaning weight, better docility or stronger maternal longevity. The other may quietly cost you thousands over her lifetime through missed conceptions or lighter calves.

Structure still matters. No amount of genetic merit can fix a heifer that breaks down or doesn't last in your system. But if both heifers meet acceptable structural standards, phenotype can only take you so far. This is where genomics steps in. For roughly \$40, a genomic test provides insight into the traits you can't see, including fertility, growth and maternal ability. When you combine structural assessment with genomic information, you strengthen your decision-making and set a clearer path toward a productive breeding herd.

What does the research say?

Dairy has led the way on this. When herds in the US and New Zealand adopted genomic selection, the shift was immediate: accuracy of selection jumped, genetic gain improved in many traits, and producers could identify the heifers least likely to perform before investing years of feed and labour into them. By removing the lowest genomic animals early, herds avoided the downstream costs of poorer fertility, health and longevity. Even small improvements in these traits delivered increased value. A cow stays in the herd for multiple lactations, so every extra calf and every extra productive year stacks up fast.

Beef evidence is less abundant, but there are strong signals. One of the clearest comes from the Angus HeiferSELECT return on investment study presented by Zoetis. The modelling examined a large commercial Angus herd that had genomically tested every heifer cohort from 2015 to 2019. Even though the herd was improving genetically each year, there was still a large variation within each drop.

In 2019, they tested 750 heifers and retained the top 60 per cent while selling the bottom 40 per cent. The difference in Total Breeding Value between the kept and culled groups averaged 27 index points, with each point worth \$1.44 of maternal genetic value per calf. Over the productive life of that cohort, the superior heifers were predicted to return more than \$63,000 above the unselected group, after accounting for the cost of testing. The first year showed a negative return because the test is paid for up front. But, from the second year onwards, the benefits built as the better cows produced better calves. This illustrates how the testing itself doesn't pay, but smart use of the results does.

Genomic testing in beef herds

Cattle have long generation intervals. That means one poor decision, like keeping the wrong heifer, can have a lasting impact. Genomics provides an objective way to rank heifers for traits you simply cannot see at weaning, such as fertility, maternal function and carcass merit.

The value comes from three places. First, genomics reveals genetic variation you can't visually identify. Even heifers that look identical can differ widely at a DNA level. Second, selecting heifers with superior genetics can improve conception rates, rebreeding success, calf growth and cow longevity, which compounds across generations. Third, testing allows earlier and more confident decisions. Producers can cull early and avoid feeding, joining or carrying animals that will not perform.

Across southern Australia, this is one of the biggest gaps in herd performance. Fewer than 40 per cent of female calves are kept each year, and yet most producers are still making decisions without the genetic information that could double their confidence and lift lifetime productivity.

Bringing it all together in our PDS

Our MLA PDS will evaluate how visual assessment, weight and condition scoring, and genomic information work together to guide heifer selection. We will measure how these combined decisions affect first-cycle conception, rebreeding after the first calf, retention rates and profit per cow across her lifetime.

We expect the value to come not from the test alone, but from better decisions. Keeping fewer but better heifers. Allocating the right bulls to the right females. Reducing the long-term cost of inefficiency. Most importantly, we'll generate local, practical Australian data that helps producers answer the question, 'How do I know which heifer will actually perform?'

Genomic testing only becomes powerful when it is paired with breeding direction, good interpretation and a plan that reflects the goals of the herd. Our focus within neXtgen Agri is on helping producers build confidence with objective data, turning results into decisions, aligning heifer selection with long-term goals and reducing risk across generations.

The real question isn't, 'Is a \$40 test worth it?' It's, 'Can you afford to rely on looks alone for the next 10 years?'

If you'd like to be part of the PDS or you want to talk about how genomics could fit into your breeding program, give me a call. I'd love to work through it with you!

Further reading

- [Angus CONNECT – Return on investment for Angus HeiferSELECT](#)

Stay up to date with the project

- neXtgen Agri project site [Heifer Selection | The Hub](#) - thehub.nextgenagri.com/c/heifer-selection
- MLA's PDS project site - [PDS: Optimised heifer selection – Integrating genomic selection tools and on-farm assessments to maximise lifetime productivity | Meat & Livestock Australia](#)
- Sign up to MLA's PDS Updates eNewsletter - mla.com.au/pds

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