

Gestation Length ABV

Technote 20

HIGHLIGHTS

- The Gestation Length Australian Breeding Value (ABV) allows farmers to identify bulls with a shorter gestation length to join to cows at the end of the mating period.
- It is expressed as number of days of gestation more, or less, than an average of 0.
- To identify bulls and cows with a shorter gestation length, look for a Gestation Length ABV of less than 0.
- Every 1 ABV is about 1 day shorter gestation.
- 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 and improves fertility.

Launched in 2020, the Gestation Length ABV is an indication of an animal's influence on the number of days from conception to birth of its progeny.

Managing late calving cows

The Gestation Length ABV can help farmers manage late calving cows. It identifies animals whose calves are born earlier than their expected due date.

A shorter gestation length can help to tighten a herd's calving spread, which allows farmers to better match milk and pasture production, particularly for seasonal and split calving herds.

In a seasonal-calving herd, short gestation bulls can be used over groups of cows who are joined at the end of the mating period.

Cows that calve earlier have more time to recover and cycle before the next mating, increasing their chance of getting back in calf to AI early. For year-round herds, there are also fewer cows with long lactations, shorter average days in milk and greater opportunity for culling of genuinely low producing cows.

Natural variation for gestation length

There is natural variation in gestation length in dairy cows and bulls, making it possible to identify individuals with a shorter gestation length.

The genetic influence on the number of days a cow carries her calf is mainly through the genes of the bull she is mated to. The gestation length for Holstein cows is usually between 265 and 297 days with an average of 280 days. In an Australian study of 8000 Holstein bulls, 67% of bulls had a Gestation Length ABV +/- 2 days but some bulls were as many as 11 days shorter than average (Haile-Mariam, 2018).

In the same study Dr Haile-Mariam examined differences between countries and observed that, on average, bulls that are first tested in Denmark, the Netherlands and New Zealand have shorter Gestation Length ABVs than Australian or North American bulls. There is also variation between bulls within countries.

Breeding for gestation length

The Gestation Length ABV is expressed as the number of days of gestation more, or less, than an average of 0. Bulls with a Gestation Length ABV less than 0 have a shorter gestation length. Each ABV unit is about 1 day shorter/longer gestation length. A bull with Gestation Length ABV of -8 would expect to have calves born 4 days earlier than the expected date because half the genes come from the bull.

To reduce the gestation length of this mating, select bulls with a Gestation Length ABV less than 0. If breeding replacements from this mating, use bulls from the Good Bulls Guide with a Gestation Length ABV of less than 0.

In genomically tested females the Gestation Length ABV can also be used to identify females with a tendency for delivering calves earlier than the due date.

Reliability

Reliability is a measure of confidence in the ABVs. The higher the reliability, the closer an animal is to its true breeding value.

The reliability of the Gestation Length ABV is approximately 70% for bulls with at least 10 progeny, which is similar to other health traits such as Cell Count ABV. For bulls with 100 progeny, the reliability is expected to be about 90%.

Like all new ABVs, reliability is expected to improve with time, as more data becomes available. If placing a high priority on selecting for gestation

length, allow for its lower reliability, by using a team of bulls.

How is Gestation Length ABV calculated?

Information from both heifers and cows is used to evaluate the Gestation Length ABV. It is calculated using mating and calving information recorded by farmers. This is combined with any available genomic and traditional pedigree information to evaluate ABVs.

Bull rankings

The Gestation Length ABV is not included in the Balanced Performance Index or other Australian indices so there will be no impact on bull rankings.

Summary

The Gestation Length ABV allows farmers to identify bulls and cows whose calves will be born earlier than their expected due date. Using shorter gestation length bulls, especially in late calved cows, can increase days in milk and improve fertility by allowing the cow to have more time between calving and joining.

Every joining is an opportunity to make genetic gain. Select bulls from the Good Bulls Guide that meet your breeding objective. In situations where it is desirable to have a shorter gestation length, select Good Bulls with a Gestation Length ABV below 0.

To decrease Gestation Length in a herd, use genomic testing to select females with a Gestation Length ABV below 0.



Good Bulls

Bull choices made easy

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, data systems and herd test standards. DataGene is a Dairy Australia and industry collaboration.

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Scientific papers

Haile-Mariam, M., and Pryce, J.E. (2019) Genetic evaluation of gestation length and its use in managing calving patterns. [J. Dairy Sci](#)

More information

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