

## **Understanding Birth Weight EBVs**

Calving difficulty has an obvious negative impact on the profitability of a herd through increased calf and heifer mortality, slower re-breeding performance and considerable additional labour and veterinary expense.

Many large studies have shown that the level of calving difficulty in a herd is influenced by many environmental factors and several genetic factors. These genetic factors include such things as calf weight, calf shape, pelvic size and calving “will”. Of these, calf weight is by far the most important factor.

A recent analysis of over 186,000 animals on a major Breed Society database illustrated the importance of calf weight as a determinant of calving difficulty.

Calving Difficulty Score	Description	Average Birth Weight
1	No assistance	39.4 kg
2	Moderate Assistance	41.3 kg
3 - 4	Traction/Veterinary Assistance	45.1 kg

While this may be a crude analysis in scientific terms, it sends a clear message that an increase in calf weight will lead to an increase in the risk of calving difficulty.

### **Interpreting Birth Weight EBVs**

Birth Weight EBVs are estimates of genetic differences between animals in calf birth weight. Birth Weight EBVs are expressed in kilograms (kgs).

Small, or moderate, Birth Weight EBVs are more favourable. For example, a bull with a Birth Weight EBV of +2 kg would be expected to produce lighter calves at birth than a bull with a Birth Weight EBV of +6 kg, with a lower risk of a difficult birth.

Please note, whilst low Birth Weight EBVs are favoured for calving ease they are also generally associated with lower overall growth potential. This has two major consequences:

- ❑ Lower birth weight sires may cause fewer calving difficulties but they will also tend to produce calves with poorer growth to target market endpoints.
- ❑ The female progeny from lower birth weight sires will tend to grow into smaller heifers who themselves may have increased calving difficulty as two year olds.

As a result, birth weight and growth need to be carefully balanced. Fortunately, animals can be found that have both moderate Birth Weight EBVs and above average EBVs for later growth.

### **Recording Information for Birth Weight**

Birth Weight EBVs are calculated from the weights of calves taken at birth. Consequently, breeders interested in Birth Weight EBVs will need to record the birth weights for their calves.

Many different methods are currently used to record calf birth weight. These range from using bathroom scales through to the use of commercially available calf weighing cradles that can be attached to the tray of a utility or the front of a four wheel motorbike. For further advice about how to record birth weight, please contact staff at BREEDPLAN.

When recording birth weight information, it is important to keep the following points in mind:

- ❑ Birth weight should be recorded for the whole calf crop. Without comparisons to the other calves, "occasional" measurements are of no value and can actually be misleading. Recording birth weight for dead calves is particularly important.
- ❑ There are significant fluctuations in the weight of a calf over its first week of life. Therefore, it is important to weigh calves as close to birth as possible. Ideally, measure birth weight within 24 hours of birth.
- ❑ Do not guess birth weight or use girth/chest size to estimate birth weight. Either weigh the calves or don't record birth weight.
- ❑ A birth management group should be recorded if there are different treatments of the females prior to calving that may affect birth weight. For example, where one group of cows have had different feed availability. A separate birth management group should also be assigned if the weight of the calf has been affected by special circumstances (eg. premature calves, the dam was sick etc.)
- ❑ Some breeders have reportedly been injured by protective cows while weighing calves. It is important to take due care when collecting this information.

Birth weight information can either be submitted to your Breed Society/Association when submitting your calf registration details or directly to the BREEDPLAN office.

It is important to note that whilst birth weight has been shown to be the most important genetic factor influencing calving difficulty, there are also other aspects that need to be considered. For example, calf shape, pelvic area and calving "will". BREEDPLAN Calving Ease EBVs take these other contributing factors into consideration and consequently, will allow for better genetic improvement to be made for ease of calving than Birth Weight EBVs.

*For more information regarding Birth Weight EBVs, please contact staff at BREEDPLAN.*