

What are EBVs?

- BREEDPLAN Estimated Breeding Values (EBVs) provide estimates of the genetic merit of an animal for a range of economically important traits.
- EBVs are expressed as the difference between an individual animal's genetics and the genetic base (historic genetic level of the population) to which the animal is compared.
- Each EBV is reported in the units in which the measurements are taken.
- On average, half of this difference will be passed on to the animal's progeny (the other half will come from the other parent).
- EBVs can only be directly compared, if calculated in the same BREEDPLAN run. Thus, EBVs cannot be compared across breeds or countries, except if an across country evaluation is done.

How to Interpret BREEDPLAN EBVs

- When considering BREEDPLAN EBVs, beef producers may:
 - Compare to the level of genetic merit within the current population
 - Compare expected difference in progeny performance
 - Consider EBV Accuracy – explanation is in a separate Tip Sheet

Compare to the level of genetic merit within the current population

- Comparing against the current levels of genetic merit allows producers to understand where an animal ranks within the evaluated population.
- Comparing each EBV against the breed average:
- This allows you to identify whether the animal is below or above the average.
- Consider an animal with a 400-Day Weight EBV of +52kg where the breed average is +35kg:
- This indicates that the animal is 17kg (52-35) genetically heavier at 400 days compared with the average
- Comparing each EBV against the percentile bands:
- This allows for the identification of where an animal ranks within the current genetic level of the population for each trait.
- For example in the table below, an EBV of +52kg for 400 Day Weight is in the top 5% of the current genetic level of the population.

Percentile Band	Calving Ease DIR (%)	Calving Ease DTRS (%)	Gestation Length (days)	Birth Weight (kg)	200 Day Growth (kg)	400 Day Weight (kg)	600 Day Weight (kg)
Top 1%	+7.1	+4.9	-7.3	-1.1	+34	+58	+85
Top 5%	+5.1	+3.5	-5.6	-0.1	+30	+52	+73
Top 10%	+4.0	+2.7	-4.8	+0.3	+28	+48	+68

Compare expected difference in progeny performance

Compare two bulls in terms of 400 Day Weight assuming that both are used over dams of similar genetic merit and breed and that their progeny are run under similar environmental conditions:

- Bull A has a 400 Day Weight EBV of +52kg
- Bull B has a 400 Day Weight EBV of +32kg
- Comparing these animals gives a difference in the 400 Day Weight EBV of 20 kg:
 - Expected difference between Bull A and Bull B = (+52kg) – (+32kg) = +20kg
- On average, half of the EBV difference will be passed on to the progeny of each sire (with the other half coming from the dam).
 - Half of the difference is passed onto the progeny = +20kg/2 = +10kg.
 - Expect the progeny of Bull A to be, on average, 10kg heavier than the progeny of Bull B at 400 days of age.

Using BREEDPLAN Information in Selection

- BREEDPLAN EBVs provide an estimate of an animal's genetic merit for a wide range of economically important traits however, they do not provide information for all of the traits that should be considered during the selection of functional cattle.
- Therefore, when making animal selection decisions, producers are encouraged to always consider BREEDPLAN information in conjunction with other traits of importance.
- These include for example pedigree, DNA test results, bull fertility results and visual assessment for structural soundness and temperament.

More Information

Scan the QR code alongside or click [here](#) for the BREEDPLAN Help Centre.



Recommended further reading (search in the BREEDPLAN Help Centre):

- What is an Estimated Breeding Value (EBV)?
- Receiving BREEDPLAN EBV Results
- Understanding EBV Accuracy
- A BREEDPLAN Guide to Interpreting EBVs (with video)
- Comparing EBVs from Different Analyses
- A BREEDPLAN Guide to Animal Selection