



Feed Saved ABV

Breeding for improved feed efficiency

Key points

- The Feed Saved ABV identifies animals with reduced maintenance requirements for the same amount of milk produced.
- It is included in the Balanced Performance Index (except Jersey) and Health Weighted Index so using these indices will breed for improved feed efficiency.
- The reliability of the Feed Saved ABV improved with the use of an updated model in November 2020.



To breed replacements with improved feed efficiency, select high BPI animals with a Feed Saved ABV of greater than zero.

The Feed Saved ABV allows farmers to breed cows with reduced maintenance requirements for the same amount of milk produced.

This breeding tool adds to the gains farmers have made in feed efficiency over the last 30 years through intense selection on milk production and better nutrition. Modern dairy cows have become more feed efficient in that their substantial increase in milk production has had the effect of diluting their maintenance requirements.

Feed Saved ABV

The Feed Saved ABV is expressed in kilograms of dry matter of feed saved per cow per year more or less than the average (base) of zero.

A positive number represents feed saved; a negative number represents extra feed consumed.

To improve feed efficiency in your herd, breed replacements from animals with a Feed Saved ABV greater than zero.

BPI and HWI

Feed efficiency has a significant impact on a cow's lifetime contribution to the dairy business, so the Feed Saved ABV is included in the two indices – Balanced Performance Index (BPI) and Health Weighted Index (HWI). It has a higher weighting in the HWI which can be used to fast-track genetic gain for feed efficiency.

The Jersey BPI excludes Feed Saved, reflecting differences between breed objectives (body size) and differences in the evaluation of the Feed Saved ABV.

Breed differences

The Feed Saved ABV is calculated using a prediction of maintenance requirements using ABVs for bodyweight (available on Jerseys, Guernseys, Reds and Holsteins) and residual feed intake genomic ABVs (available on only Holsteins) and is the difference between actual and predicted feed intake.

Reliability

Reliability is a measure of confidence in an ABV. The reliability of an animal's breeding values improves with age as more information becomes available, for example genomics and daughters' performance records and herd test results (see table).

Reliability (%) of Feed Saved ABV (November 2020)				
Breed	Young genomic bull	Proven bull with genotype	Young genomic heifer	3-lactation cow with genotype
Holstein	43	50	42	45
Jersey	37	49	37	41

Heritability

Heritability is a measure of how much a trait is influenced by genetics.

Genetics plays a moderate role in influencing a cow's feed efficiency which is also affected by management and environmental conditions such as nutrition.

Genetic selection for feed efficiency will make a difference. Genetic gain is permanent and compounds year on year.

Genetically related traits

Some traits are genetically related, so selecting for one trait may have an impact on another. For example, placing a strong selection pressure on breeding for larger stature may have a tendency to breed animals with lower Feed Saved ABVs.

Good Bulls

When selecting bulls for breeding replacements, look for Good Bulls. The Good Bulls icon gives breeders confidence the animal meets DataGene's minimum requirements for BPI, reliability and is available for purchase.



Breeding and feeding

Breeding for feed efficiency goes hand-in-hand with on-farm management and supports the work by nutritionists to improve feed efficiency.

The Feeding the Genes study showed that cows with higher genetic merit for production produced more milk and the cows with higher merit for survival lived longer. This was the case in all feeding systems. In fact, results suggested the benefits of using ABVs are even more significant in more intensive feeding systems and at higher production levels.

Acknowledgement

DataGene is an initiative of Dairy Australia and the herd improvement industry. DairyBio provides the research pipeline to develop and maintain Australian Breeding Values.

The updated model for the Feed Saved ABV drew upon data from the Efficient Dairy Genome Project (EDGP), an international collaboration with data from eight research herds in six countries (Australia, Canada, Denmark, Switzerland, United Kingdom and United States)

More info

[DataGene Tech Note 3 Feed Saved ABV](#)
[Feeding the Genes fact sheet](#)
[Feeding the Genes final report](#)

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