



Animals are a dairy farmer's livelihood and caring for them is their first responsibility.

Breeding for better health and welfare

Key points

- The Australian dairy industry is doing many things to improve animal health and welfare. Breeding is one of them.
- Australian Breeding Values (ABVs) are a breeding tool that can help improve animal health and welfare. There are ABVs for mastitis resistance, daughter fertility, gestation length, calving ease, heat tolerance, and survival/longevity.
- Genetic codes for polledness can be used to breed a naturally polled herd.
- Sexed semen and beef breeds are breeding tools that can be used to reduce the number of non-replacement (bobby) calves and associated welfare issues.

This fact sheet covers ways to breed for improved health and welfare. Dairy Australia's website has a comprehensive range of programs and information for managing health and welfare.

Australian dairy farmers are committed to the health and welfare of their animals. Their cows are their livelihood and caring for them is a farmer's first responsibility.

Dairy farmers use a range of management practices to ensure the health and welfare of their animals. Breeding is one of them.

Australian Breeding Values (ABVs) enable dairy farmers to identify animals with greater genetic merit for particular traits. Traits which are associated with improved health and welfare include heat tolerance, mastitis resistance, daughter fertility, gestation length, calving ease, polledness and survival/longevity.

Mastitis Resistance

Mastitis is inflammation in a cow's udder, usually caused by bacteria entering the teat canal and moving to the udder. Clinical mastitis may cause animal discomfort and affects milk production and quality.

While [management practices](#) have the most impact on mastitis in dairy herds, breeding for improved mastitis resistance has long-term benefits.

Within a herd, some cows demonstrate greater resistance to mastitis than others. The Mastitis Resistance ABV enables dairyfarmers to identify animals that are genetically less susceptible to mastitis.

To breed for improved mastitis resistance look for animals with a Mastitis Resistance ABV of greater than 100. [Read more](#)

Daughter Fertility + Gestation Length

A [tight calving pattern](#) helps align pasture growth with herd requirements and reduce the culling of late conceiving cows.

While most improvement in herd fertility comes from [improved management](#), genetic variation for fertility does exist and some bulls produce daughters that are more likely to become pregnant earlier.

The Daughter Fertility ABV identifies animals whose daughters are more likely to become pregnant within the first six weeks of mating start date. [Read more](#)

To improve Daughter Fertility, look animals with a Daughter Fertility ABV of greater than 105.

Using bulls with a shorter gestation length can reduce culling of late conceiving cows. The Gestation Length ABV identifies bulls and cows whose calves are born earlier than their expected due date.

A shorter gestation means cows calve earlier and are in-milk for more days before re-joining. This gives them more time to recover after calving.

To reduce the gestation length of this mating, choose bulls from the Good Bulls Guide with a Gestation Length ABV of less than 0. [Read more](#)

Calving Ease

Some cows calve more easily than others. First-time calvers are more likely to have calving difficulty than cows which have previously had a calf. Reducing the number of difficult calvings reduces calf mortalities and improves cow health, welfare and fertility.

Achieving [heifer growth targets](#) is an important step to setting them up for an easy first calving.

Some breeds are known to have less calving difficulties. Choosing Jersey bulls from the Good Bulls Guide is an option to reduce calving difficulties.

It's also possible to identify bulls whose calves are more likely to be born with ease, using the Calving Ease ABV. This ABV is available for almost all Holstein bulls, including young bulls.

To improve the Calving Ease from this mating, select bulls with a Calving Ease ABV of at least 103. If breeding replacements from this mating, use bulls from the Good Bull's Guide. [Read more](#)

Heat tolerance

In hot, humid conditions, cows use more energy regulating their body temperature. This can affect their comfort, feed intake, milk production, milk composition and fertility.

Dairy farmers use a variety of tools to manage hot, weather, such as providing shade, fans, water sprinklers, extra drinking water and changing the timing of milking and feeding. [Read more.](#)

Australia was the first country in the world to develop a breeding value for Heat Tolerance.

The Heat Tolerance ABV allows farmers to breed animals with greater ability to tolerate hot, humid conditions. *To breed for improved heat tolerance, look for animals with a Heat Tolerance ABV of greater than 100. [Read more](#)*

Working together

Providing the best care for dairy animals is one of four commitments in the Australian dairy industry's sustainability framework. The framework is a collaborative approach by key industry organisations: Dairy Australia, Australian Dairy Farmers, the Australian Dairy Industry Council (ADIC) and the Australian Dairy Products Federation (ADPF). [Read more](#)

About DataGene

DataGene is an independent and industry-owned organisation responsible for driving genetic gain and herd improvement in the Australian dairy industry. DataGene performs pre-competitive herd improvement functions such as genetic evaluation, herd testing and herd improvement software development and data systems. DataGene is a Dairy Australia and industry collaboration.

www.datagene.com.au Ph 1800 841 848 E: abv@datagene.com.au March 2020

Survival/Longevity

Cows that are healthy, fertile and highly productive last the longest in Australian dairy herds. The Survival ABV enables dairy farmers to breed cows that will last longer in the herd.

To breed for improved survival, look for animals with a Survival ABV of greater than 100. [Read more](#)

Naturally polled (hornless) cattle

Horned dairy cattle can cause injury to other stock and to stock handlers. Most Australian dairy farmers practice disbudding on young calves, which prevents horns from growing. Most farmers provide pain relief to [during disbudding](#) but breeding for polledness reduces the need for the procedure at all.

Virtually all bulls on today's market have been tested for their polled genes. With genomic (DNA) testing, it's now easy to identify high genetic merit (BPI) bulls which carry the polled gene. This has seen a rapid increase in the number of naturally polled, high genetic merit bulls on the Australian market.

Polled genetics are used on 26% on Australian dairy farms, according to Dairy Australia's 2019 Animal Husbandry survey. This is a big jump from 10% reported in the 2016 survey.

To breed naturally polled replacements, select animals with the genetic code POS (True Polled) or POC. (Polled Carrier) [Read more](#)

Non-replacement calves

Non-replacement calves include any calves that are not destined for the milking herd, such as male (bobby) calves, and non-AI or late-born female calves.

Sexed semen can increase the number of desirable replacement heifers while semen from beef breeds can increase the market value of remaining calves born on a dairy farm. Together, the number of non-replacement calves becomes lower.

To reduce the number of non-replacement calves, consider using sexed or beef semen over a portion of the herd.

Genomic (DNA) testing

Genomics uses DNA information to predict the genetic merit of bulls and cows. It is routinely used in genetic evaluation to calculate the Australian Breeding Values of dairy cattle.

DNA testing is usually done from a hair or tissue sample from an animal and can be done at a very young age.

Introduced in Australia in 2011, genomics has transformed genetic evaluation, enabling the development of breeding values for new traits (especially those that are difficult to measure) and increased the reliability of all ABVs.

Most dairy bulls marketed in Australia have been DNA tested and increasing numbers dairy farmers are testing females.



Breed for better health and welfare

- **Gestation Length ABV**
Look for bulls with ABV less than 0
- **Calving Ease ABV**
Look for bulls ABV at least 103
- **Mastitis ABV**
Look for bulls ABV at least 100
- **Daughter Fertility ABV**
Look for bulls ABV at least 105
- **Survival ABV**
Look for bulls ABV at least 100
- **Polled genetic code**
Look for true polled (POS) or polled carrier (POC) bulls