

Understanding Growth EBVs

Within the Australian commercial beef industry, the major determinant of the price received for an animal is live weight. Consequently, in most economic analyses, positive emphasis on increasing live weight is warranted, with higher live weights leading to higher profitability.

Interpreting Growth EBVs

BREEDPLAN currently calculates three growth EBVs – 200 Day Growth, 400 Day Weight & 600 Day Weight.

These EBVs are the best prediction of the animal's ability to grow to weaning (200-day), yearling (400 day) and later ages (600 day). 200 Day Growth EBVs are therefore important to vealer breeders, 400 Day Weight EBVs for yearling breeders and 600 Day Weight EBVs for breeders of heavy steers. These EBVs are closely linked genetically but there is some scope to select for them individually.

BREEDPLAN also calculates a Mature Cow Weight EBV. For further information regarding this EBV, please refer to other BREEDPLAN Tip Sheets.

(i) 200 Day Growth

200 Day Growth EBVs are estimates of the genetic differences between animals in live weight at 200 days of age due to their genetics for growth. 200 Day Growth EBVs are expressed in kilograms (kg).

This EBV is a measure of an animal's early growth to weaning. It is an important trait for breeders turning off animals as vealers or weaners. Larger, more positive, 200 Day Growth EBVs are generally more favourable. For example, a bull with a 200 Day Growth EBV of +30 kg would be expected to produce heavier calves at 200 days of age (or weaning) compared to a bull with a 200 Day Growth EBV of +10 kg.

(ii) 400 Day Weight

400 Day Weight EBVs are estimates of the genetic differences between animals in live weight at 400 days of age. 400 Day Weight EBVs are expressed in kilograms (kg).

This EBV is an important trait for breeders turning off animals as yearlings. Larger, more positive, 400 Day Weight EBVs are generally more favourable. For example, a bull with a 400 Day Wt EBV of +50 kg would be expected to produce heavier calves at 400 days of age (12-14 months) compared to a bull with a 400-Day Wt EBV of +30 kg.

(iii) 600 Day Weight

600 Day Weight EBVs are estimates of the genetic differences between animals in live weight at 600 days of age. 600 Day Weight EBVs are expressed in kilograms (kg).

This EBV is an important trait for breeders targeting the production of animals suited for heavy weight grass or grain fed markets. Larger, more positive, 600 Day Weight EBVs are generally more favourable. For example, a bull with a 600 Day Wt EBV of +70 kg would be expected to produce heavier calves at 600 days of age (18-20 months) compared to a bull with a 600-Day Wt EBV of +40 kg.

Of course, it is important to consider that selection on increased growth alone may result in changes to other economically important traits that may indirectly affect profitability. For example, selection for animals with increased growth may result in an increase in birth weights and subsequently more calving difficulty, or alternatively an increase in growth may increase the mature weights of your female cow herd, resulting in higher feed costs.

Recording Information for the Growth Traits

The Growth EBVs are calculated from the live weight performance of animals when they are between 80 and 900 days of age.

Within this age range, BREEDPLAN will use the age of the animal at weighing to determine whether the particular weight is used in the calculation of the 200 Day Growth, 400 Day Weight or 600 Day Weight EBV.

Trait	Age Range
200 Day Growth	80 – 300 days
400 Day Weight	301 – 500 days
600 Day Weight	501 – 900 days

The live weights of animals need to be recorded to generate Growth EBVs. Ideally, 2 – 3 weights should be recorded for each animal.

While most stud producers will be reasonably comfortable with how to record the live weights of their animals, there are a number of important considerations that should be made in order to maximise the effectiveness of the live weights that are recorded.

- ❑ Weights should be recorded to the nearest kilogram.
- ❑ Breeders should choose weighing dates that fit in with their management and are also reasonably close to when the average age of the group of calves is approximately 200, 400 or 600 days old (depending on the respective weight being taken). BREEDPLAN provides suggested weigh dates to assist you when making this decision.

- ❑ Do not submit weights for heifers that are more than 3 to 4 months pregnant at weighing, unless they are at a similar stage of pregnancy and have been pregnancy tested.
- ❑ BREEDPLAN can analyse up to two weights in each age range (ie. 2 x 200 day weights, 2 x 400 day weights & 2 x 600 day weights). Generally speaking, it is only necessary to record one weight in each age range, however in some circumstances, recording more than one weight in each age range will improve the accuracy of the Growth EBVs.
- ❑ A management group should be entered for any calf or group of calves that have either been treated differently or exposed to significant non-genetic influences since the previous weighing. For example, calves given a supplement should be recorded in a different group to those without a supplement. Consideration should also be given to variations in pasture quality, stocking rates, water quality, etc. Note that blank is a unique management group.
- ❑ To ensure the maximum number of calves are analysed in the same management group, you should try to weigh all the animals from one management group on the same day. BREEDPLAN will automatically split your management groups if you weigh on different days.
- ❑ Ideally, calves should be weighed when they are in as large a group as possible. Consequently, try to weigh calves before any of the calves in the management group are treated differently. For example, weigh before you castrate some of your bull calves or before the show team is separated out from the rest of the group.

Live weight information should be submitted directly to the BREEDPLAN office at ABRI.

The main method of submitting live weight information is by completing the BREEDPLAN “performance recording forms”. Performance recording forms will be sent to you shortly after you record your calves with your Breed Society/Association or can be requested by contacting staff at BREEDPLAN.

Alternatively, live weight information can be submitted electronically via either:

- ❑ a BREEDPLAN compatible herd recording computer program
- ❑ the performance submission facility offered on some Breed Society/Association websites
- ❑ the BREEDPLAN compatible Microsoft Excel template.

For more information regarding Growth EBVs, please contact staff at BREEDPLAN.