

The Nguni Cow as the *Ideal Dam Line* for Sustainable Beef Production in South Africa

Dr Danie Odendaal | Veterinary herd health consultant

The Nguni breed has many outstanding characteristics, such as better natural resistance to tick-borne diseases, low maintenance requirements, and quick recovery after calving. Still, one of the most sought-after traits is the ease of calving.

Adult Nguni cow with normal sloping rump for ease of calving



Ease of calving is highly essential in heifers for the survival of their first calf but also for the recovery to reconceive again within 3 months – the most critical period in beef production



EASE OF CALVING

This trait is based on two characteristics:

1. The ratio of the calf's birth weight compared to the size of the birth canal
2. The slope of the birth canal.

By natural selection, the Nguni cattle breed has developed the trait of ease of calving over hundreds of years because there was little assistance for cows that could not calve on their own. This simply meant the cows that could not calve by themselves, or their calves, did not survive, and thus, natural selection took place.

1. THE RATIO OF THE CALF'S BIRTH WEIGHT COMPARED TO THE SIZE OF THE BIRTH CANAL

The first unique characteristic is that Nguni cows can limit the size of the calf to be born. This is even seen in adult Nguni cows used in terminal crossbreeding with large-frame breeds, such as Charolais bulls.

The pure Nguni calf typically weighs 7-8% of the cow's weight at birth. Thus, the calf is relatively small at birth but very vigorous and will quickly grow into a strong calf within one to two weeks.

2. THE SLOPE OF THE BIRTH CANAL

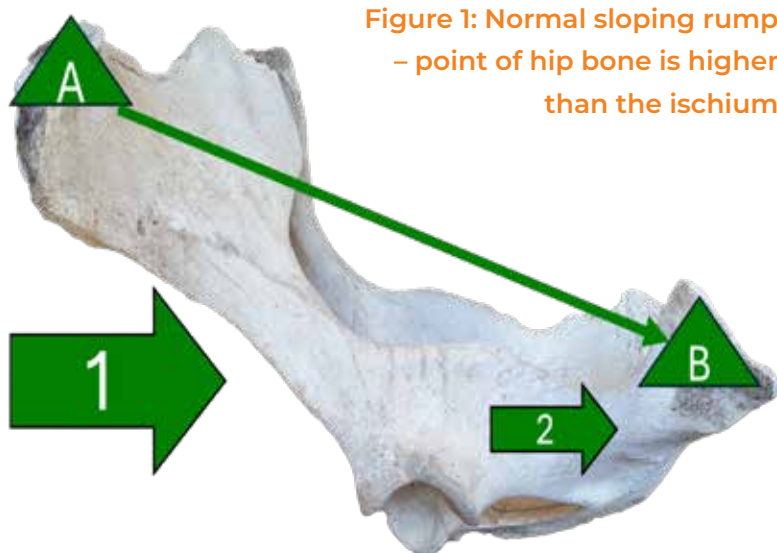
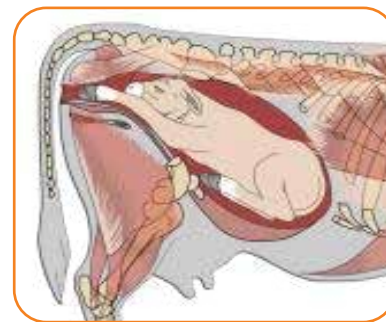


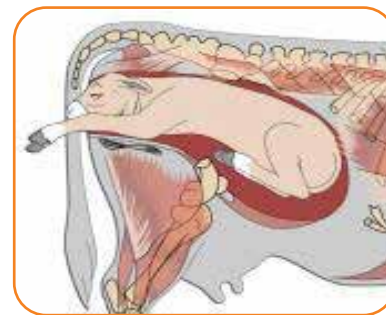
Figure 1: Normal sloping rump – point of hip bone is higher than the ischium

In nature, cows have a normal sloping rump, similar to buffalo cows which also had to give birth without assistance for thousands of years. This means that the point of the hip bone (A) is higher than the point of the ischium (B), as shown in Figure 1.

This is the regular or natural structure of the pelvis and birth canal. During Phase 1 of birth, the calf must position itself to enter the birth canal correctly for normal delivery. When the oval entrance of the birth canal is normal, the calf's movement is straight backwards into the birth canal (Fig.1 – 1).



Correct positioning and movement of the calf into the birth canal during Phase 1 of birth

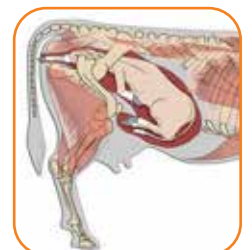


Movement of the calf in the birth canal during Phase 2 of calving – the active calving process

Because correct positioning during Phase 1 of calving is more advantageous, there are very few cases in Nguni cows where difficult births due to malpositioning occur (e.g., head turned backwards, or one or both front legs turned back). If the calf's positioning is incorrect, natural birth cannot take place, no matter how small the calf is.



Malpositioning ...
... one front leg turned back

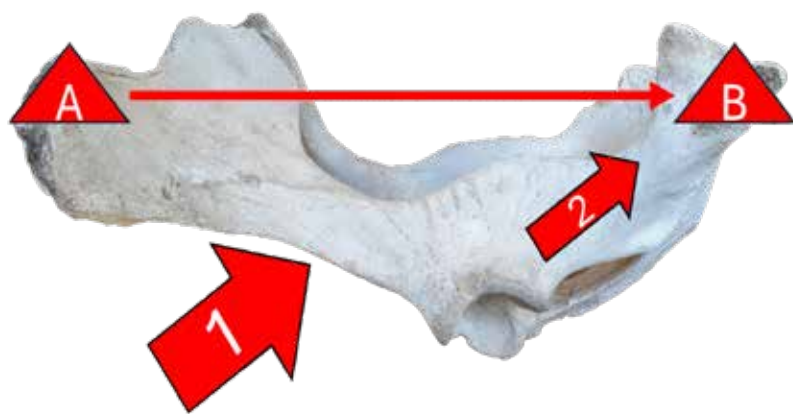


... head turned back



In cattle with a flat rump, where the point of the hip bone (A) and point of the ischium (B) are on a horizontal plane, both the entrance (1) and passage of the calf through the birth canal (2) are at an upward slope, complicating normal positioning and the birth process.

Figure 2: Flat rump - point of the hip bone (A) and point of the ischium (B) on horizontal plane



PRESERVE THE GOOD TRAITS OF NGUNI COWS

As explained in the overly simplified description of the birth process, it is clear that it is vital to apply selection to maintain a normal sloping rump in the Nguni breed as the ideal maternal line.

What happens with the selection for of larger frame

types and more musculature is a tendency for the pelvis to become more level, and the hind legs consequently to become more upright. Through selection, both changes reduce adaptability under natural grazing conditions, affecting ease of calving and mobility.

In my opinion, selecting for and maintaining a normal sloping rump is one of the traits of Nguni cows that must be preserved at all costs because these animals will continue to play a very significant role as a maternal line in extensive cattle farming conditions in the future.

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Evaluation of growth, carcass, and meat quality characteristics of grain-fed Charolais and Charolais x Nguni bulls