

EASE OF CALVING

DR HELENA THERON



During calving season, most cows calve unattended and unassisted and should be allowed to calve naturally.

In the normal delivery of a calf there are three stages of labour:

- initiation and preparation for the birth which lasts from 4-24 hours,
- the passage of the calf through the birth canal, which lasts between 30 minutes and 3 hours
- and expulsion of the placenta, which can last from 12- 24 hours.

If the labour is prolonged, it is an indication

of difficulty of birth, also known as dystocia. Despite the best efforts to avoid dystocia, a small proportion of cows and especially heifers may require assistance. Early intervention minimizes the effects of dystocia. As a rule of thumb, cows should be assisted if they have not delivered the calf within 2 hours from the time the water bag appears, or if more than 30 minutes elapse without progress.

Difficult calving in a herd has a financial implication, as dystocia causes increased cow and calf losses. **Cows that had a difficult calving may have delayed return to heat, as well as lower**

conception rates. Some studies have suggested that cows that previously experienced dystocia are more likely to do so again. Although there are numerous interrelated and sometimes unknown factors that influence calving difficulty, the incidence of dystocia in a herd can be lowered by managing factors that are known to increase the incidence of difficult calving.

Factors affecting ease of calving

According to several studies, **birth weight of the calf was the trait most highly correlated with calving difficulty.** The **shape** of the calf probably plays a role in

dystocia, but it is extremely difficult to quantify. **Zebu and Sanga cows, like the Nguni, tend to have calves with lower birth weights and less dystocia when compared with European breed cows.** Researchers reported that calf growth during the last 20 percent of gestation is dramatically lower in Brahman than in European breed cows. This difference is probably due to differences in uterine blood flow and function of tissues.

Nguni cows are therefore known to be easy calving.

First-calf, two-year-old heifers are the most at risk of difficult calving, mainly because of their small body size and underdeveloped pelvis area. Smaller heifers tend to have a higher incidence of dystocia than larger heifers but the correlations are low (-.01 to .20). **It is the ratio of calf birth weight to dam weight which is the most important factor. One of the major causes of dystocia is the disproportion between the size of the calf and the pelvic opening of the dam,** especially in first-calf heifers. However, selection for increased pelvic area without some constraint on body size could possibly result in a parallel increase in birth weight and mature size and little change in calving ease. **Pelvic size should be viewed as a threshold trait and heifers with the narrowest pelvic width, (rather than pelvic area), should be culled.** It has been shown that difficulty in two-year-olds is three to four times as high as in three-year-olds.

“Nguni cows are therefore known to be easy calving”

Cows should also have an optimal body condition score of 3 to 4 to ensure an easy calving. Over conditioned cows have a higher risk of dystocia and metabolic disorders in early lactation, due to more fat lining the birth canal; where as **too thin heifers may be too weak to calve,** which is associated with weak labour, difficult calving, poor growing calves, difficulty to get into calf again and increased mortality. **If is recommended that heifers reach at least 85% of their expected mature weight at first calving.** Little is known about the effects of nutrition in early and mid-gestation, but care should also be taken not to overfeed cows in the last trimester, as this could increase calf birth weight.

Abnormal presentations of the calf accounted for 22% of dystocia and 4% of all births in one study. Twins also tend to have difficulty, mostly because of abnormal presentations. **Bull calves are more likely to cause difficult calving,** because they are generally larger and heavier than heifer calves. Gestation length is not highly correlated with dystocia but plays a role as **longer gestation length causes a higher birth weight,** which in turn increases the risk for calving difficulty.

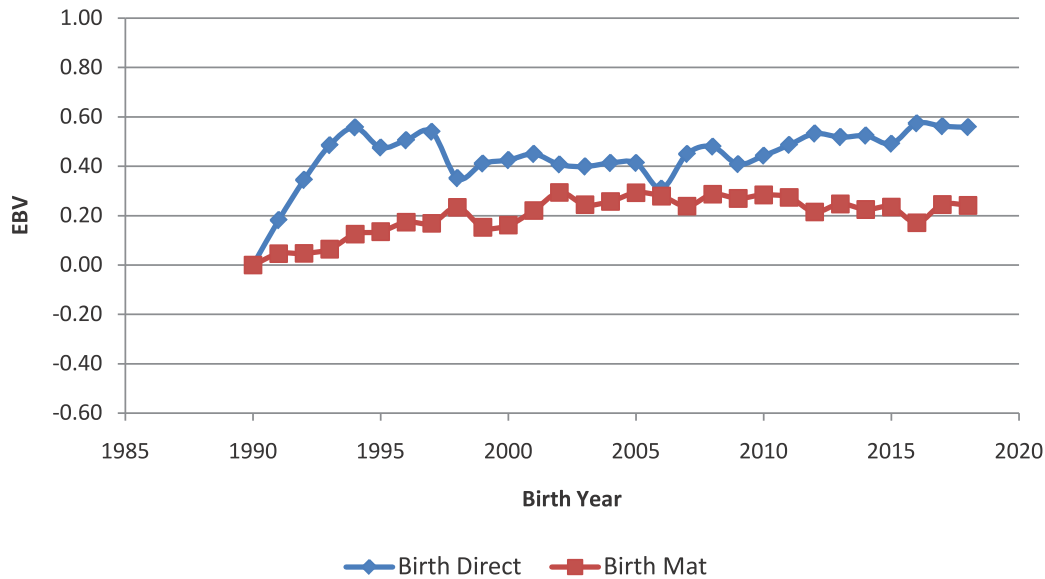
What the breeder can do:

Although difficult calving cannot be eliminated completely, breeders could manage environmental effects like birth weight of calf, age of the dam and condition of the cow.

A combination of calving heifers at three years or only selecting larger heifers to calve at two years and using bulls that sire calves with small birth weights may reduce dystocia significantly. Breeders should select bulls with low birth-weight EBVs for use on heifers while maintaining at least moderate weaning and growth EBVs.

“A combination of calving heifers at three years or only selecting larger heifers to calve at two years and using bulls that sire calves with small birth weights may reduce dystocia significantly. Breeders should select bulls with low birth-weight EBVs for use on heifers while maintaining at least moderate weaning and growth EBVs”

Figure I: Genetic trend for Birth Weight (Direct and Maternal) of Nguni Cattle



From Figure I it can be seen that the genetic trend for the Nguni for Birth Weight Direct is relatively flat, although there has been a slight increase in recent years.

Research has also shown that dams differ greatly in the growth rate of the calves they are carrying. This can be measured and selected for in the Birth Maternal breeding value EBVs for Birth Maternal indicate the ease with which a bull's daughters will calve.

Figure I shows that Birth Maternal EBVs for Nguni cattle has increased slightly, then stabilised and has been slightly lower in recent years.

Research shows that less than 50% of the total variation in dystocia can be explained by factors that can be defined or measured. It is therefore sometimes difficult to determine the reason for dystocia. **However, despite this, the Nguni is known as a dam line and is easy calving.**

REFERENCES

- Herring, W., 2014. Calving Difficulty in Beef Cattle, *University of Missouri Extension* 2014.
- Mekonnen, M and Moges, N., 2016., A Review on Dystocia in Cows. *European Journal of Biological Sciences* 8 (3): 91-100, 2016
- Ritchie, H. Peter T. Anderson, Calving Difficulty in Beef Cattle: Part I in: *Beef Cattle Handbook. Michigan State University, University of Minnesota*
- Schoeman, S.J., 1989. Recent research into the production potential of indigenous cattle with special reference to the Sanga. *S.Afr. J Anim.Sci.* 19 (2), 55.
- Statham, J., Dystocia Management. <https://www.msdevetmanual.com/>

“the Nguni is known as a dam line and is easy calving”