

Genetic revival of SA's sable antelope population

In last week's part 1, **Johan Rabie** discussed how the Gravelotte Sable Study Group stabilised South Africa's sable antelope population. In this last instalment, he discusses the group's shift of focus to the genetic improvement of the population.

The fact that the Rowland Ward record sable bull was hunted in Tshokwane in South Africa's lowveld, rather than in a neighbouring county, inspired the Gravelotte Sable Study Group (GSSG) to restore South Africa's sable antelope (*Hippotragus niger niger*) to its full former glory.

REVIVING GENETIC QUALITY

This goal to revive the sable's genetic quality includes the following objectives:

- Eliminating the average horn-length deficit of 1,1 inches (2,79cm or 2,47%) of South African trophy bulls in comparison to their Zambian counterparts.
- Developing benchmarks to guide the selection process and identify individuals of superior genetic quality.
- Breed specimens which, in all aspects, resemble that magnificent Rowland Ward record bull from Tshokwane.
- Make these quality animals available to other breeders through

live sales and auctions. Genetically superior animals obviously sell for higher average prices. For this reason, the GSSG proposes specific selection benchmarks.

BENCHMARKS FOR FEMALE APPEARANCE

The recommended external attributes for female sables deal with coat colour and the horns. Coat colour may vary from glossy light-brown, red-brown and even dark-brown to black, with a strong preference for the first two colour variations mentioned here. During pregnancy, heifers and cows become progressively darker from the front (neck area) to the back (withers and thighs). Less fertile animals tend to be lighter in colour.

There are eight points to consider when it comes to the horns:

- Horn length: In cows, this deserves far more attention, so the GSSG developed an index (see **Table 1**) to determine the relative genetic value of adult cows in relation to horn length. The index is relevant for a natural or extensive

environment where cows first calve at the age of three years or older. Under intensive conditions and improved feeding status, heifers calve earlier and more regularly, which may suppress horn length.

- Apex length: The length of the smooth apex is extremely important.

The apex is the distance between the first ring and the horn tip. Although the GSSG has no fixed recommendation, the general guideline is: the longer, the better.

- Curve: Unlike in bulls, the cow's horns shouldn't curve backwards.

Horns with a more moderate backward sweep are preferred.

- Cross-section: A thin, feminine horn with a round cross-section is preferred in heifers younger than five years.

Older animals with horns longer than 32 inches (81,3cm) tend to have oval-shaped cross-sectioned horns, which are both acceptable and preferable.

- Space between rings: The rings should be spaced as far apart as possible.

- Ring depth and definition: Shallow, smooth rings that are almost invisible from the back of the horn are preferred.

- Circumference: The preferred horn circumference for an adult is between 15cm and 17cm, measured at the base.

- Colour: Dark-coloured horns are preferred although they may become lighter with age.

BENCHMARKS FOR MALE APPEARANCE

For external attributes, sable bulls should display strong, masculine features and attitude, and coat colour should be glossy dark (auburn) to jet black. Bulls should also have evenly sized testicles and a scrotum circumference of between 22cm and 26cm (average 24cm). And the angle between the dorsal part of the bull's nose and its horn base should be as small (sharp) as possible.

As far as horns are concerned, eight characteristics should be considered:

- Horn length: Longer is better. Given the

BELOW: This group of sable females in their natural environment, display preferable physical attributes. PHOTOS: COURTESY OF JOHAN RABIE

Table 1: GSSG's proposed index for relative genetic value of adult sable cows based on horn length

Horn length (inches)	Index	Horn length (inches)	Index
24	0	31	70
25	5	32	85
26	10	33	100
27	25	34	120
28	40	35	150
29	50	36	200
30	60	37	220



availability of such bulls, GSSG's recommendation is that breeding bulls should have horns of 43 inches (109,22cm) or longer.

- **Apex length:** A strong correlation apparently exists between the length of the horn and its apex length, as animals with longer horns mostly also feature good apex length. The norm is that the distance should be at least 20cm, but preferably, it should be longer than 25cm. A long apex alone doesn't necessarily guarantee good horn length.

- **Curve:** Where the horn leaves the skull it should first go straight upwards and not curve backwards too soon.

- **Cross-section:** Exceptional horns are oval-shaped in cross-section rather than round. At the 20th ring, the horn dimensions of an adult bull should be more or less 80mm x 45mm.

- **Space between the rings:** Rings should be spaced as far apart as possible.

- **Ring depth and definition:** Rings should preferably be shallow and smooth, rather than deep and well-defined.

- **Circumference:** Avoid a horn base of less than 9,5 inches (24,13cm) or more than 11 inches (27,94cm). Of all Rowland Ward trophies, 87% have a horn base between 9



inches (22,86cm) and 10,49 inches (26,64cm). **Figure 1** illustrates the normal distribution of horn-base measurements around the value of 9,5 inches (24,13cm) to 9,99 inches (25,37).

- **Tip-to-tip measurement:** Even during the early days, GSSG members noticed that the distance between the horn tips of outstanding bulls (with horn length of 45 inches, which is 114,3cm, or longer) was further apart than that of lesser bulls.

It's aesthetically pleasing and also functionally efficient as the horn tips easily pass the sides of the animal when it lifts its head, especially during mounting. **Figures 2 and 3** show the Rowland Ward data on the tip-to-tip horn measurements.

ABOVE:

This is a good example of a breeding bull. Note the horn apex length and the distance between the horn tips.

Figure 2: Distribution of Rowland Ward trophies in relation to distance between horn tips

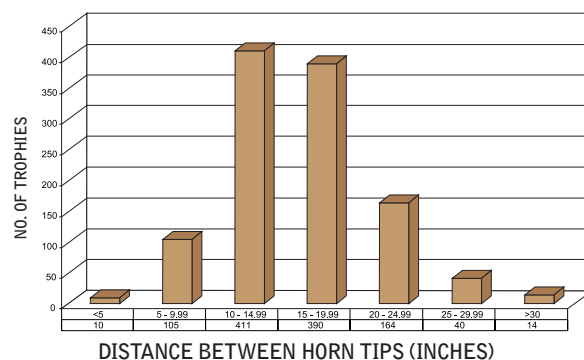
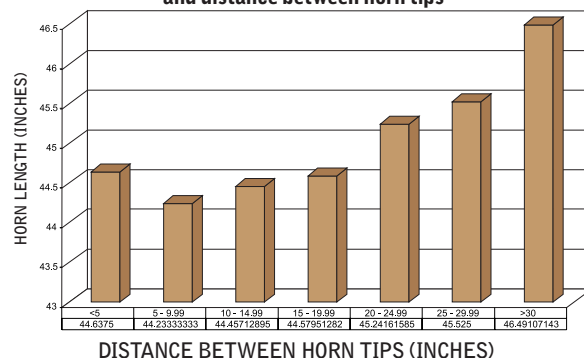


Figure 3: Relationship between horn length and distance between horn tips



A further consideration in terms of horns is the rate of growth. The above selection criteria applies mostly to adult bulls.

When selecting young bulls, the horns' growth rate up to the age of between 24 months and 28 months is crucial. The GSSG developed an index (see **Table 2**) to determine the performance and potential of young bulls.

MORE RESEARCH

This series was designed to impart information on practical, visual and measurable selection benchmarks for the serious sable antelope breeder. This criteria is not

definitive – the information is based on the GSSG's observations and experience. More empirical research is required, and new technology including DNA gene-typing will play an important role in the further genetic improvement of the sable antelope.

- **Sources:** *Rowland Ward's Records of Big Game*, 27th Edition, Volume 1, 2006; *Guide to Improved Success: Moving the South African Sable from 37' to 53' and Beyond*. Gravelotte Sable Study Group, 2010.

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Figure 1: Distribution of Rowland Ward trophies in relation to base circumference

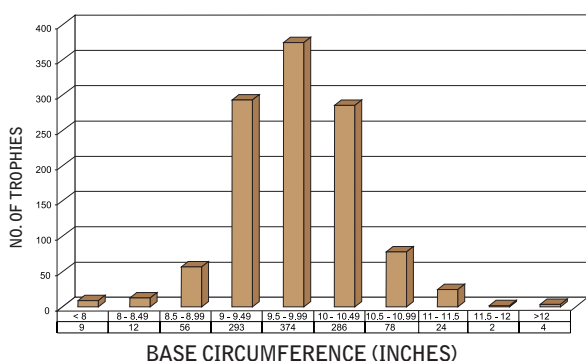


Table 2: Performance and potential of young sable bulls in terms of rate of growth

Age Days	Below-average			Average			Above-average		
	mm per day	Total min inches	Total max inches	mm Per day	Total min inches	Total max inches	mm Per day	Total min inches	Total max inches
0 to 360	0,8	—	11,3	0,9	—	13	0,95	—	13,5
361 to 540	0,9	12,8	19,1	1,0	14,2	21	1,05	14,9	22,3
541 to 900	0,8	17	28,3	0,9	19,2	32	0,95	20,2	33,7
901 to 1260	0,7	24,8	34,7	0,8	28,4	39,7	0,85	30,2	42,2
1 261 to 1 440	0,65	32,3	36,9	0,75	37,2	42,5	0,8	39,7	45,4
0 to 1 440	0,72	—	40,8	0,82	—	46	0,85	—	48,2
Adult			42			47			50