

Weighing of Calves at Birth

Since the introduction of Breedplan many more seedstock producers have become interested in recording the birthweights of their calves to generate EBVs. Currently it is not mandatory to do this, however there are a number of important benefits in recording it:

- > Breeders may wish to use a yearling bull to mate with their yearling heifers. A high Birthweight EBV animal is unsuitable for this purpose because of his potential to leave high birthweight progeny and possibly calving problems.
- > Clients may wish to know the Birthweight EBV of the bulls they are buying, with a view to avoiding calving problems in their commercial herds.
- > Seedstock producers may use them to identify growth curve-bending sires (without birthweight information these very valuable animals cannot be identified) and to avoid using animals that are likely to raise the average Birthweight EBVs in their herds.
- > Birthweight EBVs provide useful information in predicting growth and other EBVs.
- > Birthweight is the most important component of the Calving Ease EBVs.

Birthweight is of medium, heritability (35-40%), which means that this percentage of the variation in calves' weights is controlled by the parents' genes. The other 60-65% is due to environment effects such as the level of feeding of the cow or the size of the maternal environment. At this level of heritability, significant genetic progress can be made by selecting for or against this trait. An unfortunate phenomenon associated with birthweight is that it is quite strongly related to the traits for growth. This means that if you deliberately select for low birthweights in your herd, you will inadvertently be selecting against growth rate. There are a few potentially very valuable animals, which don't conform to this relationship and they are known as 'growth curve-benders'.

There is very strong anecdotal evidence to suggest that part of the environmental influence upon birthweight can be manipulated by controlling feed to the cow for a period during the first third of pregnancy. Exactly where this window-of-opportunity lies and the treatment required to achieve it is at this point unknown. Placental size is strongly related to calf size, and placental size is established in the early stages of pregnancy. If the pregnant female's intake is restricted at this time, this will restrict placental size and hence subsequent birth size. Restricting intake in the latter period of pregnancy does not significantly reduce birthweights (unless drastic), but will leave the pregnant female in a state of diminishing bodyweight and in no condition to give birth. The other serious implication of this scenario is poor re breeding rates.

Now let's move on to physically weighing a newborn calf. I find the easiest period in which to tag and weigh a calf is between the period after the calf has been licked and is standing on its feet and before it becomes too mobile. If you try and perform this operation too soon after birth, the cow is generally over protective and you may find yourself assuming an undignified position on the ground! If on the other hand you leave it too late, you may find yourself chasing the calf around the paddock with mum in hot pursuit and in not very good humour! When handling a newborn calf I generally find that the cow is more relaxed if she can see and smell the calf. This means, whenever possible, positioning yourself on the opposite side of the calf to the cow. Always perform the tasks positively (I'm sure cows can detect when you are nervous), but gently (no violent actions or excessive noise) and don't hesitate to talk to the matron. Definitely leave the dog(s) at home! Ideally, to achieve a high degree of accuracy, the birth weight of each calf should be taken consistently at the same stage after birth,

however this is not always possible and if it cannot be achieved you should not be put off recording the trait.

There are a number of techniques used in weighing calves and I don't pretend to be aware of them all. The method, involving the recording of the calf's girth measurement, is however outlawed by Breedplan because of its inconsistent relationship with birth weight. The others involve the use of scales of one sort or another.

1. The sling and clock-face scales.

This method involves using a sling, constructed of some sort of robust fabric, with holes in it to accommodate the legs. This is fed under the belly of the calf and between its legs and each end hooked onto a set of clock-face scales. The operator then hoists the calf off the ground and records the weight of the calf. (Remember to tare the scales). This technique is possibly better suited to weighing calves from smaller breeds, unless the operator is a power lifter!

2. The sling, clock-faced scales (or electronic) and frame.

The same method as above can be used, except that the scales are attached to a frame mounted at the rear of the four-wheel motorbike, or any other vehicle. A slight variation of this technique is to use a cradle to support the calf, the cradle being permanently attached to the scales. The calf is simply lifted on and off this support mechanism.

3. Platform scales on the transport tray of a tractor.

The operator tares the scales against his/her weight and stands on these holding the calf.

4. Bathroom type scales mounted on a small platform of heavy plywood.

The same procedure is used as above. This method has the advantage over the previous one in that the equipment is much more portable and you can always position the calf between yourself and the cow. It can be 'hard on the back' if large numbers are being recorded, as you are usually required to lean forward, while holding the calf, to read the weight.

5. Portable frame with clock-face scales

(currently under development) Specifically designed for weighing calves in hill country and capable of being carried on horseback or by hand. They are user-friendly, being lightweight and 'easy on the back' and utilise leverage to lift the calf off the ground. They can equally be used on flat contour.

In Summary

- > Birth weights provide vital information for the prediction of the Birthweight, Calving Ease, 200, 400, 600-Day Growth, Carcass Weight and Mature Weight EBVs.
- > Birth weights should NOT be taken (particularly for Breedplan recording) using a girth tape.
- > Consistency, with regard to timing of weighing, will give the most meaningful results.
- > Timing of tagging and weighing will minimise any cow-personality issues experienced with these operations.
- > Birth weight alone is a poor predictor of how the animal is going to breed in this trait. The Birth weight EBV should be used instead.
- > Birth weight is the most important component of the Calving Ease EBVs.