

Why should I breed for fertility?

Have you ever wondered if breeding for fertility is an effective way of improving herd reproductive performance? DairyNZ-led research has answered this question, finding that a cow's genetic merit has a very real impact on its ability to calve in the first six weeks.



When it comes to lifting herd reproductive performance, farmers have many tools at their disposal. Improved heat detection, body condition score monitoring, and other management changes can have a positive impact on herd repro. One tool which has perhaps been underutilised is the fertility breeding value (BV).

DairyNZ has been carrying out research into fertility genetics with Abacus Bio and breeding companies as part of the Pillars of a Sustainable Dairy System project. The project looks at how well the current fertility BV predicts individual cow performance, as well as new traits that could be measured to improve the accuracy of those predictions.

DairyNZ genetic evaluation developer Melissa Stephen says the results clearly show a cow's genetic merit for fertility does make a difference.

"And interestingly, the impact of fertility genetics can vary depending on how well the herd is performing for repro overall. We've found that daughters of higher-ranking fertility bulls are

more likely to calve within the first six weeks of calving, and this is especially true for herds with low repro success overall," says Melissa.

"That means farmers who are struggling with reproductive performance could find it valuable to specifically target bulls that rank well for fertility. This will effectively increase the rate of gain in fertility genetics within their herd, and this should have a large impact on their herd's overall reproductive performance," she says.

"In short, the more you're struggling with repro in your herd, the more benefit you'll see from selecting bulls based on their fertility. If your herd is achieving top results across the board, you may not see as much difference between your high- and low-fertility BV cows."

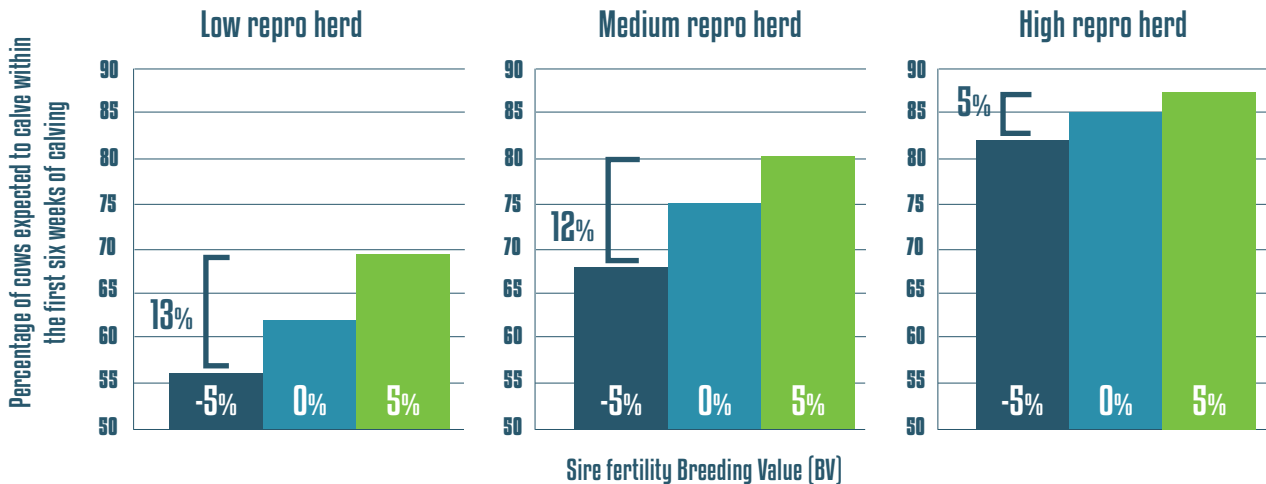
A more profitable herd

The national breeding objective is to breed cows that convert feed to profit efficiently. If we can achieve that as a sector,

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Sire impact on fertility

This graph shows that farmers struggling with herd repro will see the most benefit from using bulls that rank well for fertility.



Note: this graph has been produced using data from three-year-old cows. These results were generated by Hadyn Craig, from AbacusBio Ltd, using funds from a partnership between DairyNZ and the Ministry of Business, Innovation and Employment.

genetic gain will deliver an estimated \$3 billion in profit gains across the industry over the next 10 years, which amounts to \$250,000/herd.

Of course, having cows in calf and calving early is a vital part of part of building a more profitable and efficient national herd. That's why fertility is a key trait to consider.

New Zealand Animal Evaluation Limited (NZAE), a wholly-owned subsidiary of DairyNZ, produces a fertility BV for all dairy cows and Animal Evaluation-enrolled dairy sires. This BV provides a measure of an animal's genetic merit for fertility.

Fertility, along with protein, fat, volume, liveweight, somatic cell count, body condition score and longevity, has been identified to have a measurable economic impact on a dairy business. To help farmers achieve balanced genetic gain across these traits, NZAEL produces the bull and cow selection index Breeding Worth (BW).

BW incorporates all eight of these traits, weighting them according to their relative economic value. Fertility was incorporated into BW in 2002 and, since then, fertility genetics within the national herd have increased by around 0.1 percent each year.

Farmers who want to focus on gain in fertility genetics should target high BW bulls that also rank highly for their fertility breeding value.

How do I build a high fertility team?

DairyNZ's online bull team builder makes it easy for you to form a bull team tailored to give your herd the best genetic gains. You can benchmark your teams against the Ranking of

Active Sires (RAS) average to see how the bull team stacks up across a range of traits, including fertility.

- ➔ Go to the RAS page at dairynz.co.nz/RAS.
- ➔ Use the arrows to sort the RAS list according to the fertility BV, and 'add' the bulls which rank the highest.
- ➔ Go to the bull team builder page at dairynz.co.nz/bull-team.
- ➔ Contact the appropriate breeding companies and purchase your bull team.

If you have other traits you want to improve, simply use the arrows at the top of each column to sort by your chosen trait, and remove the low-ranking bulls you want to avoid.

Your local breeding company representative can discuss your requirements and recommend specific bulls. Get in touch with them to discuss your long-term breeding goals.

Key points



1. Fertility is a key trait to consider as the industry strives for a more profitable and efficient national herd.
2. A cow's genetic merit for fertility does have an impact on her ability to calve in the first six weeks.
3. The more you're struggling with repro in your herd, the more benefit you'll see from selecting bulls based on their fertility.