

Drakensberger Breeders' Society *Manual*

FOURTH
EDITION
-2026-



Introduction

The Drakensberger is a medium-frame beef animal with a smooth coat, strikingly long and deep body with a mild temperament. It is one of only three indigenous cattle breeds in South Africa. The breed has been bred and developed in South Africa through natural and scientifically based selection, resulting in the Drakensberger enjoying advantages over other breeds in terms of adaptability, hardiness and natural resistance against ticks and tick-borne diseases.

Information from the Agricultural Research Council's Institute for Animal Production, states that Drakensberger cows, compared to other cattle breeds in South Africa, show the lowest incidence of diseases and calf mortality. This implies trouble-free management, especially where extensive grazing practices are applied.

The aim of this guide is to equip stud breeders and commercial farmers with the necessary knowledge of the Drakensberger cattle breed as well as to explain the functioning of the breeders' society. It also explains the conditions of membership and includes a basic management programme.

Explanatory notes regarding the inspection system and the standard of excellence, estimated breeding values (EBVs) pertaining to the Drakensberger are included, while breeders can also learn more about SA Stud Book and the use of software applications such as LOGIX Beef, BeefPro and StudMaster.

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Contents

	Introduction	i
	Contact us:	ii
	List of tables	iv
	List of figures	iv
	Abbreviations	v
	Preface and Acknowledgements	vi
1.	Introduction	1
2.	Role and function of the Breeders' Society	1
3.	The origins of the Drakensberger	1
4.	Early history	2
5.	Founding of the Breeders' Society	3
6.	Distribution of Drakensbergers	3
7.	The modern Drakensberger	4
8.	The Drakensberger as maternal line	5
9.	The Drakensberger as bull	6
10.	Drakensberger in the feedlot	6
11.	Effortless management	6
12.	Stud breeding	7
13.	Breed standards	8
13.1	Standard of Excellence - Schedule C	8
14.	System of selection	14
14.1	Functional and Visual Evaluation with Disqualification Codes	16
15.	Gene pool	20
16.	Generations	21
17.	Foundation Section	21
18.	SA Stud Book and Stock Improvement Association	21
18.1	SA Stud Book	21
18.2	Animal Production Recording System	22
18.3	LOGIX Beef	22
18.4	Beef Cattle Management Software	23
18.4.1	BenguFarm	23
18.4.2	StudMaster	23
19.	The Animal Production Recording System	24
19.1	Sections of the System	24
19.1.1	Reproduction	25
19.1.2	Weaning section	25

19.1.3	Post-weaning Section	25
19.1.4	Central Growth Tests	25
19.1.5	On-the-farm tests	26
19.2	Genetic Evaluation or BLUP	27
19.3	Best Producing Cow Award – Requirements (ARC)	29
19.4	Requirements for Preference Awards to Drakensberger cows (SA Stud Book)	30
20.	Genomics	30
21.	Double muscling or Miostatin – Risks and management	31
21.1	Background	31
21.2	Double muscling - Technical information	32
21.3	Herdbook Registration	33
21.4	Embryo or Artificial Insemination (AI) Registration	33
21.5	Management guidelines	35
22.	Practical actions to be taken, which can serve as a basic management program	36
23.	Auctions	40
24.	Annexures to the handbook	43
	Annexure A: Catalogue description	44
	Annexure B: Description of Characteristics	46
	Annexure C: General Information and Contact Details	48

List of tables

Table 1: Minimum reproduction standards for cows	6
Table 2: Standard of Excellence	8
Table 3: Minimum scrotum circumference	15
Table 4: Disqualification codes	16
Table 5: Grading points explained.	20
Table 6: Merit awards for bull that passes the Society inspection	26

List of figures

Figure 1: The build of a bull	12
Figure 2: Schematic representation of the Animal Production Recording System.	24
Figure 3: Examples of markings.	38

Abbreviations

Afkorting	Beskrywing
ADA	Average Daily Gain per Age
ADG	Average Daily Gain
AFC	Age at First Calving
AI	Artificial Insemination
ARC	Agricultural Research Council
BLUP	Best Linear Unbiased Prediction
EBV	Estimated Breeding Value
ET	Embryo Transfer
FCR	Feed Conversion Ratio
HDM	Herd Designation Mark
ICP	Inter-Calving Period
LOGIX	Livestock Operational and Genetic Information Exchange
RTU	Real Time Ultrasound
SC	Scrotum Circumference
SP	Stud Book Proper

Preface and Acknowledgements

A word of welcome to the Drakensberger Cattle Breeders' Society of South Africa. The aim of this guide is to equip you with the necessary knowledge of the Drakensberger cattle breed, to explain the functioning of the breeders society and to provide you with the necessary information regarding its administration and operations. It also explains the conditions of membership and includes a basic management programme.

The information for this publication was gathered from the author's practical experience over 30 years in the cattle industry.

Sources used:

- Nature's Partner.
- Drakensberger Constitution, Schedules and Regulations.
- Minutes.
- Supplements.
- Drakensberger Newsletters.
- BLUP reports.
- The Manual for Stud Breeders (SA Stud Book).
- Drakensberger Cattle Breeders' Society web page (www.drakensbergers.co.za).

Compiled with contributions and inputs by:

- Charl Hunlun (SA Stud Book).
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An exceptional word of gratitude to Mr. Dave Eden, who served the breeders' society over many years as technical advisor, breed manager and later as consultant. He published various newsletters, articles, advertisements and pamphlets and a great deal of the information in this handbook had already been put in writing by Dave.

Magiel Blom

1. Introduction

The Drakensberger is a medium-frame beef animal with a smooth coat, strikingly long and deep body with a mild temperament. It is one of only three indigenous cattle breeds in South Africa. The breed has been bred and developed in South Africa, resulting in the Drakensberger enjoying advantages over other breeds in terms of adaptability, hardiness and natural resistance against ticks and tick-borne diseases.

2. Role and function of the Breeders' Society

The role of the Drakensberger Cattle Breeders' Society is mainly administrative of nature. The office is based in Bloemfontein and handles all administration regarding the society. A board is elected to take overall responsibility for the governance of the society's activities.

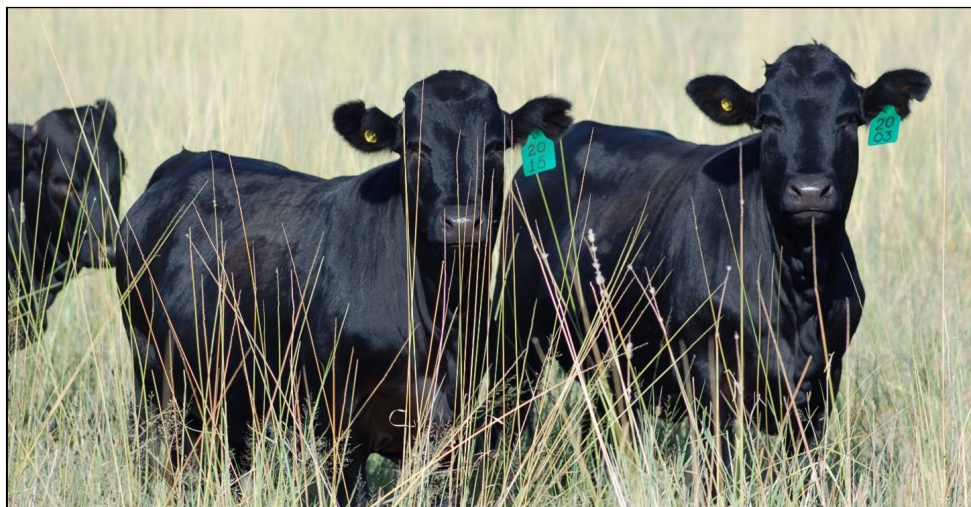
The role of the breeding society can be summarised as follows:

- Acts as agent between members and SA Stud Book.
- Promotion of the Drakensberger cattle breed.
- Protects the Drakensberger as entity.
- Member administration and enquiries.
- Arrange inspections and inspection tours.
- Training and re-training of inspectors.
- Special inspections.
- Training courses for members.
- Patrons at auctions.

The office can be contacted for any enquiries - contact details are given in the front of this handbook. Other information such as requirements for membership, cost clarification, contact details for clubs and regions as well as composition of the board etc. is contained in Annexure C of this handbook.

3. The origins of the Drakensberger

The origins of the Drakensberger can be related back to the indigenous cattle of the Khoi and other indigenous groups of the Cape and adjacent areas. As early as 2 December 1497, Vasco da Gama mentioned the "fat, black ox" that he obtained in a trade. Only after the arrival of Jan van Riebeeck in 1652, specifically under governor Willem Adriaan van der Stel (around 1700), cattle farming caught on quickly. The influence of the local residents' cattle certainly also deserves to be mentioned. After the battle of Vegkop in 1837 under guidance of Sarel Celliers, the Voortrekkers lost almost all of their cattle. Neighbouring trekkers of Thaba Nchu provided them with oxen but most animals were obtained by trading with king Mosjesj of the Basotho's (in the current Lesotho). During the battle of Umfolozi on 26 December 1838, the Trekkers recovered most of their cattle, together with a number of the local Ngunis. The influence of the local black population's cattle can therefore never be excluded from the history.



4. Early history

Over time, these black cattle became known as "Vaderlanders". Documentary evidence exist that the Voortrekkers left the Cape borders by 1837 with teams of Vaderlanders in front of their ox wagons. A specific trekker, Jacobus Johannes Uys and his son, Dirk Cornelius Uys (known as Swart Dirk, who left Grahamstown in 1838 for the current Kwa-Zulu/Natal, would later play a significant role in the development of the Drakensbergers. With methodical inbreeding and strong selection within a closed herd, Swart Dirk Uys (1814 - 1910) bred exceptional animals in the district of Wakkerstroom and Utrecht, where he chose to settle. Swart Dirk's breeding programme was continued by his son, Coenrad, and son-in-law MJ (Joey) Uys. The result thereof was a definitive breed type. These animals were later known as the Uysbees ("Uys-cattle"). Examples of Trekkers who, during the Great Trek exclusively used teams of black oxen, were the Breytenbach, Du Pisanie, Du Plessis, Maritz, Smuts, Potgieter, Spies, Van Rooyen, Engelbrecht, Jordaan, Kemp, Klopper, Koch and Prinsloo families.

Up to the discovery of gold in the Witwatersrand, these cattle were bred as trek animals. The product was an animal with a strong and big fore-quarter, while the hindquarter was predominantly light and smaller. With population growth, technological advancement and mechanisation, the emphasis moved to meat production.

The local cattle industry and developing Drakensberger cattle breed would, however, face various difficulties, of which the most important was:

- Rinderpest outbreak in 1896, killing about 746,500 head of cattle.
- The Anglo-Boer War (1899-1902), where roughly 600,000 head of cattle were slaughtered.
- The Stock Improvement Act of 1934, which did not acknowledge the Uysbeeste (Vaderlanders) as a cattle breed (state subsidy was then only paid for use of bulls from recognised cattle breeds).

Thirteen years later, a commission of the Department of Agriculture recommended in a report that the Uys cattle be acknowledged as a breed in terms of the Stock Improvement Act of 1934. Because the development of the Uys-beeste was mostly based in that area, and could be found in great numbers in the pastures of the Drakensberg mountains, it was recommended to change the name of the breed to Drakensberger.



The so-called "Tin Tin Blacks", Buys, Kemp, Landman and Brookes cattle should certainly also be mentioned due to their substantial contribution to the gene pool of the Drakensbergers.

The Drakensberger, which started out in the most difficult circumstances, today is a very popular breed and definitely a profit breed which thrives in relationship and harmony with nature. It is often forgotten that the breed dates from a time where animals had to be naturally adapted to survive. Because no dipping fluids or proven medicine were available, they had to be able to withstand flies, mosquitoes, ticks and parasite-borne diseases.

5. Founding of the Breeders' Society

The Drakensberger cattle breed was officially founded with the establishment of the South African Drakensberger Cattle Breeders' Society on 7 November 1947. With the first inspection in February 1948, 621 animals were recorded. By the end of 1954 this figure increased to 1,723 of which 73 were bulls and by 1961 there were 4,752 recorded animals. In May 1969 the Drakensberger Cattle Breeders' Society was allowed to the SA Stud Book as an Associate Member, and in 1972 as Full Member.

In 1980 the breeders' society decided to make performance testing compulsory for admission to membership. Ever since, only performance-tested animals became eligible for inspection and registration. Because the whole breed is subject to performance testing, the first analysis according to BLUP (Best Linear Unbiased Prediction) in South Africa was done on the database of the Drakensbergers.

6. Distribution of Drakensbergers

The wide distribution pattern of the breed is as a result of its outstanding ability to adapt to climatic and environmental conditions. The Drakensberger thrives on:

- Heart-water veld of the sweet bushveld.
- The snow-covered peaks of the Drakensberg mountains.
- The grassy plains of the Free State.
- The red-water and gall sickness veld of Mpumalanga and KwaZulu-Natal.
- The shrub veld of the Karoo.

- The dunes of Namibia.
- The North-West with its above average heat.
- The sub-tropical Lowveld with its ticks and heart-water.
- The cattle regions of Australia.

Drakensbergers are also found in Namibia, Swaziland, Mozambique, Zimbabwe, Botswana and even further north in the warm and humid climate of Equatorial-Guinee.



The biggest concentration of stud breeders is found in Mpumalanga, the Eastern Free State and the northern areas of KwaZulu-Natal. These are the regions in South Africa where the biggest difference in temperature throughout the year is recorded.

Looking at the distribution of commercial herds, Drakensbergers are found even more common in South Africa.

7. The modern Drakensberger

As the emphasis later moved to meat production, animals with a distinctive long and well balanced, well-muscled beef carcass were developed. The modern Drakensberger is the product of such development - brought along by strong selection and based on scientific norms.

Continuous emphasis has been placed on economically important aspects such as adaptability, fertility, strong milk production traits, longevity, growth ability, feed turnover conversion and carcass quality.



Nonetheless, appearance still ranks high and selection is done strictly according to the Standard of Excellence. The particular value of the Standard of Excellence in the development of the breed is easily recognised in the uniformity and general appearance of the Drakensberger. It has developed to a breed with noticeable genetic traits, which almost makes it a perfect cattle breed, according to the late Prof. Cas Maree (1994).

8. The Drakensberger as maternal line

The aim of Drakensberger breeders has always been to deliver optimal and effective production at the most economic levels. Without this ability, they would not be able to compete with other existing cattle breeds, especially where some Drakensberger breeders also let sheep forage together with their Drakensbergers. The Drakensberger, notably adapted to thrive on natural fodder, has an exceptional rumen volume and the ability to convert grass, even of low quality, into meat of high quality.



Female animals, the cornerstone of Drakensberger breeding, must at all times be able to utilise the feed supplies at their disposal to sustain themselves, produce competently and reproduce in extreme, variable circumstances.

As far as reproduction is concerned, female animals must be able to deliver a calf without problems and at an early age. Thereafter, she must live a long and productive life during which calves are produced at an optimal weaning weight. Breeders achieve these goals throughout from natural fodder and with minimum input. Weaning weights of 260 kg (205 days) are generally obtained in the sweet veld and 220 kg (205 days) in the sour veld. One outstanding trait of the Drakensberger cow, is her ability to recover after the winter. The aforementioned aspects have contributed to the Drakensberger developing into an excellent maternal line.

The minimum reproduction standards currently set for cows (with regard to calving), are as follows (heifers who have not calved by 39 months, are deregistered).

Table 1: Minimum reproduction standards for cows.

Cow age	Calves
3 years + 100 days	1
5 years + 100 days	2
6 years + 100 days	3
8 years + 100 days	4
9 years + 100 days	5
10 years + 100 days	6
12 years + 100 days	7

9. The Drakensberger as bull

Bulls of this breed are known for their libido and long productive lives. Because Drakensberger bulls are derived from a maternal line breed, they are ideal for use at all breeds, types and size cows. The interbreeding capacity of the Drakensberger bull must also not be underestimated, especially because the Drakensberger is not related to any cattle breed in the world.

The cow efficiency of such a herd is improved because less problems are experienced when cows calve. A Drakensberger bull, especially those ready for reproduction earlier, will also improve the so-called lean meat cattle breeds' progression to market readiness. Growth after weaning, feed conversion and carcass quality, in as far as it is determined by the bull, affects the end product: the meat. As far as this goes, the Drakensberger bull has a proven track record.

10. Drakensberger in the feedlot

Ms. Mia Niemand's Master's dissertation on "Drakensberger in the Feedlot" shows that the Drakensberger breed has no higher mortality rate than other breeds. Performance examples in the feedlot speak for themselves.

As a continuation of the completed feedlot study, a group of 916 calves was immunised with Respiravax and supplied to a feedlot. Growth was above average and mortality was 0.6%. Excellent results — and worth remembering.

A group of 250 calves was immunised with Bovishield, sponsored by Zoetis, under the supervision of Dr. Ben Potgieter from Ermelo. Mortality was 0%. All these calves were sourced from commercial herds.

11. Effortless management

Apart from displaying economically important characteristics, the breed also demonstrates other qualities that have been determined through selection, and are still being improved further.



These qualities are:

- A mild temperament.
- A low birth weight and easy calving process.
- A low incidence of abortions.
- An exceptional mother instinct and self-protection.
- Resistance against diseases, especially tick-borne diseases, due to (amongst others) a thick skin.
- Fairly good resistance against internal parasites.
- Good pigmentation, with resistance to ultraviolet radiation, photo-sensitivity and eye problems.
- Heat resistance (which can be attributed to a loose skin as well as short and shiny blue-black hair colour which reflects sunlight). Refer to a study of Ms. Liesel Foster (2008) under guidance of Prof. Frikkie Naser (UOFS).
- Resistance against ticks (reference: Ms. Liesel Foster's study and tick counts, as well as commercial breeder Mr. Zirk Wolmarans, who, over a period of 10 years, used no dipping fluids).
- Strong legs and a bone structure with hard buffalo hooves, which improves walking comfort, even on rough terrain.
- A good capacity for feed intake during grazing.

12. Stud breeding

The responsibility of the stud breeder is to improve genetic material through the focused use of breed standards, functional efficiency, performance testing and genealogical information, and to make this breeding material available to the commercial industry. It is imperative that these measures are applied correctly, not only in terms of its affordability but also to enhance the breed in question. A clear breeding policy should also include these requirements.

Stud breeders must stay on top of the latest technologies and the application thereof. Information technology is already applied widely but a lot of research opportunities exist, and rules are to be laid down, on the subject of breeding technology. AI (artificial insemination) and ET (embryo transplanting) have been applied for some time, but

more work needs to be done on ovum harvesting, in-vitro fertilisation, embryo splicing, semen and embryo sexing and cloning.

Genomics is already being applied as a tool, and several research projects have been launched using the information that is becoming available (read more about genomics under Section 19).

13. Breed standards

Breed standards, to which an animal must conform in order to be selected, are set out below.

13.1 Standard of Excellence - Schedule C

This is the minimum standard for selection according to appearance and performance. Except in the case of new Appendix Register A assumptions, cattle will not be approved if there are no performance figures available during inspection. Members are compelled under the constitution to take part in the official performance test scheme, before selection can take place.

Table 2: Standard of Excellence.

STANDARD OF EXCELLENCE		
	BULL	COW
GENERAL APPEARANCE (20 points)		
	A black coloured, well-adapted meat animal with a strikingly long and deep body.	A black coloured, well-adapted meat animal with a strikingly long body.
Purity of breed and character	Elegant, masculine head, form of eyes and head, curve and diameter of horns, placement of neck, shape of hump and shoulders, length of back and rump, coat colour and texture.	Elegant, feminine head, form of eyes and head, curve and diameter of horns, lean, refined neck and neat attachment and placement of shoulders, length of back and rump, coat colour and texture.
Build	Distinctly shaped, symmetric and uniformly fleshed. Long body, deep, wide with attractive top and underline. Comfortable free gait with long strides.	Distinctly shaped, straight, well balanced, symmetric and uniformly fleshed. Long body, relatively deep, large barrel with attractive top and underline. Comfortable free gait with long strides.
Quality	As is evident from a flexible, thick skin, hair coat and texture, strong flat bone and full, uniform meat coating.	As is evident from a flexible, thick skin, hair coat and texture, strong flat bone and full, uniform meat coating.

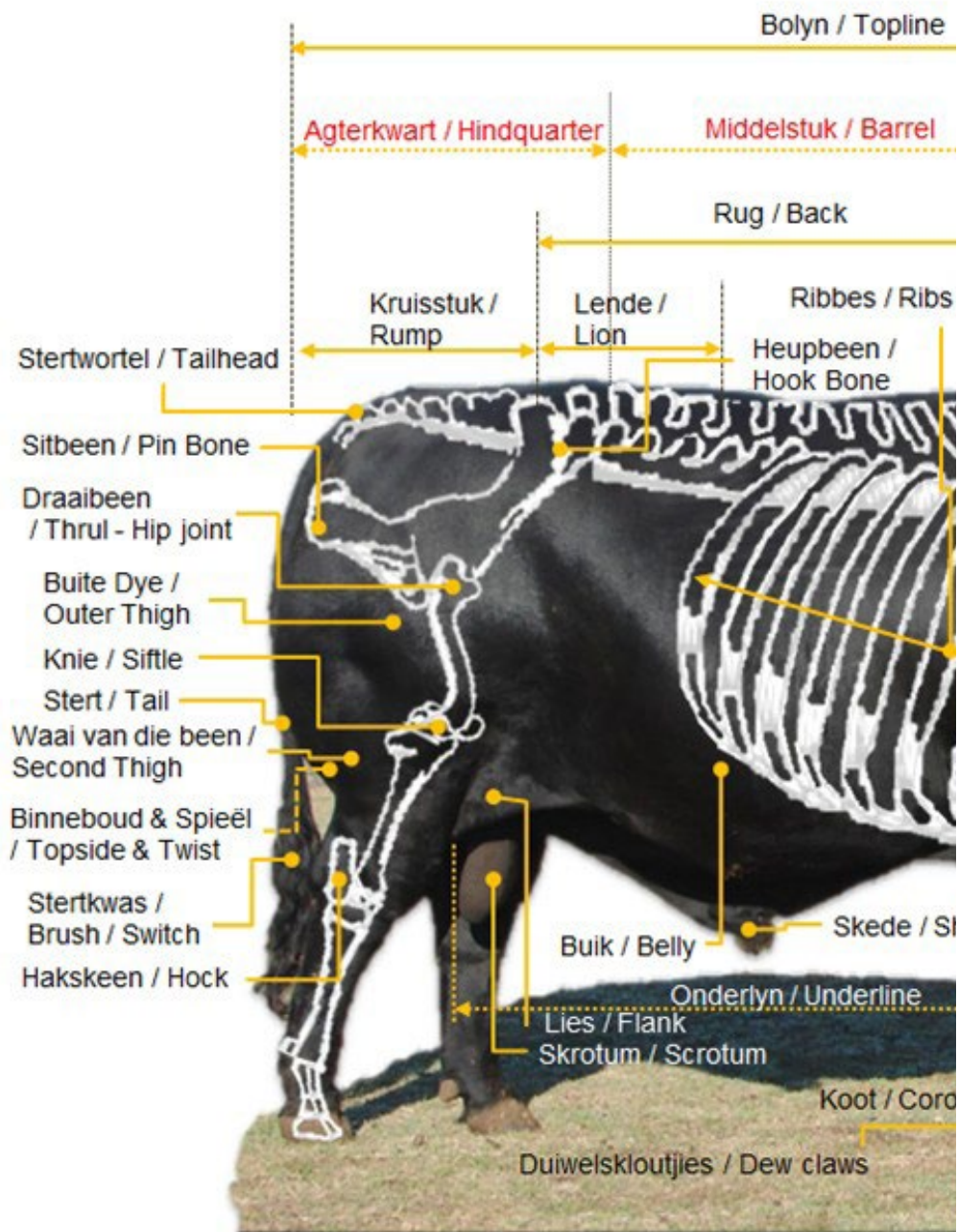
STANDARD OF EXCELLENCE		
	BULL	COW
Colour	Blue-black with the appearance of grey patches here and there on the body and grey switch. White is allowed under the belly line.	Blue-black with the appearance of grey patches here and there on the body and grey switch. White is allowed under the belly line.
MASS AND SIZE FOR AGE (3 points)		
	Adult weight not less than 800 kg. Size and mass for age based on performance test data, as provided by the official performance test scheme, is compulsory at inspection.	Size and mass for age based on performance test data, as provided by the official performance test scheme, is compulsory at inspection.
HEAD AND HORNS (10 points)		
	Strong and masculine head.	
Muzzle and snout	Muzzle broad with large black nostrils, well developed jaw.	Muzzle broad with large black nostrils, well developed jaw.
Eyes	Eyes large, alert and set wide apart, eye arches fairly prominent.	Eyes large, alert and set wide apart, eye arches fairly prominent.
Face	Moderate length from eyes to muzzle with slight constriction towards muzzle, though well filled, even and wide.	Moderate length from eyes to muzzle, though well filled, even and wide.
Forehead	Slightly short, broad, straight, flat and full both between the eyes up to below the horns.	Slightly short, broad, straight, flat and full both between the eyes up to below the horns.
Profile	Due to fairly prominent eye arches and full forehead, profile appears very slightly curved. Nasal bone flat and even, though.	Virtually a straight line, however not hollow.
Crown	Flat and wide, to fairly prominent at dehorned animals.	Flat and wide, to fairly prominent at dehorned animals.
Ears	Large, but not pointy.	Large, but not pointy.
Horns	Strong and moderately long, with black tip in mature animal. Round or very slightly oval-shaped, growing sideways, then forward and upward. Dehorned animals and naturally hornless animals are allowed.	Strong and moderately long, with black tip in mature animal. Round or very slightly oval-shaped, growing sideways, then forward and upward. Dehorned animals and naturally hornless animals are allowed.

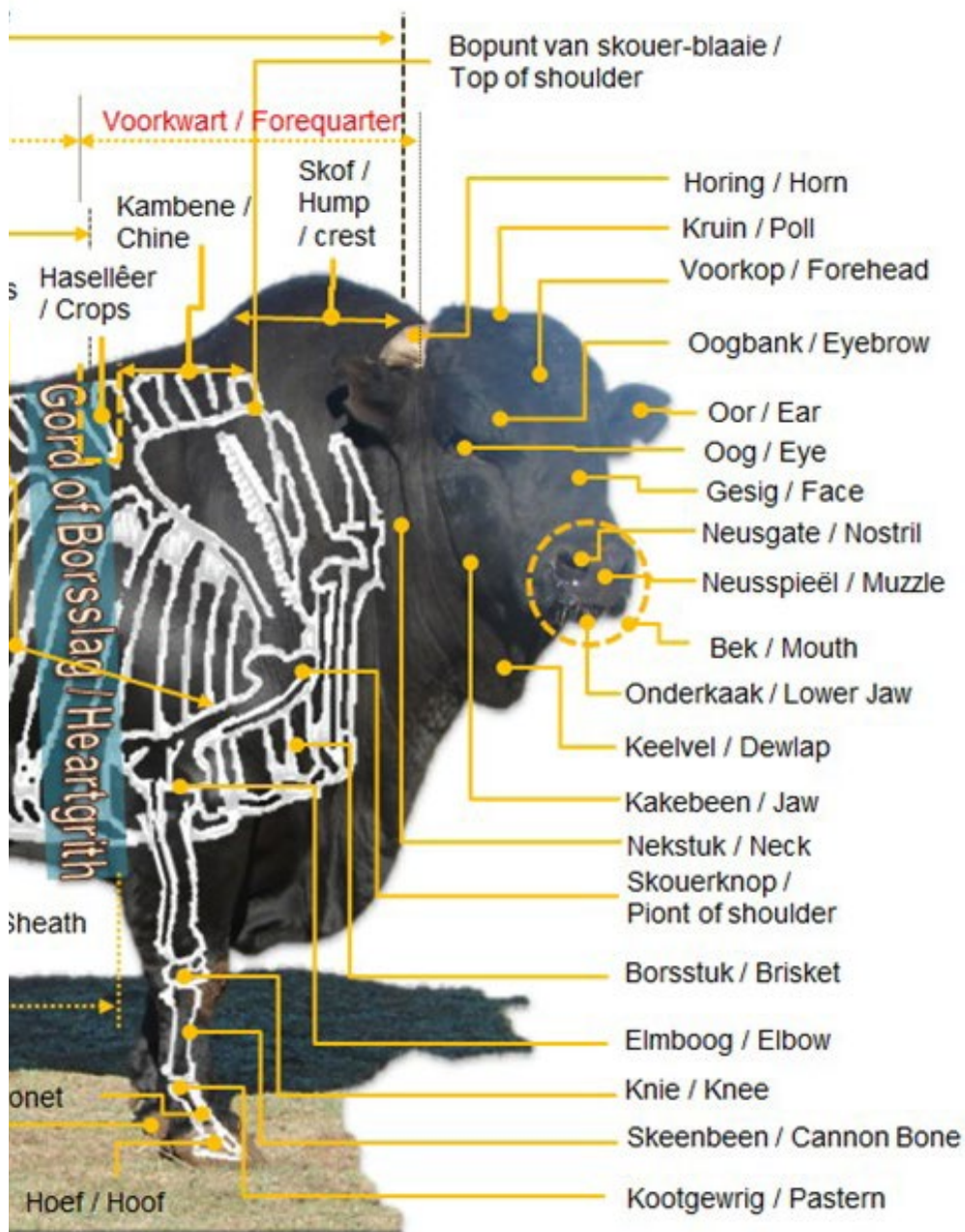
STANDARD OF EXCELLENCE		
	BULL	COW
NECK, HUMP AND DEWLAP (6 points)		
Neck	Fairly short and strong, broad and well fleshed above, deep, blending well with head and shoulders.	Fine, lean and feminine although strong and deep, blending well with head and shoulders.
Hump	Large, flat and properly attached to shoulders.	Almost no hump.
Dewlap	Uniformly and well developed. Stretching from jaw to brisket.	Uniformly and well developed. Stretching from jaw to brisket.
SHOULDERS, BRISKET, CHEST, RIBS AND BARREL (12 points)		
Shoulders	Deep, well covered and evenly fleshed. Smoothly attached to chine and ribs, not loose. Chine not prominent.	Deep, well covered and evenly fleshed. Finely attached to chine and ribs, not loose. Chine not prominent.
Brisket	Wide and fairly deep, not prominent.	Wide and fairly deep, not prominent.
Chest	Deep, wide and full in crops and well filled behind elbow.	Fairly deep, wide and full in crops and well filled behind elbow.
Ribs and Barrel	Well sprung, rounded and deep with a well developed barrel.	Well sprung, rounded and deep with a well developed barrel.
TOPLINE, BACK, LOIN, HIPS, RUMP AND TAIL (16 points)		
Top line	Good length, straight from chine to hips.	Good length, straight from chine to hips.
Back	Strikingly long, wide and evenly fleshed.	Strikingly long, wide and evenly fleshed.
Loin	Broad, full and thickly fleshed, blending smoothly into back and rump.	Broad, full and thickly fleshed, blending smoothly into back and rump.
Hips	Wide and well-covered but not too prominent.	Wide and well-covered but not too prominent.
Rump	Well filled without fat accumulation, noticeably long, wide between thurls, wide between pin bones. Good length between hip and pin bone, drooping slightly from hip to pin bone therefore slightly roof-like. Pelvic vertebrae not too prominent.	Well filled without fat accumulation, noticeably long, wide between thurls, wide between pin bones. Good length between hip and pin bone, drooping slightly from hip to pin bone therefore slightly roof-like. Pelvic vertebrae not too prominent.

STANDARD OF EXCELLENCE		
	BULL	COW
Tail	Setting rather high but not too prominent. Medium thickness, course switch, long (reaching below hocks).	Setting rather high but not too prominent. Medium thickness, course switch, long (reaching below hocks).
THIGHS, BREECH AND BUTTOCKS		
	(12 points)	(10 points)
Breech/ Thighs	Broad, deep and long, stretching well down to hocks. Not excessively rounded.	Broad, deep and long, stretching well down to hocks. Not excessively rounded.
Buttocks	Deep and full.	Deep and full.
LEGS, HOOVES AND BONE STRUCTURE (10 points)		
Legs	Strong, straight and squarely placed. Bottom shanks fairly short. Knees and hocks big and strong. Well muscled.	Strong, straight and squarely placed. Bottom shanks fairly short. Knees and hocks big and strong. Well muscled.
Hoooves	Large, hard, black and well rounded.	Large, hard, black and well rounded.
Bone Structure	Quality shown by strong, hard flat bone.	Quality shown by strong, hard flat bone.
REPRODUCTIVE ORGANS		
	(8 points)	(10 points)
	MALE ORGANS: Equally shaped, well developed and equally sized testicles with minimum scrotum circumference according to minimum standards.	UDDER: Large, flexible, long udder carried well forward and well up behind. Not fleshy or pendulous. Large, branched milk veins.
	SHEATH: Not excessively developed.	TEATS: Of medium length, placed squarely, far apart. White teats allowed.
SKIN AND HAIR (3 points)		
Skin	Thick, loose and pliable.	Loose and pliable.
Hair	Blue-black hair of medium length and fineness. Straight and shiny, coarser on neck and head.	Blue-black hair of medium length and fineness. Straight and shiny.

The build of a bull

(Figure 1)





14. System of selection

All animals are inspected in accordance with the above-mentioned Standard of Excellence (see Table 8). Performance figures are also used at inspection and will be discussed later. Inspections are done annually during March/April, by trained selection officials (inspectors). Applications are sent to members in December annually, and they must then apply for inspection before a pre-determined date, with the deposit payable. The inspection panel rotates every year, and it is therefore not very likely that the same selection panel will repeatedly do an inspection at the same member. At least two inspectors will be present at all times during an inspection, with at least one serving as a senior inspector and tour leader, who must also be an active breeder.

To become an inspector, the first step is to pass a course for learner-inspectors. Thereafter, the learner-inspector must complete 3 (three) inspection tours together with two other inspectors, and after each inspection tour the senior inspector must submit a positive report of the learner inspector. Based on these positive reports, the Council may invite the candidate for final evaluation as a Junior Inspector. This will consist of a theoretical examination and a practical session. The council may then grant promotion to junior assessor, after which another 3 (three) inspection tours must be completed in the company of two other inspectors, one of whom must be a Senior Inspector and tour leader. After each inspection tour, a positive report by the senior inspector must be submitted and the process of selector evaluation will be repeated after which the council may promote the junior inspector to senior inspector.

A refresher course for all inspectors is held annually during January/February. It is compulsory and only inspectors who attended the course, will serve on the panel of inspectors for that year. The year's inspection tours are also set out here and inspectors appointed for the tours. The annual inspection cost is calculated by the total kilometers travelled by all inspectors, multiplied by the travel tariff plus accommodation costs and other possible costs, divided by the number of animals assessed, plus an administrative fee. Your inspection fee will therefore be tariff per animal multiplied by number of animals assessed plus VAT. Invoicing is done after completion of the inspection tours. The deposit will be subtracted from the amount due. All Appendix Stud Book A female animals that are inspected after 1 July 2016, and that are not direct descendants of

other registered animals, will be exempt from the Society's annual per capita levies. This is an effort to expand our gene pool. However, the offspring of these animals will be subject to levies.

Special inspections are also done throughout the year for members who concluded post-weaning growth tests. The first inspection for new members with new cattle is free of charge. For all other special inspections, the



travel- and accommodation costs of the inspectors for the previous year are applicable plus an administrative fee per animal assessed. Female animals, except for new animal from new breeders (first inspection) are subject to the inspection fee of the preceding year if they are assessed at special inspection occasions. The inspectors' claims are sent to the office, after which the member is invoiced. Application for inspection is to be done at least 14 (fourteen) days before the planned inspection, in order for inspectors to be appointed. Inspections are then done according to the Standard of Excellence. All applications for the inspection of First Acceptances or Appendix Stud Book A animals must be accompanied by a breeding history of the animals. Polled animals may be presented as First Acceptances. Regulations have been established and are discussed under point 15.

If calves produced from a homozygous polled bull are presented and accepted for inspection, the paternity of the calf must be confirmed. If the cow is a carrier of the "Celtic" gene, the maternity must be genetically confirmed by an accredited laboratory approved by the Society.

Performance figures are applied as follows during inspection: For reproduction/suckling and post-weaning sections, all animals should have a weaning index and a 12 and/or 18 month index, and the average of the 2 or 3 indices should be above 90. For central growth tests the weaning index, ADG and FCR are used and for on-the-farm tests, the weaning index and the ADG are used. The average of these indices must be above 90. Only one index below 90% is allowable during selection. For visually exceptional animals there is an exception rule.

- Bulls must achieve at least 70% of the total pointing score.
- Female animals must achieve at least 60% of the total pointing score.
- At least 50% of a sub-section of the standard must be achieved by both bulls and female animals.

Table 3: Minimum scrotum circumference.

Weight	Minimum scrotum circumference
300 to 349 kg	28 cm
350 to 399 kg	29 cm
400 to 449 kg	30 cm
450 to 499 kg	31 cm
500 to 549 kg	32 cm
550 to 599 kg	33 cm
600 kg +	34 cm
600 kg +	35 cm

Corrected SC 30.5 cm (at standard weight of 400 kg).

(Please note that research is currently being conducted regarding scrotal circumference and semen volume, and this table may therefore be subject to change.)

14.1 Functional and Visual Evaluation with Disqualification Codes

Emphasis is placed on the function of the animal, and the type. Animals with hereditary defects or with shortcomings significantly impairing the function (in the opinion of the inspector) will be rejected.

Table 4: Disqualification codes.

Section	Code	Disqualification (animal is rejected)	Discrimination leading to disqualification
General Ap- pearance	A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16	Off type. Poor muscling. Too flat. Pony-type (dwarfism). Too big. Lack of body depth. Lack of body length. Poor weight for age. Poor balance (L:H). Poor balance (fore- : hindquar- ter). Poor constitution or poorly adapted. Abnormal gait. Defective skin / (Dermato- sparaxis). Double muscling.	Pony-type (dwarfism) or too big. Bone structure too coarse. Bone structure too fine. Poor muscling.
Perfor- mance	B1 B2 B3 B4	Slaughter clause. Average of indices below 90. Has not calved at 39 months. If not re-calved within 790 days.	
Colour	C1 C2 C3	White above belly line. Whole white switch. Red (red hair or reddish shine).	

Section	Code	Disqualification (animal is rejected)	Discrimination leading to disqualification
	C4	Tawny, white or speckled above belly line.	
Hair	D1	Woolly coat.	Long hair.
	D2	Long, curly hair.	
Masculinity / Femininity	E1	Lack of femininity (female animals).	Ox-like.
	E2		
	E3	Lack of masculinity (male animals).	
Temperament	F1	Wild.	
Head and Horns	G1	Not typical (off type).	Fine or pointed muzzle. Lion chin. Compact or excessively long head.
	G2	Skew face.	
	G3	Skew muzzle.	
	G4	Undershot jaw (parrot-like).	
	G5	Overshot jaw (fish-like).	
	G6	Light lower jaw.	
	G7	Exaggerated short head.	
	G8	Poor eyebrow-ridge.	
	G9	Head too small and/or too long.	
	G10	Hollow head.	
	G11	Flat horns.	
	G12	Loose horns.	
Fore-quarter	H1	Loose shoulders.	
	H2	Over-developed breastbone (heifers).	
	H3	Falls away behind crops (pinched).	
	H4	Roofy shoulders.	

Section	Code	Disqualification (animal is rejected)	Discrimination leading to disqualification
Centre	I1 I2 I3 I4	Weak or hollow back. Curved back. Hunched back. Devil's grip.	Hollow back. Flat centre (as seen from behind). Lack of depth.
Hind-quarter	J1 J2 J3 J4 J5 J6 J7 J8 J9	Poor loin muscling. Narrow pin bones. Excessively rounded buttocks. Flat thighs. Cut up high between hind legs. Prominent hip bones.	Hanging rump. Roofy rump. Flat rump. Weak pelvis.
Legs and Hooves: Front Legs	K1 K2 K3 K4 K5 K6	Stag knees. Duck feet. Knees bent backward.	X-legged. Pigeon-toed. Bandy legs.
Legs and Hooves: Hind Legs	L1 L2 L3 L4	Too sickle-hocked. Too cow-hocked.	Too sickle-hocked. Too upright-hocked. Bandy legs.
Legs and Hooves: Pastern Joints	M1 M2 M3 M4 M5	Pasterns step through. Sagging pasterns. Bent/twisted pasterns. Laminitis.	Pasterns too upright.

Section	Code	Disqualification (animal is rejected)	Discrimination leading to disqualification
Legs and Hooves: Claws	N1 N2 N3 N4 N5 N6	Outgrowing claws. Claws curling inwards. Lack of depth in heel. Absence of by-claws.	Claws differ in size. Claws too cloven (cleft too wide).
Tail	O1 O2 O3	Prominent tail setting (baboon tail). Skew tail. Congenital kink in upper third of tail.	Prominent tail setting.
Male Re- productive Organs: Scrotum and Testes	P1 P2 P3 P4 P5 P6 P7	Size (refer to schedules). Testicles twisted excessively. Absence of epididymis. Hypoplastic. Cryptorchidism (undescended testicles). Deformed testicles.	Long, pendulous scrotum. Twisted strings.
Male Re- productive Organs: Sheath	Q1 Q2 Q3	Perpetual prolapse.	Long sheath above sheath opening. Fleshy sheath.
Female Re- productive Organs	R1 R2	Underdeveloped. Horizontal inclination.	Infantile vulva.
Female Re- productive Organs: Udder and Teats	S1 S2 S3	Bottle teats. Absence of teats (one or more).	Poorly developed udder. Small teats. Hereditary unbalanced udder. Deformed teats.
Other rea- sons	T1 T2	Please specify. Rejected by owner.	

Section	Code	Disqualification (animal is rejected)	Discrimination leading to disqualification
Deviations not listed	U1	Chronic bloating.	
	U2	Weak constitution.	
	U3	Any other hereditary factors.	

A grey patch or birth patch is a black, pigmented hide with black and white hair.

Points scored are as follows:

Table 5 : Grading points explained.

Points	Class	Male	Female
95+	1+	Minimum bulls	
90-94	1		
85-89	1-		
80-84	2+		
75-79	2		
70-74	2-		
65-69	3+	Rejected	Minimum female
60-64	3		
< 60	3-		Rejected

All animals that pass the inspection must be branded with a “D” on the left shoulder-blade.

15. Gene pool

The gene pool of the Drakensberger is not limited to the stud industry, because with our system of an “open book”, new animals can be brought in from commercial herds as Appendix Register A animals. Cattle selected as Appendix Register A must be at least 15 months old when they are selected. A full history of the animals (in writing) must accompany the application for inspection. These animals must comply with the inspection requirements as mentioned except performance figures. Male animals presented as Appendix Stud Book A must, from 1 January 2023,



already have a genomic report and fall within 87.5% or more of the Drakensberger cluster. Only bulls scoring above 80 points will be accepted as Appendix Stud Book A.

They also receive a “D” on the left shoulder-blade. Certification of graded herds is also possible, after certain requirements are met, and they receive a “DK” on the right shoulder-blade. Animals will only be registered as polled if genetic confirmation is available. The polled gene must be confirmed, and the presence of heterozygous or homozygous status must be indicated on the results.

16. Generations

Appendix Register animals A X A or B or SP = B
 B X B or SP = SP
 SP X B or SP = SP

The progeny is always one higher than the lowest parent.

17. Foundation Section

All progeny from multiple-sire matings are recorded in this section. Once paternity has been determined by means of DNA testing, the animals will be entered into the correct sections of the herd book.

Any other animal may be entered into the Foundation Section with the approval of the Council, and the animal may participate in a growth test. After completion of the growth test and successful inspection, the animals will be recorded in the Appendix Stud Book A section.

Animals must be inspected before reaching three years of age. All rejected animals and animals older than three years will be removed from the Foundation Section after the annual inspection tours.

Annual fees will be levied on animals in the Foundation Section older than 12 months. However, animals with no linkage to registered parents will be exempt.

18. SA Stud Book and Stock Improvement Association

18.1 SA Stud Book

The SA Stud Book is a registering authority. It is owned and managed by its members and is also responsible for its own funding. The breeders' society has direct connections with the stud book. Stud Book keeps the genealogical registers of all our animals up to date. All birth notifications are sent to the stud book for recording. Breeders then receive a birth notification certificate and after the animal has been graded, a registration certificate is issued. Transfers and cancellations are also done here, as well as compilation of auction catalogues.

SA Stud Book is also responsible for the management, development and maintenance



of the stock improvement database for the Animal Production Recording System, which contains more than 50 million animal records. By 2005 SA Stud Book celebrated its 100th year and enjoyed the support of 63 breeders societies and around 5,000 breeders with 520,000 animals.

(Source: Manual for Stud Breeders of SA Stud Book and Animal Improvement Association).

18.2 Animal Production Recording System

The Production Recording System is a collection of databases and programmes addressing the need for animal recording. This system has been privatised since 1 January 2012. SA Stud Book manages the system and is also responsible for the further development of the system. The respective sections are Logix Beef, Logix Milk, Logix Pigs and Logix Small Stock.

18.3 LOGIX Beef

LOGIX Beef (Livestock Operational and Genetic Information Exchange) is the internet portal to data on the SA Stud Book Animal Production Recording System. The aim of Logix Beef is to offer information and data exchange functionality to its various users. Every member of the breeders' society who has internet access, also has access to Logix Beef. It is currently offered free of charge. Information on all members' animals is captured on this system. In 2009 the annual general meeting of the breeders' society gave permission for opening the system so that all members have access to certain information of co-breeders' animals. This system allows enquiries, reports, recording of births and production data online as well as downloading animal information. Receipt of any births or production data will be acknowledged by means of an e-mail message. Processed data can also be forwarded to members via e-mail. Application for registration

as a Logix Beef user can be done by downloading an application form from www.logix.org.za. The use of Logix-Meat is free of charge. A new development is sabeefbulls.com, which can be used to plan matings and to select bulls that meet specific criteria.

18.4 Beef Cattle Management Software

A number of software packages are available that are aimed at making the recording and management of beef cattle herds easier and more efficient. Examples of such packages are BenguFarm and StudMaster (short description of each follows below).

18.4.1 BenguFarm

BenguFarm is a professional beef cattle management software package developed to make the recording, administration, performance testing, selection, registration, breeding and general management of beef cattle herds easier and more efficient. The program has been specifically developed to satisfy the needs of the South African stud breeder and commercial producer, but to also meet the requirements of most, if not all, farmers. It is a joint project of the Agricultural Research Council (ARC) and a private software house, BenguelaSoft cc. BenguFarm is endorsed by the Drakensberger- and 18 other breeders societies. With BenguFarm, recording all aspects of a herd is easy and all documents (for example, matings, births, weights for performance testing, transfers, cancellations and growth tests) can be sent to SA Stud Book electronically via e-mail from the programme, for inclusion and processing on the Animal Production Recording System.

For more information, visit www.bengufarm.co.za or contact Mr. Leslie Bergh at bengufarm@gmail.com.

18.4.2 StudMaster

StudMaster is a herd management program catering for all South African meat cattle breeds as well as various African breeds. It fully provides for SA Stud Book's Iris system as well as the Breedplan system used by a number of breeders societies in South Africa. Almost all paperwork is eliminated, except where data is collected at the kraal or in the veld, and even here pre-printed forms are used. Herd data is therefore available in one place. StudMaster displays data errors while you record the data, instead of later when the registration authority returns forms for iterations. The program will, for example, not allow the mating of a bull or calving of a cow within 100 consecutive days. Computer numbers are also looked up and printed, which eliminates hand input errors.

StudMaster is known at almost all breeders societies, SA Stud Book, Namibian Stud Breeders' Society and Zimbabwe Herd Book. It manages all herd administration on farm level - from matings, births, performance testing to purchasing, selling and regular weightings. StudMaster also prints all official reports. It already provides for estimated breeding values and can insert data electronically. Inbreeding percentages are calculated, as well as inbreeding percentages of future descendants so that it is not necessary for the breeder to compare family trees.

Because no two breeders follow the same breeding policy, StudMaster provides for a breeder to apply his/her own breeding policy, by means of the powerful selection program. Breeders can prepare their own reports and selection parameters after which the program selects animals based on such. Unofficial pre-weaning, weaning, 18 months and on-the-farm growth figures are calculated, which at this stage corresponds with the official calculations.

For more information, consult the website at www.studmaster.co.za.

19. The Animal Production Recording System

19.1 Sections of the System

- Reproduction Section.
- Weaning Section.
- Post-weaning Section.
- Central Growth Tests.
- On-the-farm Growth Tests.

It can be represented schematically as follows:

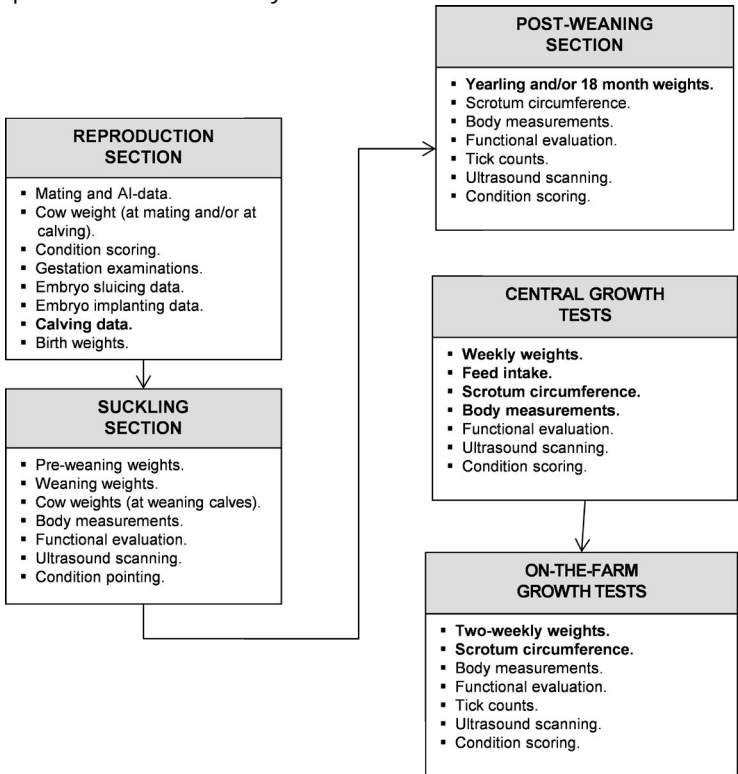


Figure 2: Schematic representation of the Animal Production Recording System.

19.1.1 Reproduction

The reproduction section involves the evaluation of the bulls, breeding cows and their calves. It includes planning of mating groups, bull planning, bull fertility tests, mating- and AI data, births, marking of calves and birth recording. Calf and cow weight should be taken within three days after birth. It is optional, but highly recommended. Submission of data. From the birth

notification data the following is captured: the AFC (age at first calving), the mother's intercalving period (ICP) and the birth weight ratio of the calf/cow.



19.1.2 Weaning section

This section comprises the pre-weaning (optional) and weaning weights of the calves as well as the cow weights at weaning (optional but strongly recommended). For pre-weaning and weaning weights, the age difference between the calves in a group (or test) may not exceed 100 days (this constraint is valid for all sections). Pre-weaning weight (optional) is taken between age 51 to 150 days and the weight is adjusted to 100 days. Weaning weight is compulsory and is taken between age 151 to 270 days and the weight is adjusted to 205 days. Animals from similar circumstances are weighed in like groups with the same codes. Exceptions are multiples, sick calves or their mothers and hand-fed calves. Males and females are calculated in different groups. Adjustments are made for calves from heifers and calves from older cows and they can thus be grouped together. Cow weight at weaning is optional but strongly recommended so that the weaning weight/cow weight and the cow efficiency ratios can be obtained. Please note that all indices are calculated within the relevant group and should thus be applied accordingly at selection. All weights should be empty belly (keep away from food and water overnight and weigh the next morning).

19.1.3 Post-weaning Section

This comprises 12- and/or 18 month weights. These tests are mainly done in the veld and on the heifers. Bulls can also be tested in the same way, but central and on-the-farm growth tests are, however, more popular for bulls. Yearling weights must be done between the age of 271 and 450 days and adjusted to 365 days, while 18 month weights should be done between age 451 to 634 days and adjusted to 540 days. From this phase, post-weaning indices are obtained. Indices are calculated within the relevant groups and should thus be applied accordingly at selection.

19.1.4 Central Growth Tests

These entail centralised growth tests at central or private testing station and mainly bull calves are tested.

Tests commence at pre-set dates and calf age is determined by calves born before a certain date. Calves must not be older than 250 days and must weigh between 220 and 275 kg at the start of adjustment. The test consists of an adjustment period of 28 days and a testing period of 84 days. It is an intensive test. The same feed in pill-form is used at all the testing stations. From this, figures are obtained for ADG (average daily gain) and FCT (feed conversion ratio).

It is preferred that at least 3 calves from 2 different sires be tested together. Preferably at least one sire must have had sons in a previous test. Measurements for shoulder height, body length, hide thickness and scrotum circumference are done at the end of the test and RTU (Real-Time Ultrasound) scanning is done, where possible. The testing station will notify the office of when the inspection can be done. Pointing of all bulls which are accepted, must be done by the inspectors in charge of the inspection. The breeder is responsible for the inspection cost.

- Heifers may also be subjected to this test, but it is only done in exceptional cases.

Merit awards are offered to approved bulls passing the Society inspection.

Table 6 : Merit awards for bull that passes the Society inspection.

Category	Minimum Weaning Index	Minimum ADG Index	Minimum FCR Index
Gold	100	100	107
Silver	95	95	100
Bronze	90	90	90
Sub-merit	None	None	None

19.1.5 On-the-farm tests

The minimum number of bulls are 10 per test. The age margin between the oldest and youngest bull calf per test is 100 days. With one breeder's bulls no weight margins are set but when more than one breeder participates, the margin is 75 kg between the lightest and the heaviest calf at the start of adjustment.

Adjustment weight (empty belly) and starting weight (also empty belly) should be taken the day before the test starts and again on day 1. The average weight is taken as starting weight. Weigh all the animals in the test every 14 days and at the end of the test again on the second last as well as the last day, with the average of the two as end weight. The closing day's weight is taken by the technical official or advisor. Measurements for shoulder height, body length, hide thickness and scrotum circumference are also taken but are optional. RTU scanning and functional pointing can also be done at an additional cost, but are also optional.

Various choices with regard to feeding exist depending on the needs of the breeder, such as:

- An intensive test where calves are fed a feedlot-type ("warm") ration. Adjustment

must start as soon as possible after weaning (about 14 days after weaning the last calf) but before the oldest calf is 12 months old. The adjustment period is minimum 21 days. The testing period starts directly after adjustment, up to 84 to 112 days depending on the bulls' growth (the minimum growth is 110 kg in a test). From this, figures are obtained for ADG, Kleiber (an adaptation of feed efficiency) and ADA (average daily gain per age).

- A semi-intensive test is a test where calves are fed in a camp. Adjustment as above but testing period is 112 or 140 days depending on growth. This test usually has a higher roughage component. The same results are obtained but the growth will probably be lower.
- An extensive test is a field test where calves are tested in a camp or camp system in the veld. Adjustment should start before the oldest calf is 14 months (425 days) old. The adjustment time is 21 to 90 days, depending on the growth rate. The testing period (after adjustment) is 140 to 270 days. Preferably only a salt/phosphate lick should be given on natural pastures, but there are no restrictions on the testing procedure. From this, figures are obtained for ADG, Kleiber and ADA. Preferably only a salt/phosphate lick must be given on natural pastures, but there are no limitations on the testing procedure. A growth of 110 kg over the testing period is a requirement. Because of the long testing period, it is ideal to do tick counts at every weighing. Condition assessment and temperament can also be done at every weighing. Veldbul SA's field test is similar to this method and an economic index can be calculated with these figures.

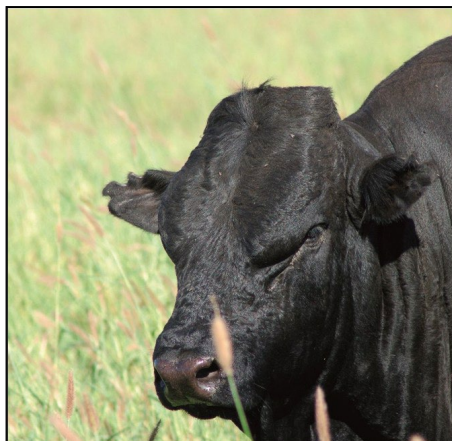
Comprehensive information regarding the requirements, rules, application forms and costs is available from the various Technical Advisors. Enquire at SA Stud Book.

19.2 Genetic Evaluation or BLUP

BLUP (Best Linear Unbiased Prediction): Breeding value or EBV (Estimated Breeding Value) is the BLUP breeding value of an animal and is a projection of its genetic ability (value) as parent in a breeding programme. EBVs are always given in the unit in which the trait was measured.

The EBV of an average animal with its own measurement, born in the base year, is set equal to 0. The EBVs of all animals are expressed relative to this base year. Calculation is done annually during April for Drakensbergers. Every member receives a breeding value report (herd profile) annually, of all its active animals and their sires. The Drakensberger is the first breed which received a complete genetic analysis.

When calculating the breeding values, all information of the animal and its relatives, as well as genetic relationships between herds are used and the more information is avail-



able, the more accurate the breeding values will be. At an accuracy of below 60%, very little information is available and can differ a lot from year to year. At an accuracy of 60 to 90%, own measurements are available and/or little offspring is available and can still change. Accuracy of above 90% indicates that ample data is available and data is relatively stable. Breeding value indices are indicated in the report and 100 will be the average. Breeding value indices of above 100 will therefore point to above average animals. However, caution should be exercised when indices are too high or too low. Explanatory notes will be included in the genetic evaluation.

A short definition of traits follows:

REPRODUCTION:

Calving rate breeding value is an indication of fertility as well as the retention of a bull's female progeny. It is only available for bulls.

Scrotum circumference breeding value indicates the genetic differences between animals for scrotum circumference as measured in central and on-the-farm growth tests.

BIRTH:

Birth-direct breeding value reflects the genetic differences between animals for birth weight of the offspring. Animals with lower values will have lower birth weights with a smaller chance of maternal calving problems.

Birth-maternal: Female animals differ in their ability to restrict their calf's growth in the womb. Maternal breeding value for birth weight of bulls reflects genetic differences between bulls for this ability of their daughters. Low breeding values indicate a bigger restriction (same is true for the reverse).

GROWTH RATE:

Wean-direct breeding value reflects genetic differences between animals for growth ability up to weaning.

Wean-maternal breeding value for a cow reflects genetic differences between animals for a cow's milk production and her genetic ability to create an environment for her calf to grow optimally. A weaning-maternal breeding value for a bull indicates the maternal production of its female offspring.

Yearling weight breeding value reflects genetic differences between animals for growth ability up to the age of one year.

18 month weight breeding value reflects genetic differences between animals for growth ability up to the age of 18 months.

Mature weight breeding value reflects genetic differences between animals for mature weight. Weights of cows 4 years and older at weaning of their calves are used for the estimation of this breeding value.

Average Daily Gain (ADG) breeding value reflects genetic differences between animals for post-weaning growth. It is measured during central and on-the-farm growth tests.

EFFICIENCY TRAITS:

Feed Conversion Ratio (FCR) breeding value reflects genetic differences between animals for efficiently converting feed to body weight. Animals with low EBVs for FCR is more efficient and is only measured in central growth tests.

Kleiber ratio is an indication of metabolic growth efficiency on veld usage.

The benefit of genetic evaluation is that breeding values within the breed over groups, seasons, years and herds can be compared. It is also the easiest and most accurate means of identifying exceptional breeding animals. Because of the bull's considerable contribution to the herd, selection of sires is all the more important.

See table for selection on description of characteristics - Annexure B. Attending a course is highly recommended in order to be informed to confidently make the right decisions.

With the aid of the above information, annual awards are made to cows:

19.3 Best Producing Cow Award – Requirements (ARC)

- i. Cow must be alive on the Best Producing Cow report run date (normally 1 March annually).
- ii. Cow must be owned by an active member on Best Producing Cow report date.
- iii. Cow must have at least five natural calving dates on record at Best Producing Cow report date.
- iv. Cow's age at first calving may not exceed 1,187 days (39 months).
- v. Cow's average ICP (for all natural calvings) may not exceed 425 days.
- vi. Cow must have had a normal calving within 548 days (18 months) before the report date.
- vii. After the first calf with a valid weaning weight, the cow may have maximum two calves without a weaning weight or with invalid weaning weight.
- viii. Breeding value requirements:
 - Only cows with calculated estimated breeding values from a genetic evaluation analysis not older than 18 months at the run date of the Best Producing Cow report, are considered.
 - Wean-direct breeding value in the best 50% of the active female animals in the breed.
 - Wean-maternal breeding value in the best 50% of the active female animals in the breed.
 - Birth-direct breeding value in the lowest 99% of the active female animals in the breed.
 - Birth-maternal breeding value in the lowest 99% of the active female animals in the breed.

Note: The latest breeding values available on the Animal Production Recording System at run rate of the Best Producing Cow award will always be used.

19.4 Requirements for Preference Awards to Drakensberger cows (SA Stud Book)

- i. Cow must be alive on report run date of the Preference Awards report.
- ii. Cow must be owned by an active member on Preference Awards report date.
- iii. Cow must have at least two inspected offspring (i.e. with an inspection date) on record at Preference Awards report date.
- iv. Cow's age at first calving may not exceed 1,187 days (39 months).
- v. Cow's average ICP (for all natural calvings) may not exceed 425 days.
- vi. Cow must have had a normal calving within 548 days (18 months) before the report date.
- vii. After the first calf with a valid weaning weight, the cow may have maximum two calves without a weaning weight or with invalid weaning weight.
- viii. Breeding value requirements:
 - Only cows with calculated estimated breeding values from a genetic evaluation not older than 18 months at the run date of the Best Producing Cow report, are considered.
 - Wean-direct breeding value in the best 50% of the active female animals in the breed.

Note: The latest breeding values available on the Animal Production Recording System at run rate of the Preference Awards will always be used.

Note: Progeny refers to all offspring; excluded calf book animals (i.e. excluded offspring not yet inspected).

20. Genomics

The Drakensbergers are part of the Beef Genomics Programme (BGP) and were partially funded by the State over a three-year period (2015 – 2017). The project plan was compiled in collaboration with Drs. Japie and Bobbie van der Westhuizen of SA Stud Book. Approximately 1,000 SNP analyses were conducted during the course of the project. Research projects also contribute to the total number of analyses. A reference framework for the Drakensberger breed has been established.

BGP 2 commenced on 1 April 2024 and will run over a period of 3 years. Various universities, Unistel, SA Stud Book, and their affiliated cattle breeds are among those involved in the project. The government has again provided partial funding for the project. The Drakensberger breed has been allocated 511 genomic tests per year.

Each member contributes to this project through the thorough collection of production data, and its success therefore depends on what is measured and recorded on the farm.

In current DNA analyses, 17 markers are identified by means of microsatellites, and parentage is determined accordingly. With SNP analyses in genomics, as many as 700,000

markers or alleles are already being analysed (Veeplaas 6/8/15 p.73), and markers have already been identified for virtually every aspect of the animal and its composition.

The polled gene, double-muscling gene, colour genes, genes for meat tenderness, and genes associated with skin traits have already been identified. The Drakensberger Cattle Breeders' Society strongly recommends that all breeding bulls be genomically tested in order to eliminate undesirable traits in breeding. Contact details of laboratories that may be used are available in Annexure C.

Genomics is not the alpha and omega of cattle farming, but there are definite advantages to its use. Genomically enhanced breeding values are already available and have a significant impact on the accuracy of estimated breeding values.

21. Double muscling or Miostatin – Risks and management

The purpose of this document is to highlight risk factors relating to double muscling (a genetic abnormality). It also contains practical guidelines to empower breeders to manage the occurrence of double muscling themselves.

21.1 Background

The occurrence of double muscling is a common phenomenon in all beef cattle breeds in South Africa. Following increased awareness (and associated uncertainty) among breeders regarding the occurrence of double muscling, Drakensberger SA has compiled this information document to provide guidance to its breeders.

Below is an extract from the Constitution of the Society regarding its objectives. It is the responsibility of the Council to ensure compliance.

Subject to the provisions of the Act and this Constitution, the objectives of the Society are:

- To obtain and disseminate information regarding the best methods by which the breeding of animals can be conducted, expanded and continued in the most advantageous manner, and to keep members informed of scientific and other developments; and*
- To establish a Standard of Excellence for the breed as well as minimum breed standards based on production data, visual evaluation for genetic defects, and functional efficiency.*

It is the duty of Drakensberger SA to protect the integrity of the breed and to promote sustainable breeding practices. The Society is committed to continuous breed improvement and encourages its breeders to pursue ethical breeding principles under all circumstances. This includes ensuring that all genetic defects within the breed are removed, managed or improved.

Breeders are advised to consider the guidelines contained in this document in their own breeding programmes. It is each breeder's responsibility to manage double muscling

(myostatin carriers) within their own herds.

It is important to note that well-muscled bulls with capacity that do not carry the myostatin gene are available. Drakensberger SA therefore aims to improve muscling and capacity using non-carrier animals (normal animals) for sustainable success without compromising survival traits such as calving ease, fertility and adaptability.

21.2 Double muscling - Technical information

Double muscling is the manifestation of a condition known as a myostatin gene mutation and is caused by a single gene. There are various known myostatin mutations or variants, some of which are recessive (silent) and others partially recessive for different traits.

SA Stud Book currently categorises genomic double muscling variant test results into three different categories (red, blue and green), displayed on www.sabeefbulls.com. Two variants (Q204X and nt821) are internationally classified as “deleterious” (red), of which nt821 occurs in the Drakensberger. Variant F94L (blue) is classified as “less deleterious”. There are also “neutral” variants (green) of the myostatin gene that do not cause double muscling.

Further reference in this document refers only to the “deleterious” (red) myostatin variant nt821.

The myostatin or double muscling condition results from a genetic abnormality in the production of myostatin. Natural mutations of the myostatin gene exist and affect the production of a protein that regulates muscle development. An animal with two defective double muscling genes lacks the myostatin protein and muscle growth becomes unregulated.

The most obvious deviation from the normal phenotype is excessive muscling, particularly in the hindquarters and shoulders of homozygous double-muscled animals (two mutated genes).

Heterozygous double muscling (one copy of the mutation) does not always result in an unfavourable phenotype, but certain traits — such as birth weight — are affected. Increased muscling may occur without obvious negative side effects in other traits because some mutations are partially recessive.

However, other traits may be significant, especially when the syndrome is fully expressed in homozygous double-muscled animals and to a lesser degree in heterozygous animals:

- Minimal and altered fat cover on the carcass
- Shorter, thinner and finer bone structure
- Abnormally large, wide and rounded hindquarters and thighs with pronounced muscle separation
- Delayed puberty, reduced fertility and reduced milk production

- Increased likelihood of dystocia (difficult births) due to:
 - » Smaller pelvic size in females
 - » Heavier and more muscular calves
- Enlarged tongue in newborn calves affecting timely colostrum intake
- Poorly developed reproductive organs (vulva, teats and scrotum)
- Increased susceptibility to respiratory diseases, likely due to higher aerobic metabolic demands and smaller organ size
- Reduced adaptability in drier environments with prolonged nutritional stress

(For additional information or research articles regarding different types of myostatin mutations and their effects, contact Dr Helena Theron at SA Stud Book or email helena@stamboek.co.za.)

21.3 Herdbook Registration

Myostatin DNA tests are currently available at various laboratories, and results are planned to be sent electronically to the SA Stud Book database.

Animals not tested for the deleterious variants Q204X and nt821 will automatically be reflected as “not tested” in the SA Stud Book database.

In future, animals may potentially be certified as free of double muscling (normal) if parentage verification has been done on both parents and both have tested negative for known double muscling variants.

SA Stud Book is expected to make genetic testing information transparently available to stakeholders and is therefore obligated to publish all double muscling test results in its database, including new information as it becomes available. This applies to testing conducted by SA Stud Book, Drakensberger SA or individual breeders.

Animals tested as carriers (single gene) that do not exhibit excessive muscling during visual inspection may be approved as breeding animals and may be sold at official Drakensberger auctions or privately.

However, no homozygous double-muscled animal (two genes) may be approved or sold for breeding. If an approved bull later tests homozygous, its registration will be cancelled. Homozygous approved females will remain on the register until 2023.

21.4 Embryo or Artificial Insemination (AI) Registration

According to the Animal Improvement Act, animals with a genetic defect such as double muscling may not be registered as AI bulls.

Since the original legislation was written before DNA testing for double muscling was possible, it is generally understood that only offspring inheriting two genes (homozygous double muscling) will be disqualified for registration purposes under the Act.

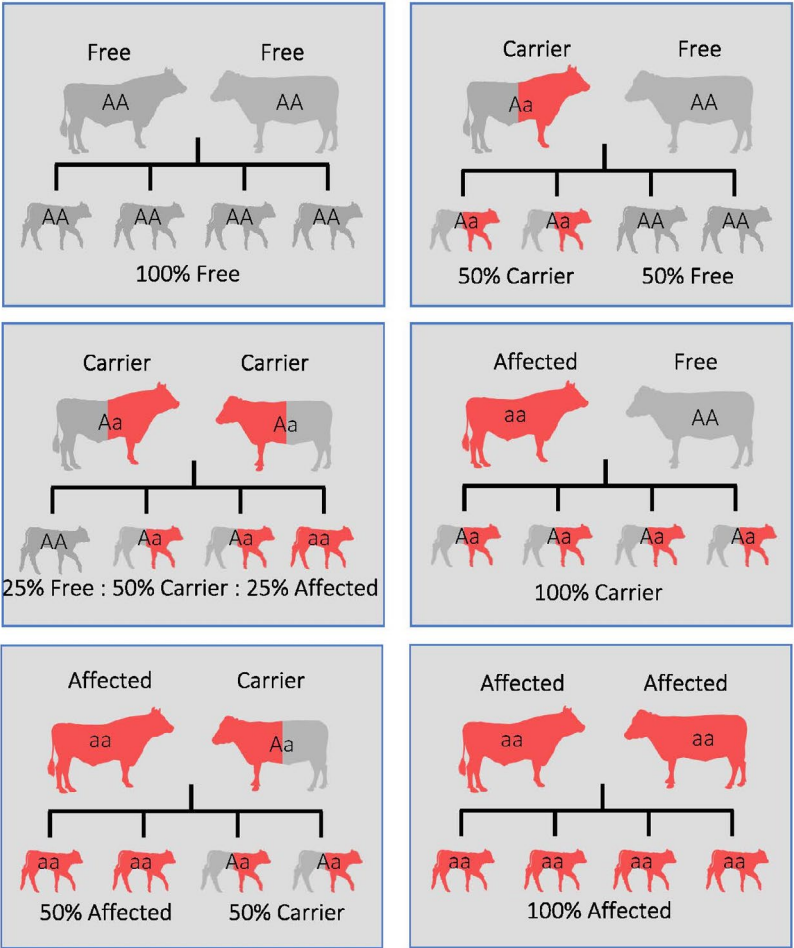
Any animal considered for AI registration by Drakensberger SA must be tested for

myostatin genes and the status must be disclosed and published in the SA Stud Book database.

All AI bulls must also undergo genomic testing, including polled and myostatin variant tests. Note that the current AI registration policy is under review by the Technical Committee.

The result of mating between male and female animals, where a mutation is either present or absent, can be grouped as follows:

Inheritance of Single Genes



21.5 Management guidelines

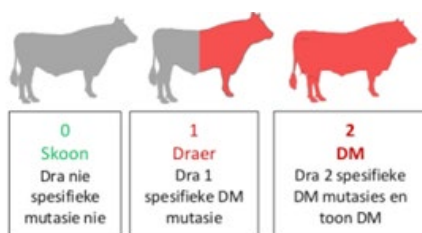
Practical guidelines to assist breeders in managing double muscling:

1. Breeders must take responsibility for the negative impact of myostatin mutations and for self-regulation.
2. Double muscling can be relatively easily bred out due to it being a single-gene condition and the availability of DNA testing.
3. Managing single-gene traits selectively is difficult due to inheritance patterns. Such traits cannot be diluted.
4. Breeders must understand myostatin mutations and how they occur. Test results are often presented as:

(0) No double muscling gene present (normal)

(1) One gene present (heterozygous carrier)

(2) Two genes present (homozygous double muscling)



5. Breeders and clients must understand the risks. A homozygous double-muscled calf represents permanent loss for breeding, affecting herd economics and productivity.
6. Knowing the status of your breeding herd, especially bulls, assists with managing mating decisions. It is strongly recommended to test all herd sires and suspected carriers. Testing costs are low compared to potential losses.
7. Stud breeders should test all bulls supplied to both stud and commercial markets to enable informed decisions. Approximately 90% of Drakensberger bulls are produced for the commercial market.
8. It is critical to mate heifers with normal (non-carrier) bulls. This eliminates the risk of homozygous calves and halves carrier frequency.

Dystocia results from morphological imbalance between cow pelvis and calf size:

- Normal heifer × carrier bull – dystocia due to heavier calf
 - Carrier heifer × normal bull – dystocia due to smaller pelvis and heavier more muscled calf
 - It will also reduce the risk of difficult births due to potentially heavier birth weights caused by double muscling, even in some heterozygous female animals.
9. Skip cows in good condition should preferably be mated to normal bulls to reduce dystocia risk.

10. If heterozygous double-muscled animals (single-gene carriers) are mated with other carrier animals, this increases the potential for higher birth weights, reduced milk production and, under certain circumstances, reduced fertility, depending on the genotypes of the two parents. The outcome of heterozygous mating decisions will result in only a 25% chance of normal calves, a 25% chance of homozygous double-muscled calves, and a 50% chance of single-gene carrier calves.
11. In exceptional cases, an outstanding heterozygous bull may be used on normal females, understanding that 50% of offspring will be carriers.

Drakensberger SA acknowledges Bonsmara SA and SA Stud Book for information used in compiling this document. For further enquiries, contact the Drakensberger SA Council.



22. Practical actions to be taken, which can serve as a basic management program

Time of mating: Mating time varies between regions, but is linked to the time when feed is in abundance. In the Highveld, November, December and January are preferred for mating because of the general good condition of the veld during that time. In the west, mating time will move forward with approximately a month.

Preparation for mating time: Provide for enough bulls. Have them tested for fertility, trichomoniasis and fibrosis. Decide whether you will be making use of AI (artificial insemination) and make the necessary arrangements with the veterinarian.

Mating and mating groups - single bull mating: Select the cows in groups of 25 to 35 depending on the bulls that are to be used. A 3 year old bull will easily service 35 cows in a 90 day mating period, but a 2 year old bull will only service 25 cows. Select the cows

on visual appearance or breeding values and then use a bull that will improve weak points. For example, for a group of cows with negative EBVs for weaning, use a bull with positive EBV for weaning. There will never be a bull that is 100% perfect but emphasis can be put on certain aspects, and in a next generation on other aspects.

Multi-bull mating is also possible and larger numbers of cows can be grouped together with the same norm as for single bull mating. All bulls used in a stud herd must be typified. Management thereof is much easier and flaws in roaming bulls are eliminated. Another benefit is that, should one bull have a problem with fertility (temporary or permanent), another bull will be available for mating. At single bull mating, the problems might only be evident once gestation tests are done.



AI (Artificial Insemination): AI requires a degree of expertise. Cows can be synchronised and inseminated together. A veterinarian will be required with regard to arrangements and specific tasks. Cows can also be artificially inseminated on observation. Training is mandatory for the person doing the observation and AI as well as handling the semen. With AI, the breeder can acquire semen of outstanding bulls without the capital expense of purchasing such a bull. Semen from bulls used in a stud herd must be registered as an AI bull, unless it is your own bull or you hold a share in the bull.

Mating: AI cows for first cycle of 21 days and wait a further cycle before bulls are placed with the cows. **Natural mating:** Service heifers 6 weeks before the cows to give them enough time for recovery before the next mating season. Make use of a 90 day mating time and adjust it for when grazing is at its best, because then the cows will be in a growing curve for condition. It is also possible to include a second mating time in the winter - once again a management adjustment. Ensure that bulls are tested before mating for fertility and diseases. *All bulls used in a stud herd, must be typified. No calf will be accepted if the sire was not typified.* It is important to send mating lists to Stud Book after mating time. It can also be submitted electronically by means of an appropriate management software package.

Calving time: Ensure that there is enough observation during calving time so that problems can be identified in time. When a calf is born, it must be marked within three days (compulsory) and weighed (optional). Also weigh the cow if possible (also optional).

For multi-sire mating: Multi-sire mating eases management and prevents small mating herds. The disadvantage is that corrective mating cannot be done. Also, paternal testing must be done by means of DNA typing to determine the fathers of calves from multi-bull matings. An animal is only typified once in its lifetime. When a calf is born

from a multi-bull mating, a few hair strings are pulled from its switch and put in an envelope with the calf's number written on it. If it was not done previously, also do the same for the mother and father. To send in the hair, number all the envelopes in numerical order and complete the prescribed form. The envelope number, animal's ID number, date of birth, likely mother with her DNA number and probable sires with their DNA numbers are all recorded on the form. Application forms for paternal/maternal testing through DNA typing can also be printed from BeefPro. The form, together with the samples, are sent to the genetics laboratory at the ARC, Irene (contact: see Annexure C).

Gestation testing: Gestation testing can be done 6 weeks after the bulls were taken away from the cows. Decide whether non-pregnant cows will be kept, otherwise reject when calves are weaned. Non-pregnant heifers should be rejected, since heifers that have not calved by age of 39 months are automatically rejected.

Example of ear incisions for numbering:

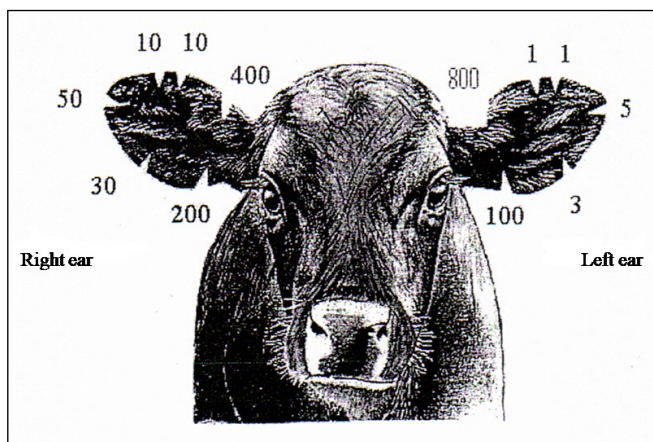


Figure 3: Examples of markings.

Births: As calves are born, they have to be recorded. Birth notifications for all calves must be submitted to SA Stud Book within 120 days of birth. It can be done electronically through BeefPro or Logix, or in writing on the prescribed form (available from the office). Birth notifications submitted after 90 days will be considered late births and fines are payable as follows (subject to change annually): 90 to 119 days R15.00 per entry, 120 to 149 days R20.00 and 150 to 179 days R25.00. Birth notifications submitted after 180 days will be subject to DNA testing (for own account) to substantiate blood relation. A practical way to avoid penalties is to check, at month-end, whether all calves born during the month, were recorded and to check returned birth notifications for mistakes and queries. **For stud breeders, accurate and up-to-date record keeping is not negotiable.** Dehorn calves between 14 days of age but before 3 months for best results.

Wean: Weigh calves for weaning weight between 151 and 270 days and also weigh cows (optional). It is not necessary to take the calf away from its mother to weigh it.

Wean calves at age 7-8 months. For the purpose of performance testing/comparison etc., within a group, calves may not differ more than 100 days in age. All calves' weights and accompanying particulars must be submitted to SA Stud Book within 14 days. It can be done electronically through BeefPro, by means of Logix or in writing on the prescribed form. Should you opt not to use the electronic option, you will receive weighing lists with weighing date limits and best weighing date for this purpose from the SA Stud Book. The calves will then already be divided into groups. Bulls and heifers may be submitted on one form. Processed data will be returned in electronic or printed format. All weights are adjusted to 205 days and will therefore be comparable within the group. Wean indexes are compulsory for inspection. Cows with weaker milk can be identified at this stage and rejected.

Central and On-the-farm Growth Tests: Select bull calves for central and on-the-farm growth tests. These tests are optional. If bulls are not tested in central or on-the-farm growth tests, they must, like the heifers, be weighed at 12 and 18 months and the data must be sent to SA Stud Book.

Yearlings: Weigh heifers and bulls not being tested in central or on-the-farm growth tests between age 271 to 450 days. Weights are adjusted to 365 days, to be comparable within the group. Submit as for weaning weights. Inspection can be done from 12 months - then the 12 month index is compulsory and the average of weaning and 12 month indexes must be 90 or higher.

18 months: Weigh heifers and bulls not being tested in central and on-the-farm growth tests, between age 451 to 634 days. Weights are adjusted to 540 days, to be comparable within the group. Submit as for weaning weights. If animals were not up for inspection yet, the 12 or 18 month indexes can be used. Preferably the average weaning, 12 and 18 month indexes of 90 or higher is applicable.

Inspection: Apply for inspection during December/January and pay the inspection deposit as determined annually by the board. You will be notified of inspection dates and who the inspectors will be. Provide for a day before or after the date. The forms can be downloaded from Logix Beef printed from BenguFarm or requested from the office. All the available information will be indicated on these forms. The herd designation mark (HDM), Year and Serial Number must already be branded. After the inspection, the inspectors will record animals that were approved/rejected on the forms, and will sign the documents. The inspectors take one copy with them for the office and one copy remains the member's. All information regarding the selected / inspected first acceptance animals should be completed on the correct prescribed forms and should be sent to the Drakensberger office.

Transfers and Cancellations: The seller of registered animals is responsible for the transfer of the animals to the buyer. Both transfers and cancellations can be done electronically by means of a suitable management software package. All instructions can also sent to SA Stud Book in writing (it is recommended to keep duplicate)

The Annual General Meeting (AGM) is held annually during August/September and all members and special members have voting rights at this meeting. Notifications are

sent out timeously. Any points for discussion must be submitted to the office within the predetermined time frame.

Marketing: An annual calendar and year planner is available, with information of all members per province, as well as the auction dates for the year. The calendar is sponsored by advertisers. Advertising space is auctioned annually at the AGM/dinner. Advertisers also receive exposure on social media during the month of their sponsorship.

An active website is regularly updated — visit www.drakensbergers.co.za. Social media platforms are actively utilised by our marketing team for promotional purposes.

Articles and advertisements appear regularly in various publications. Examples throughout the year include: Landbouweekblad, Farmers Weekly, Graan SA, Studbreeder, Agri Trader, Veeplaas, the RPO (Red Meat Producers Organisation) magazine, and various websites. Pamphlets are compiled and printed annually for distribution.

Promotional material is supplied to each club for display at information days, shows, exhibitions and auctions. Large information boards have also been erected along various main routes. Reflective name boards for farm entrances are available from the office. The logo already appears on both sides — you only need to add your details and a good photograph of your showcase bull.

Caps with our logo, pocket and lapel badges, door decals, key holders and licence disc stickers are also available. Shirts, jackets and ties can be ordered on request from the office.

23. Auctions

All auctions take place under the auspices of the Breeders' Society. The National Auction is held annually in June and is the ideal opportunity to acquire outstanding genetics. In addition, Club Auctions and Production Auctions are held regularly.

Two inspectors (Selectors) are appointed for each auction. The inspectors must inspect all animals listed in the catalogue. Animals are checked, among other things, for auction readiness and obvious defects. Bulls that are not approved for the auction may not be sold at the auction.

Club auctions are organised by the respective clubs and are subject to the club's rules. However, any member is entitled to offer at least one bull at club auctions. Clubs are responsible for all arrangements. Production auctions and group auctions are hosted by one or more breeders, who are themselves responsible for all arrangements. Inter-breed auctions are organised by the respective auctioneers, and any breeder of any breed may enter bulls and/or female animals.

All entries are administered by the office. The person responsible for the catalogue sends the number of the animals, their registration numbers, tests done on the animals and remarks in catalogue order to the office. The office will then request the catalogue from SA Stud Book after which the secretary compiles the catalogue and returns a draft

format. Members will then have an opportunity to do corrections or make enquiries for omitted information. The information is sent back to the office, and then to Stud Book, after which the correct format is sent to the office. The catalogue is then reviewed by a person appointed by the board, for minimum standards after which the catalogue is sent via the office to the relevant person to be printed. See Annexure A for catalogue discussion.

The following certificates are required for animals presented at an official auction and must be available at inspection (done by the patrons as appointed by the society) before the auction:

1. A fertility certificate issued by a veterinarian or livestock technologist approved by the board, which specifies that the bull is fertile and in his/her opinion suited for breeding. The certificate must contain the ID number of the bull, the date of testing and must be signed by the person issuing the certificate. Bulls to be tested for Trichtomoniasis.
2. In the case of female animals, the Brucellosis and Tuberculosis certificates must be available. Certificates should not be older than 12 months.
3. The certificate confirming an animal's gestational status, issued by the veterinarian. (Within 30 days before the auction)

The bulls' myostatin status for NT821 must also be reflected in the catalogue.

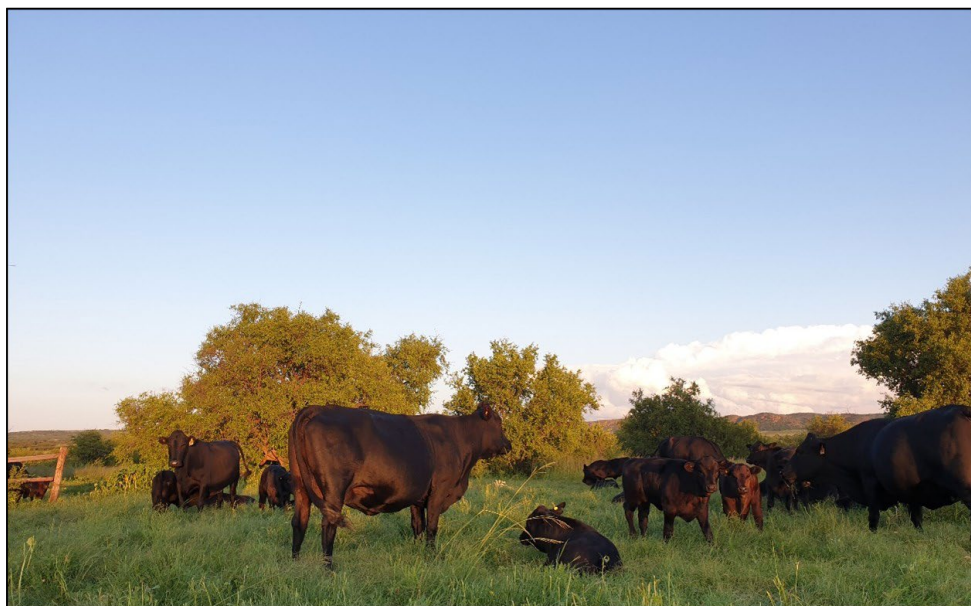
See the details of the auctions in our promotional material or contact the office for further enquiries.

24. Annexures to the handbook

ANNEXURE A: Catalogue discussion.

ANNEXURE B: Description of characteristics

ANNEXURE C: General information and contact details.



Annexure A: Catalogue description

Use a standard catalogue of SA Stud Book, notes under heading BLUP and also Annexure B - description of characteristics.

The information contained in catalogues and profiles, are only possible through the accurate measurement of weights and dimensions by dedicated breeders and technical advisors, and the processing and recording of SA Stud Book.

Catalogue Entry	Description
ID number	This is a unique number for that animal and consists of the breeder's herd designation mark (HDM), the year in which the animal was born and serial number, e.g. EMB080222.
Computer number	This is the animal's computerised number and is unique e.g. 0084550623.
Animal Status	A: Appendix Register A. B: Appendix Register B. SP: Stud Book Proper (fully registered).
Date of birth	Date on which animal was born.
Family tree	The father is in the top row and the mother in the bottom row, with their predecessors in the same order.
ICP (Mother)	ICP: Inter-calving period in days.
Performance and Breeding Values:	
Birth weight	Weight: This is the actual weight at birth. Keep in mind that a heifer's calf can be lighter. Also the time of birth - summer calves grazing on leftover crops or established pastures, can produce heavier calves. Where the weight is lacking, the calf was not weighed or the weight was not recorded. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Birth direct and maternal</i> .
Weaning weight	Weight: Actual weight is adjusted to 205 days. Peers are the number of animal weighed in that group. Index is the animal's performance measured against the average of the animals in that specific group. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Weaning direct</i> .
Yearling and 18 month weights	Weight: The actual weight is adjusted to 365 and 540 days respectively. Peers are the number of animals weighed in that group. Index is the animal's performance measured against the average of the animals in that specific group. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>12 months</i> .

Catalogue Entry	Description
ADG (Average Daily Gain)	Mass: ADG is the end mass less the starting mass, divided by the number of days in the test in grams. Information will only be available if the animal was tested in central and on-the-farm growth tests. Peers are the number of animals weighed in that group. Index is the animal's performance measured against the average of the animals in that specific group. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>ADG</i>.
FCR (Food Conversion Ratio)	The amount of feed (in kilogram) eaten in order to increase 1 kilogram in weight. Information will only be available if animal was tested in central growth tests. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>FCR</i>.
Scrotum	Scrotum circumference as measured at the end of central or on-the-farm growth tests in mm. Information will only be available if the animal was tested in central and on-the-farm growth tests. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Scrotum</i>.
Length and height	Shoulder height and body length as measured at the end of central and on-the-farm growth tests, in mm. Information will only be available if animal was tested in central and on-the-farm growth tests. Breeding values: Refer to the section on BLUP as well as Annexure B - <i>Height and Length</i>.



Annexure B: Description of Characteristics

Attribute	EBV Index	Description/Measurement
Calf growth (direct)	Birth weight	Birth weight (birth direct)
	Weaning weight	Weaning weight (wean direct)
Mother characteristics (maternal)	Birth maternal	Birth weight of cow/daughters' calves (birth maternal)
	Milk	Milk production of cow/daughters' calves (wean maternal)
Growth and Efficiency	Post-weaning weight	Combination of 12 - and 18 month weights of bulls and heifers.
	Adult weight	Combination of adult weights between 2 -5 years of age of cows at weaning their calves.
	ADG	Average daily gain as measured in post-weaning growth tests.
	Feed conversion	g Feed consumed per 100g weight gained in post-weaning growth tests.
Reproduction	Scrotum circumference	Scrotum circumference of bulls in post-weaning growth tests (bull fertility).
	Age at first calving	Age at first calving, as well as how soon a heifer calves in calving season (heifer fertility).
	ICP	Combination of first 3 inter-calving periods of cows (cow fertility).
Frame	Height	Shoulder or hip height of bulls in post-weaning growth tests.
	Length	Length between shoulder and hip of bulls in post-weaning growth tests.
Carcass	Slaughter %	Calculated from end weight and ultrasonic measurements for eye muscle surface and fat thickness.
	Meat	Calculated from end weight and ultrasonic measurements for eye muscle surface and fat thickness.
	Marbling	Ultrasonic measurement of intramuscular fat at end of growth test.
Selection Values (Rand)	Growth value	Combination of consumption, growth and weight characteristics.
	Cow value	Combination of fertility, ease of calving, growth, milk and cow size.
	Production value	Combination of Cow value (80%) and Growth value (20%) in one.

Goal	General Guidelines for Breeding Value Indices						
	Negative	80	90	100	110	120	Positive
Easy calving	Heavy						Light
Heavy weaner.	Light						Heavy
Easy calving.	Heavy						Light
Heavy weaner.	Little						A great deal
Above average post-weaning growth.	Light						Heavy
Average size adult animals.	Light						Heavy
Decent growth and adjustment.	Low						High
Good conversion of feed to meat.	Poor						Good
Fertile bulls.	Small						Large
Fertile heifers.	Late calving						Early calving
Fertile cows.	Long ICP						Short ICP
Average size adult animals.	Short						Tall
Slightly longer animals for more meat.	Short						Long
Better meat to bone ratio.	Low						High
More meat on carcass.	Little						More
Juicy meat.	Little						More
Profitable meat production.	Loss						Profit
Profitable cows.	Loss						Profit
Profitable production.	Loss						Profit

Annexure C: General Information and Contact Details

DRAKENSBERG BREEDERS' SOCIETY

Requirements for membership:

Members of the Drakensberger Cattle Breeders' Society must also be members of SA Stud Book and the Animal Production Recording System. To join the breeders' society, the necessary application forms for the breeders' society, SA Stud Book and the Animal Production Recording System must be completed and sent to the office, accompanied by the necessary amounts owing. The rules and regulations are contained in the constitution and are binding on all members.

Costs associated with studbreeding can be obtained upfront from the office.

Schedules

The constitution, regulations and schedules are available on request from the office.

Composition of the Board

The board comprises nine board members, three honorary presidents and a secretary. Board members are elected for a three-year term, after which they are once again eligible for election. Three board members' membership therefore lapse annually. The president and vice-president are chosen annually from the elected board members and may not serve for longer than three consecutive years. Committees are organised from the serving board members and experts may be co-opted. The executive committee, marketing committee, technical committee and committees for Nampo and training are active. Executive committee meetings (online) are held monthly, except for the months when board meetings are held. Four board meetings are held annually.

The council members per year is shown on the Drakensberger SA website.

CLUBS

Clubs have their own constitutions but are subject to the constitution of the breeders' society. Clubs arrange their own auctions, do marketing in their areas and organise information days.

OTHER CONTACT INFORMATION

Genetics testing (DNS)

Kontakt persoon: Hannalize Swart tel (012) 672-9231 Pretoria

ZooOmics 071 493 2137 of <https://zooomics.co.za> Pretoria

Unistel 021 938 9213 of <https://unistelmedical.co.za> Parow-Noord

WEBSITES

Drakensberger Society	www.drakensbergers.co.za
SA Stud Book	www.studbook.co.za
Logix	www.logix.org.za
BenguFarm	www.bengufarm.co.za
Studmaster	www.stoetmeester.co.za
ZooOmics	www.zoomics.co.za
Unistel	www.unistelanimalservice.co.za

General enquiries: Office

The Drakensberger Cattle Breeders Association of South Africa
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OFFICE:

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Email : drakensberger@studbook.co.za

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